Cal.net
Internet and Telephone
4101 Wild Chaparral Drive, Shingle Springs, CA 95682
530-672-1078 • 844-4CALNET • http://www.cal.net

28 August 2023

City of Merced
ATTN: Broadband Public-Private Partnership
Jeff Bennyhoff
678 W 18th Street
Merced, CA 95340

Re: RFP No. 08282023

Dear Jeff:

Cal.net, Inc. hereby submits its response to the following City of Merce RFP:

Request for Proposal (RFP)
for
Broadband Public-Private Partnership
RFP Number: 08282023
Release Date: 08/04/2023 8:53 AM
Close Date: 08/28/2023 2:00 PM

Based in Shingle Springs, California, Cal.net is a facilities-based broadband service provider that started business in 1997 serving the communities of Davis, Woodland, and western El Dorado County. Cal.net launched its rural fixed-wireless broadband access ("FWBA") service in early 2006. The company's fixed-wireless broadband service currently provides broadband Internet access at speeds up to 100/100 Mbps covering an area of over 12,000 square miles throughout parts of twenty-one central-California counties, including the foothills of the Sierra Nevada Mountains from Grass Valley to Groveland and in the Central Valley from Yuba City to just north of Bakersfield. At the time of this writing, Cal.net is also engaged in two gigabit fiber-to-the-home development projects to serve a new community of about 250 homes in the town of Jamestown and about 60 homes and several community buildings in the Shingle Springs Rancheria, with initial gigabit service availability by the end of 2023 for both projects.

As can be seen in our RFP response, the City of Merced is embedded in our existing serve area, and we have services to much of the surrounding rural areas. Extending into the unserved/underserved areas in the City is a natural extension of our mission to provide the best possible broadband service to communities in need. If chosen to partner with the City on this particular project, Cal.net will be utilizing local norther-California based subcontractors to trench, lay conduit, and pull fiber.

As will be evident from the material presented herein, Cal.net has the qualifications to perform all services contemplated by this RFP. Beyond the scope of the specific project contemplated by this RFP, Cal.net is certainly willing and capable to build last-mile connectivity in order to operate and provide services to un- and underserved, disadvantaged, vulnerable, and/or low-income areas at affordable rates. To accomplish this, we would utilize grant funding from the State's CASF and FFA programs.

However, in order to focus on the successful launch of the main project contemplated by this RFP, we would defer the requisite grant application until the opening the next grant application window.

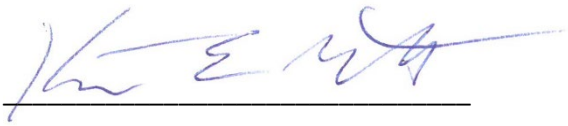
Cal.net looks forward to partnering with the City of Merced on fulfilling its needs regarding the delivery of broadband fiber services to the communities identified in the RFP. We will be happy to coordinate with the City during its preparation of grant applications during the current FFA application window as well as any future FFA and CASF grants it may contemplate. (As an aside, we recently completed a very similar coordination with Kern County on a CASF grant application in which they were the applicant and we were the contractor and service provider.)

Please feel free to reach out to me at any time – I will be the primary contact for Cal.net.

Mailing Address:	Physical Address:
P.O. Box 1041	4101 Wild Chapparal Drive
Shingle Springs, CA 95682	Shingle Springs, CA 95682

Sincerely,

Kenneth E. Garnett



Chief Strategy Officer, Cal.net, Inc.

Email: kgarnett@corp.cal.net

Phones: 530-350-1839 (office direct)
925-895-1241 (mobile)
530-672-8427 (FAX)

Contents

1) Background of the Proposed Partner(s)

Cal.net, Inc is a Delaware C corporation, in good standing with the States of California and Delaware. The company is a standalone organization, and has no subsidiaries, parent, or affiliates. The company currently has approximately 75 employees, growing steadily from about 45 employees five years ago. Cal.net is a Competitive Local Exchange Carrier ("CLEC") in the State of California, holding a Certificate of Public Necessity ("CPCN") # U-7309-C.

Cal.net currently serves scattered areas within Merced County with fixed-wireless service at speeds up to 100 / 20 Mbps down/up – see coverage map in the Appendix.

a. Prior Government Grants and Subsidies

Cal.net has successfully competed for and been awarded three different government-subsidized programs:

- California Advanced Services Fund ("CASF"): In 2016, Cal.net was awarded $4.6 million in grant funding by the California Public Utilities Commission ("CPUC") for two separate projects covering portions of three counties in the central Sierra Nevada range. These projects develop broadband infrastructure to serve 9,722 households in 1,039 Census Blocks. One of these projects is completed, and the other is well underway with an anticipated mid-2024 completion.
- Connect America Fund II ("CAF2"): In August 2019, Cal.net was awarded $50.5 million by the Federal Communications Commission ("FCC") to deliver broadband Internet connectivity at 100-Mbps speeds to 20,859 eligible service locations in 3,559 Census Blocks scattered throughout 26 counties in central California, ranging from Redding to Bakersfield and from the western Sierra to the Napa Valley. The first 20% completion milestone was attained in July 2021, five months ahead of the FCC-mandated deadline, as subsequently verified by the Universal Services Administration Company ("USAC"). The second 20% milestone was completed in September 2022, again ahead of schedule. Construction on the third 20% milestone is underway with completion once again expected significantly ahead of the 12/31/23 deadline. Final completion of this project is scheduled for the end of 2025. In Merced County, Cal.net is obligated to serve 1,416 locations in 35 Census Block Groups scattered across the County – see map in the Appendix.
- NTIA Tribal Broadband Connectivity Program: In mid-2021, Cal.net partnered with the Shingle Springs Band of Miwok Indians to compose a $2.7 million grant application to the National Telecommunications and Information Administration (NTIA) to construct a fiber-to-the premises broadband project for all residences and public facilities on the grounds of the Shingle Springs Rancheria. Cal.net contributed the engineering design, cost projections, and construction schedule for this fiber-to-the-premises network. The NTIA awarded this grant in December 2022, and construction is currently underway. Target completion date is December 2023. Cal.net is the prime contractor for both the construction and operation of this network.

b. Similar Arrangements with Other Public Entities

Cal.net is currently engaged in a one-year public-private partnership project with Madera County to deploy four fixed-wireless tower sites to serve five unserved low-income communities in the county with 100/20 Mbps broadband service. The project commenced in April 2023.

Contact: Anthony Loza, Division Director of General Services, (559) 675-7703

Cal.net is currently engaged in a one-year public-private partnership project with the Shingle Springs Band of Miwok Indians to deploy gigabit fiber-to-the-premises to all residents and several tribal facilities within the Shingle Springs Rancheria. The project commenced in January 2023.

Contact: David A. Murray, Direct Assistant to the Chairwoman, (530) 698-1471

Cal.net worked with Kern County earlier this year to submit a CASF Infrastructure Grant Account grant application to deliver 100 / 20 Mbps service to the entire town of Lost Hills. This was a public-private partnership with the County owning the infrastructure and Cal.net constructing it and acting as the service provider upon completion. The application was submitted to the CPUC in May 2023 and is still pending their review.

Contact: Jason Wiebe, Chief Strategic Initiatives Officer, 661-332-8329

Cal.net was retained by the Placerville Police Department to deploy downtown Internet connectivity for surveillance cameras and security. The project was completed in February 2017.

Contact: Jason Tanger, Director of I.T., 530-642-5524

c. Company Experience and Capabilities

As a local California business, Cal.net has intimate knowledge of state and local laws and regulations. In many of the communities we serve, we have long-term personal relationships with both municipal and county officials, along with local business leaders, who have been supportive of our efforts. As a California CLEC (Competitive Local Exchange Carrier), we are very familiar with the State telecommunications regulations, and the requirements of CEQA (the California Environmental Quality Act), having completed many CEQA-approved projects.

Cal.net is extremely conscientious of employing and adhering to safety and training regimens and regulations. In fact, we have an OSHA-certified tower climbing & rescue trainer on our staff. Our in-house training programs comprise:

- Fiber Splicing
- Structured Cabling
- Telecommunications Low Voltage
- Troubleshooting with OSI Mode

Among the various external certification & qualification training programs we utilize are:

- OSHA 30
- OSHA 10
- 1st Aid CPR
- Aerial Lift Training
- Tower Climbing and Rescue
- Advanced Tower Climbing & Rescue
- Competent Rigger Certification
- Forklift Operator

The photos below illustrate two examples of our staff installing broadband infrastructure components.

Our crew at work on a project to deliver redundant fiber to the Red Hawk Casino in Shingle Springs.

One of our crewmembers deploying new fixed wireless service to an area, showing examples of a sector antenna that serves customers and a microwave antenna that connects to the Internet.

For operation of the network, the following factors are pertinent, and are conducted in-house with the engineers in our Network Operations Center ("NOC" – see photo at left):

- Monitoring the network traffic, the equipment, the radio links, and potential environmental issues
- Items to measure include traffic volume, latency, jitter, radio signal strength, radio signal/noise ratio, cabinet temperature, power status, generator fuel level, generator weekly exercise results.

d. Best Practices

Cal.net employs an in-house Network Operations Center ("NOC") to monitor the performance of all aspects of our network. Through this mechanism, we can determine areas of the network that are experiencing suboptimal performance, and proactively address mediation measures before they become serious customer issues. In the event of sudden acute occurrences, such as weather-related events, our NOC staff can immediately react and dispatch service technicians to remediate.

We also have a dedicated engineering team solely focused on upgrades. We continually evaluate components of our network that are approaching their service life and design the implementation of replacement components.

e. Project and Grantor Management and Consulting

Cal.net, Inc. utilizes a blend of agile and waterfall project management methodologies to ensure on-time and on-budget completion of projects. Agile methodology, employed during the early stages, promotes flexibility, adaptability, and collaboration, focusing on iterative development and quick adjustments to accommodate changing requirements. This reduces risks and improves productivity and stakeholder satisfaction during the planning and design stages. In contrast, the waterfall methodology is applied during the construction phase, offering a linear, structured approach with distinct stages from requirements gathering to deployment. This provides predictability essential for precise planning, coordination, and resource management in construction. By integrating these methodologies, Cal.net, Inc. balances flexibility and structure, with agile fostering effective early-stage collaboration and responsiveness, and waterfall ensuring disciplined execution during construction.

As has been described elsewhere herein, we have worked closely with a number of governmental entities to deliver services to their constituents. Our process has been, and will continue to be, one of close cooperation and multiple interactions with all primary stakeholders, including the requirements stage, the design stage, the construction stage, and the service stage. Our best example of this is our work with the Shingle Springs Rancheria, where we had to coordinate every step of the project with the NTIA (National Telecommunications and Information Administration) to be allowed to proceed to the next phase of the project.

With regard to determining the service needs and existing broadband capabilities of the communities in question, both the California Public Utilities Commission and the Federal Communications Commission have data available through their individual broadband data collection efforts to assist in that determination. Additionally, as we have done in the past for our CASF grants, we can do drive testing to evaluate the capabilities of mobile wireless connectivity. Lastly, we can leverage our marketing department to survey residents in these areas, inquiring about their current experience.

f. Methodologies to Successful Broadband Project Implementation

Cal.net, Inc. ensures consistent on-time and on-budget completion of projects, by utilizing a combination of agile and waterfall project management methodologies can. By leveraging the strengths of both approaches, Cal.net, Inc. can effectively manage their projects from inception to completion.

Agile methodology, known for its flexibility and adaptability, is typically employed during the early phases of a project, particularly in the engineering team. It focuses on iterative and incremental development, allowing for quick adjustments and continuous improvement. Agile fosters collaboration, frequent communication, and stakeholder involvement, allowing teams to respond swiftly to changing requirements or priorities. This approach helps in reducing risks, improving team productivity, and enhancing stakeholder satisfaction during the planning and design stages.

On the other hand, the waterfall methodology is often employed during the construction phase of Cal.net, Inc. projects. Waterfall is a linear and sequential approach that follows a fixed plan and predefined phases. This methodology involves clear and distinct stages, such as requirements gathering, design, implementation, testing, and deployment. Each phase has specific deliverables, and progress is measured before proceeding to the next phase. Waterfall provides structure and predictability, which is crucial in construction activities where precise planning, coordination, and resource management are essential for success.

By integrating agile and waterfall methodologies, Cal.net, Inc. can achieve consistent on-time and on-budget completion of their projects. The agile approach allows for early detection of potential issues and promotes collaboration, ensuring accurate project requirements and design. The use of agile methodologies during the initial stages helps in identifying and addressing risks, thereby minimizing delays and cost overruns.

Once the project transitions to the construction phase, the waterfall methodology can be employed to provide a structured framework for execution. By following a predefined plan and sequence of activities, the construction team can effectively manage resources, control costs, and meet project milestones. The linear nature of the waterfall methodology helps in maintaining project discipline, adhering to schedules, and mitigating risks associated with construction activities.

Overall, by combining agile and waterfall project management methodologies, Cal.net, Inc is able to achieve a balance between flexibility and structure, enabling consistent on-time and on-budget completion of our projects. The agile approach facilitates effective collaboration and responsiveness during the early stages, while the waterfall approach ensures disciplined execution during the construction phase.

g. Qualifications of Team

Cal.net has a very experienced team with multiple years tenure at the company. Our project manager, Daniell Apodaca, has successfully led and managed multiple construction and telecom projects, ensuring they were delivered within budget and schedule. She has collaborated with various teams, including engineers, contractors, architects, and vendors, to coordinate project activities and ensure alignment with project goals. Her Project Coordinator, Travis Bernard, handles creating project plans, setting deadlines, allocating resources, and tracking progress. Together, the two of them work closely with outside agencies and stakeholders, such as permitting agencies, including design/build presentations and meetings with all project principals. As but one example, their close communication with the Shingle Springs Rancheria resulted in a successful shepherding of that project through the design and entitlement stages, and they are now overseeing the construction of the network.

i. Project Management

Danielle Apodaca is a Project Manager with four years of experience at Cal.net. In her role, she has successfully led and managed multiple construction and telecom projects, ensuring they were delivered within budget and schedule. She has collaborated with various teams, including engineers, contractors, architects, and vendors, to coordinate project activities and ensure alignment with project goals.

Danielle is responsible for developing and maintaining project schedules, budgets, and resource allocation plans to ensure effective project execution. She has also prepared and presented progress reports, project updates, and financial analysis to senior management and stakeholders.

As a proactive project manager, Danielle identifies potential risks and implements mitigation strategies to minimize project delays and cost overruns. She oversees procurement activities, including bidding processes, contract negotiations, and vendor selection, ensuring competitive pricing and adherence to project specifications.

Danielle maintains effective communication channels with clients, addressing their concerns and ensuring customer satisfaction throughout the project. Additionally, she is responsible for managing project documentation, including contracts, permits, change orders, and compliance with regulatory requirements.

ii. Project Coordinator

Travis Barnard is a Project Coordinator and has been working with Cal.net for 5 years. He first started out as a Tower Climber maintaining and upgrading Cal.net towers. He then moved into project coordinator role for the past two years. Travis' roles involve overseeing and coordinating various aspects of a project to ensure its successful completion. It can be a demanding role that requires strong organizational skills, attention to detail, and effective communication.

During Travis's two years as a project coordinator, he has gained valuable experience in project management, such as creating project plans, setting deadlines, allocating resources, and tracking progress. He has also collaborated with team members, stakeholders, and clients to ensure everyone is on the same page and the project is progressing smoothly. Overall, working as a project coordinator for two years is a significant milestone, and Travis has built a solid foundation for a successful career in project management or other related fields.

iii. Field Operations and Construction Manager

Corey Mitchell, an experienced professional with 5 years of expertise in the WISP/telecom industry, serves as the Field Operations and Construction Manager. In this role, Corey effectively plans, coordinates, organizes, oversees, and directs all activities related to the construction and maintenance of designated structures, facilities, and systems.

Corey's primary responsibility is ensuring strict adherence to safety standards and guidelines on the jobsite, guaranteeing that all construction work meets the necessary safety codes. Through diligent supervision, Corey promotes a safe and secure working environment.

Corey actively collaborates with clients, supervisory staff, contractors, and design professionals throughout the construction process. By fostering open lines of communication, Corey facilitates the discussion and resolution of various challenges, including work procedures, complaints, and construction or design issues. In the face of delays, inclement weather, or emergencies at construction sites, Corey takes decisive leadership actions to mitigate any adverse impact.

Corey Mitchell assumes a crucial role as the Field Operations and Construction Manager, bringing extensive experience and expertise to ensure the successful execution of construction projects while prioritizing safety and maintaining effective collaboration among key stakeholders.

2) Financial Health

Cal.net is in sound financial condition. The company undergoes a full financial audit every year and has always received a sound report with no negative indications. Cal.net has no current or recent dispute or legal action that might impact our ability to perform.

3) Description of Proposal and Partnership Arrangement

a. Proposed Match Funding

Until the accurate costs of the City's conceptual network design are determined in sufficient detail to be presented in the FFA grant application, it would be premature to propose a specific matching level for Cal.net. We understand that matching funds are an important scoring criterion for the CPUC, and that the combined total match among the City, Cal.net, and potentially others should be of sufficient amount to achieve an acceptable score. We will contribute both cash and in-kind contributions toward the matching funds, but until more detailed design is undertaken, we do not have enough information at this point to make a determination on the proper allocation.

b. Proposed Price and Terms for Use of City's Network

Cal.net understands the City of Merced desires some form of payment for using city assets. Although this is a reasonable request, we believe it is premature to suggest pricing in this response. If chosen by the City as a partner in this initiative, we will work with the City to determine a fair exchange for both the City and Cal.net, informed by common practice in the industry elsewhere in California.

c. Technical Specifications of Privately-Owned Last-Mile Network

It is our understanding that the City's entire conceptual network design is to be City-owned, including any laterals needed to reach the projected 876 service locations specified in the RFP. It is not clear whether the service drops to each location are intended to by City-owned. The clarification of this point will, by the way, inform the determination of our level of matching funds, as discussed above.

We do understand that any future network that we build to pass the remaining 11,719 locations the City has identified within a 750-foot buffer zone of the propose City network will be owned by Cal.net. We will not be including this larger project as part of any work to be specified in the current FFA application window. This is a much larger and more complex effort, and will take significantly longer than the time we have remaining in the current FFA cycle to be adequately specified. Accordingly, we consider that to be a "Phase 2" project suitable for the next FFA application window. Nevertheless, we provide the following conceptual overview of our engineering design principles.

i. Fiber Architecture

Cal.Net offers fiber delivered internet using Passive Optical Network (PON) technology comprising one or more Optical Line Termination (OLT) chassis which connects a PON to customer homes using Gigabit

Ethernet PON (GPON[1]) and/or 10 Gigabit Ethernet Symmetrical PON (XGS-PON[2]). The initial deployment would utilize the GPON standard, allowing for 2.5/1.24G Down/Up speeds aggregate per PON port. This could be upgraded in the future to XGS-PON allowing for 10/10G Down/Up speeds aggregate per PON port. The OLT chassis has uplinks to Cal.net geographically redundant datacenters with multiple internet peers, using dedicated fiber transport or licensed microwave wireless transport. The nodes would be deployed in cabinets where the middle-mile backhaul interconnects. From these nodes, Cal.net would construct predominately underground fiber plant. 1:32 splitters collocated with the OLT each serve a cluster of served locations, what we term Fiber Service Areas ("FSAs"). Remote splitters can be placed at a later date to increase the number of homes by up to 32x the initial build.

Both GPON and XGS-PON may coexist on the same fiber using course wave division multiplexing (CWDM). Cal.net uses CWDM muxes, demuxes, filters, and passive splitters and combiners to implement a fiber network designed to serve current customers, with the ability to scale the network and grow to serve future customers as well. This architecture enables the lowest possible latency on round trips to the Internet.

Each GPON optical transmitter in the OLT feeds a 32x1 optical splitter which can serve up to 32 homes (expandable to 128 homes per transmitter), at an aggregate download throughput of 2.4Gbps, and upload throughput of 1.2Gbps. Each XGS-optical transmitter is similar but supports up to 10Gbps symmetrical aggregate throughput. Homes may be moved from one FSA splitter to another to ensure sufficient capacity is available for all subscribers. Distances within the proposed network should require no greater than Class C+ optics, allowing for distances up to 60 km between the OLT and any subscriber.

Depending on the density of structures, handholes may be placed along the fiber route in a variety of configurations from one per structure to four structures per handhole. At the customer premise, Cal.Net provides a standard Optical Network Terminal (ONT) which connects to the PON, as well as a home gateway. The ONT provides telemetry which helps indicate the health of the optical signal, and when combined with topological details can help isolate fiber cuts. The home gateway provides in-home wireless networking, and also provides remote telemetry including periodic speed testing.

Vendors providing solutions for GPON and XGS-PON include (but are not limited to) Adtran[3], Calix[4], Nokia[5], and Sumitomo[6].

In each of the top three priority project locations (discussed below), the Statewide Middle Mile Broadband Initiative (MMBI) fiber project is slated to pass through those communities. Cal.net will interconnect with the MMBI network in at least two places in each community. For additional redundancy, Cal.net would propose a 5-Gbps microwave backhaul, feeding off its current network, for last-resort failover capability.

---

[1] https://www.itu.int/rec/T-REC-G.984.5
[2] https://www.itu.int/rec/T-REC-G.9807.1
[3] https://investors.adtran.com/news-and-events/press-release-details/2021/ADTRANs-Combo-PON-Technology-Supercharges-Multigigabit-Broadband-Adoption-for-Operators-Worldwide/default.aspx
[4] https://www.calix.com/press-release/2021/11--november-/the-latest-xgs-pon-capabilities-from-calix-help-service-provider.html
[5] https://www.nokia.com/about-us/news/releases/2022/05/24/nokia-announces-shipment-of-15-millionth-quillion-powered-pon-port-for-broadband-fiber-nodes/
[6] https://sumitomoelectriclightwave.com/wp-content/uploads/2016/01/FSU7100.pdf

ii. Scalability and Reliability

The networks that will be constructed will be robust and resistant to failure, as well as being scalable to meet future demand. By having multiple interconnected rings, fiber nodes will always have two or more paths to the Internet. For each ring, the distribution network to the core will be dual-homed to the Internet Exchange Centers in San Jose and Sacramento, where we have presence. At all nodes, Cal.Net is on commercial power, 8-hour battery backup, and failover generator power. In the event of a sustained power outage, Cal.Net can power its facilities indefinitely provided fuel is available. Each of Cal.Net's routers, switches, and OLTs has redundant power supplies for failover conditions. Our field crew can respond to and correct most outages, wherever they may be, in less than eight hours.

Scalability is also supported by the network architecture. Due to the multiple interconnected ring aspect, we can redirect increased traffic flow on one segment through other segments that have unused overhead capacity. For fiber networks, the upgrade paths available on a passive optical architecture today include both NG PON2 and XGS PON which could be employed by simply changing out electronics on one or both ends of a connection, supporting up to sixteen 10 Gbps connections on the same strand using DWDM wavelengths, without impact to current subscribers. The proposed distributed split model allows for flexibility when upgrades become necessary. A final option is to add more fiber connection points to the Internet – there are, and will be, many accessible fiber facilities throughout large portions of our service area.

General reliability is assured by the funding rules requiring speed test reporting[7]. Another reliability feature is our Network Operations Center ("NOC"), which keeps tabs on all aspects of our networks, automatically identifies and alerts staff to operational issues, and provides insight on performance trend lines. This facility helps us identify and respond to issues very quickly.

iii. Proposed Retail Pricing

In addition to the table below, Cal.net also offers interconnected VoIP service providing unlimited nationwide residential calling for under $30 a month.

Package Name	Speeds	List Price	CALEA	Silver Protect (Optional)	WiFi Router	Total Monthly	ACP Discount	Total with ACP
Merced Fiber 10	10 / 10 Mbps	$30.00	$2.97	$2.07	$4.95	$39.99	$30.00	$9.99
Merced Fiber 25	25 / 25 Mbps	$50.12	$2.97	$6.95	$4.95	$64.99	$30.00	$34.99
Merced Fiber 50	50 / 50 Mbps	$80.12	$2.97	$6.95	$4.95	$94.99	$30.00	$64.99
Merced Fiber 100	100 / 100 Mbps	$95.12	$2.97	$6.95	$4.95	$109.99	$30.00	$79.99
Merced Fiber 1G	1000 / 500 Mbps	$139.12	$2.97	$6.95	$4.95	$153.99	$30.00	$123.99

[7] Rulemaking 20-09-001, Decision 22-04-055 April 21, 2022, page A25

d. Estimated Total Construction Cost of City's Conceptual Network Design

While it is impractical to develop a detailed cost model in the compressed timeframe for this RFP response, a generalized approach can be reasonably undertaken. Inspection of the proposed 876 locations for this Phase 1 project reveals that only about 10% of those locations are directly on the proposed main network, whereas the remainder will require short laterals to reach. We also model a 70% subscriber take rate on our network drops for deriving our total cost for that component. Lastly we assume boring for all parts of the network. If micro-trenching was acceptable everywhere, the cost would be about 40% lower. Accordingly, informed by other community-wide fiber projects of which Cal.net has undertaken, we base our cost model on the following:

- Network build, cost per passing $4,840
  - Total cost for 788 passings (90% of the 876 locations) $ 3,813,920
- Cost per subscriber network drop $3,080
  - Total cost (70% of 876 locations) $ 1,888,040
- Mainline cost per foot, excluding drops $162
  - Total cost (52,750 feet) $ 8,545,500
- Total Overall Cost $14,247,460

e. Anticipated Construction Phasing

Cal.net expects that the entire project will be CEQA-exempt, as it will lie entirely within existing rights of way. Accordingly we anticipate easily accommodating a deployment schedule of around 18 months. In our experience with other community fiber builds, the following is a reasonable schedule projection:

Activity	**Q0 – Q1**	**Q2**	**Q3**	**Q4**	**Q5**
➢ Feasibility study	X				
➢ Preliminary OSP engineering	X				
➢ Verify existing infrastructure	X	X			
➢ Permitting, other entitlement approvals		X			
➢ OSP construction, mainline		X	X	X	
➢ OSP construction, lateral			X	X	
➢ OSP construction, drops				X	X
➢ OSP construction, splicing		X	X	X	X
➢ Tie-in to the statewide MMBI network					X
➢ OLT/head-end turn-up					X
➢ Begin customer provisioning					X

Month 0 - 3: Objective – Launch the project

Outcomes:

1) Cal.net in conjunction stakeholders will assess feasibility with a thorough review of engineering documents and detail existing infrastructure
2) Permits approved

3) Mainline construction begins

Month 4 - 6: Objective – Broadband Infrastructure Deployment project continues
Outcomes:

1) On-going construction, mainline, lateral, and splicing will continue within the community

Month 7 - 9: Objective – Broadband Infrastructure Deployment project continues
Outcomes:

1. On-going construction, mainline, lateral, splicing, and drops

Month 10 - 12: Objective – Final construction phase of Broadband Infrastructure Deployment project
Outcomes:

1. Final construction drops and splicing
2. OLT/head-end turnup
3. Customer provisioning

f. Experience in Construction of Similar Networks

As mentioned elsewhere in this document, Cal.net is currently constructing a fiber-to-the-premises network for the Shingle Springs Rancheria. The project will be completed by the end of 2023. Cal.net has also recently commenced a greenfield fiber-to-the-home project for a 240-home new housing development in Jamestown, California. This is a phased housing development, the first portion of which will be completed this year, and the remainder in 2024.

g. Considerations for Permitting Fees or Expediting Permitting Processes

The costs noted above include the anticipated permitting fees. We expect to work in partnership with the City to find ways to accelerate the permitting process.

h. Commitments Needed from City to Ensure Success

Cal.net expects to partner with the City in the truest sense of the word. Beyond the assistance in expediting permitting noted above, the following activities in which the City could participate would be highly beneficial:

- Joint press releases announcing the commencement of development (after CPCU grant approval)
- Direct notification of all property owner along the network route, and separately of all 876 initial locations to be serviced
- Joint meetings with City (and maybe also County) Economic Development agencies to determine community needs and opportunities within the area of the proposed network
- Assistance with setting up digital literacy training and adoption programs, and assistance with connecting to community groups, non-profit and community based organizations
- Ensure that electrical utility power can be made available where needed for electronic field components

- Work together to identify parts of the network where micro-trenching can be an acceptable alternative to subsurface boring, in order to substantially reduce the total cost

i. Potential Conflicts of Interest Disclosure

Cal.net has no conflicts of interest which would affect this project in any manner.

j. Additional Details, Preferred Arrangements, or Creative Business Models

i. Affordable Connectivity Program

Cal.net is a participant in the federal Affordable Connectivity Program ("ACP"), which subsidizes broadband service for qualified low-income residents. Through this program, Cal.net can offer broadband service to low-income residents for as little as $9.95/month, and in combination with its Microsoft partnership (see below), can offer its ACP subscribers a fully-functional computer, laptop, or tablet for as little as a one-time cost of $10. ISP participation in the federal ACP program requires state CLEC status, and Cal.net has the required certification.

Cal.net is in the process of completing its application to the CPUC for authorization to offer state and federal Lifeline services in California. Once approved, we will be able to offer low-income residents discounted voice services and further discounted broadband services.

With regard to stakeholder reporting, we will forward all required CPUC reports to designated City of Merced officials. Should custom reports be requested, we will work with the stakeholders to determine their needs. Cal.net will also conform to the SLFRF Compliance and Reporting Guidance.

Cal.net will conform to all CPUC FFA pricing requirements, including maintenance of initial price over an extended period, no installation fees, and low-cost plans.

ii. Microsoft Airband Partnership

Cal.net is the only Internet Service Provider in California that is a Microsoft Airband Initiative partner[8]. Through this program, Microsoft has developed a strategic approach that brings together private and public sector organizations to help address the broadband gap and aims to extend broadband access to millions of people living in rural America. Through our exclusive Airband partnership, Cal.net offers a variety of services for the benefit of rural and other underserved communities including upskilling and entrepreneurial training, digital literacy programming, telehealth, distance learning and precision agriculture. Cal.net is authorized to provide these Airband resources at no cost, which are available to all organizational Cal.net customers, including businesses, non-profits, schools, community groups, government entities, and tribal entities (customers of other ISPs must pay full retail for of these services).

To ensure that newly served areas that receive critical broadband access are also provided ready access to skills training programs to learn how to use technology effectively, Microsoft offers a White Glove

[8] https://www.microsoft.com/en-us/corporate-responsibility/airband-initiative

Service Program[9] to government, business and school customers. The White Glove Service Program provides access to free workforce development training led by staff from the Microsoft Store on using any Microsoft product, including devices and software programs such as Microsoft Word, Excel, PowerPoint, Teams, Power BI and several others. The Microsoft Store Team also provides service and support for all Microsoft devices. Again, all of this is available at no cost only to Cal.net customers.

Inclusive in this platform is a full spectrum of digital skills training programs for all age groups and learning levels. The online training programs include a basic digital literacy course which is used by individuals, nonprofits, schools, and governments all over the world, as well as courses on online safety, coding with Minecraft, learning computer science, mastering Microsoft Office programs, and learning skills for employability via LinkedIn skills for in-demand jobs, where one can also learn how to search and apply for jobs and prepare for interviews.

To address the needs of the low-income community, Cal.net offers Personal Computer devices to qualified families at extreme discounts. Refurbished PCs are available to Cal.net customers for $120 and laptops for $150 through Microsoft's partner "PCs for People". Combined with the Affordable Connectivity Program ("ACP"), which offers $100 discounts on hardware, this means a low-income family can obtain their own highly capable computer for as little as $20. Then, to get online, we can combine our $40 per month entry-level broadband service with the ACP $30 monthly low-income subsidy to offer Internet services as low as $10 per month.

iii. Creative Business Models

Cal.net has engaged with Madera County in a unique partnership arrangement as a supplement to our previously noted network construction and operation agreement with them. In this extended partnership, we join forces to assist low-income families to afford broadband service more easily. We would like to suggest a similar low-income subsidy arrangement with the City of Merced.

In this concept, eligible households for the additional joint City/Cal.net subsidy would be only those who can qualify for the federal ACP subsidy. Subject to the availability of City funds, the City would pay for (1) the interior router which provides Wi-Fi, and (2) for internet access monthly fees. The monthly City subsidy would either be $10 or $20, depending on the subscriber's speed package. Cal.net will provide a subsidy match for as long as the City has funds available to continue doing so.

k. Limitations or Oppositions in Ability to Meet Requirements

The primary concern is supply-chain availability. With likely hundreds of millions of dollars of FFA fiber projects being approved simultaneously early next year, the ability to source fiber, conduit, and electronic components may become a concern. Suitable proactive contingent vendor orders can help mitigate that issue, but there is no guarantee that some suppliers may still face difficulty meeting demand.

[9] See the following for details on the White Glove program:
https://www.cal.net/wp-content/uploads/2021/10/Microsoft-White-Glove-Service-Business-Catalog.pdf
https://www.cal.net/wp-content/uploads/2021/10/Microsoft-White-Glove-Service-Education-Catalog.pdf

4) Third-Party / Subcontractors

Congruex
Rigo Santos, Director of Operations Northern California
Ph: 909-815-3892

> Congruex scope of work is to pull all fiber in existing back bone conduit along with trenching lateral intercept points to connect to the backbone infrastructure. Congruex will also place all handholes to our standard depth and required backfill regulations by the city. Congruex will also fix all asphalt and backfill by county specs.

Impact Solution Industries
Zack Baldwin, Owner
Ph: 530-557-0071

> Impact Solutions trenches all service location from hand hole to customer's house and place a 1" conduit in the trench and use sand or remaining dirt to backfill and level. Impact solutions will also replace any concrete / asphalt by county specs.

North Sky Communications - Golden State Utility
Rodney Kuenzi - President
Ph: 360-254-6920, 503-209-6603

> Golden State Utility provides every aspect of the project from initial engineering to final splices and testing at end user locations.

5) References

See Section 1.b. (page 5) for more details.

Madera County
Contact: Anthony Loza, Division Director of General Services, (559) 675-7703

Shingle Springs Band of Miwok Indians
Contact: David A. Murray, Direct Assistant to the Chairwoman, (530) 698-1471

Kern County
Contact: Jason Wiebe, Chief Strategic Initiatives Officer, 661-332-8329

Valley Vision
Contacts; Krag Brotby, Partner, Ph: 209-822-1011
Ron Kopf, Project Manager, Ph: 209-743-6193

Placerville Police Department
Contact: Jason Tanger, Director of I.T., 530-642-5524

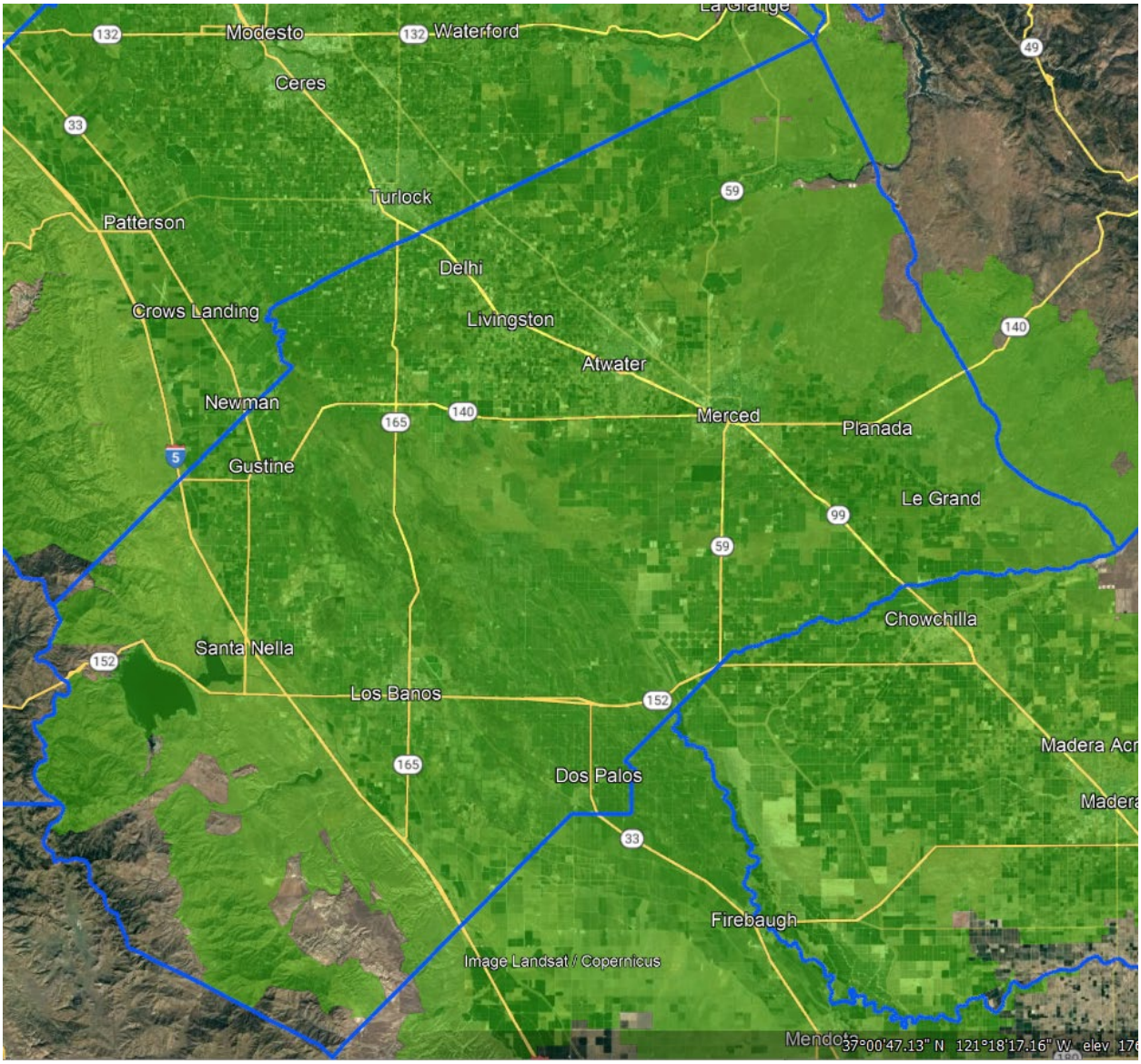
6) Response Matrix

A. Cover Letter (Items 1-5)	Provided elsewhere in this document
A.1 company introduction	Provided elsewhere in this document
A.2 Why the respondent is interested	Provided elsewhere in this document
A.3 partner with the City on grant applications	Provided elsewhere in this document
A.4 willing and capable to build last- mile connectivity	Provided elsewhere in this document
B. Table of Contents	Provided elsewhere in this document
C. Background (Items 1-7)	Provided elsewhere in this document
C.1 Company's knowledge, years of experience	Provided elsewhere in this document
C.2 Provide details\resumes on key expertise\key personnel	Provided elsewhere in this document
C.3 List any licenses, registrations, or certifications	Provided elsewhere in this document
C.4 overview of company's assets	Provided elsewhere in this document
C.5 similar arrangements	Provided elsewhere in this document
C.6 List any litigation or disputes	Provided elsewhere in this document
C.7 Any installation, sub-contractors, partners	Provided elsewhere in this document
D. Financial Health	Provided elsewhere in this document
E. Description of Proposal and Partnership Arrangement	Provided elsewhere in this document
E . 1 proposed match funding	Provided elsewhere in this document
E.2 Price & Terms	Provided elsewhere in this document
E.3 Technical specifications	Provided elsewhere in this document
E.4 Estimated total construction cost	Provided elsewhere in this document
E.5 Description of anticipated construction phasing	Provided elsewhere in this document

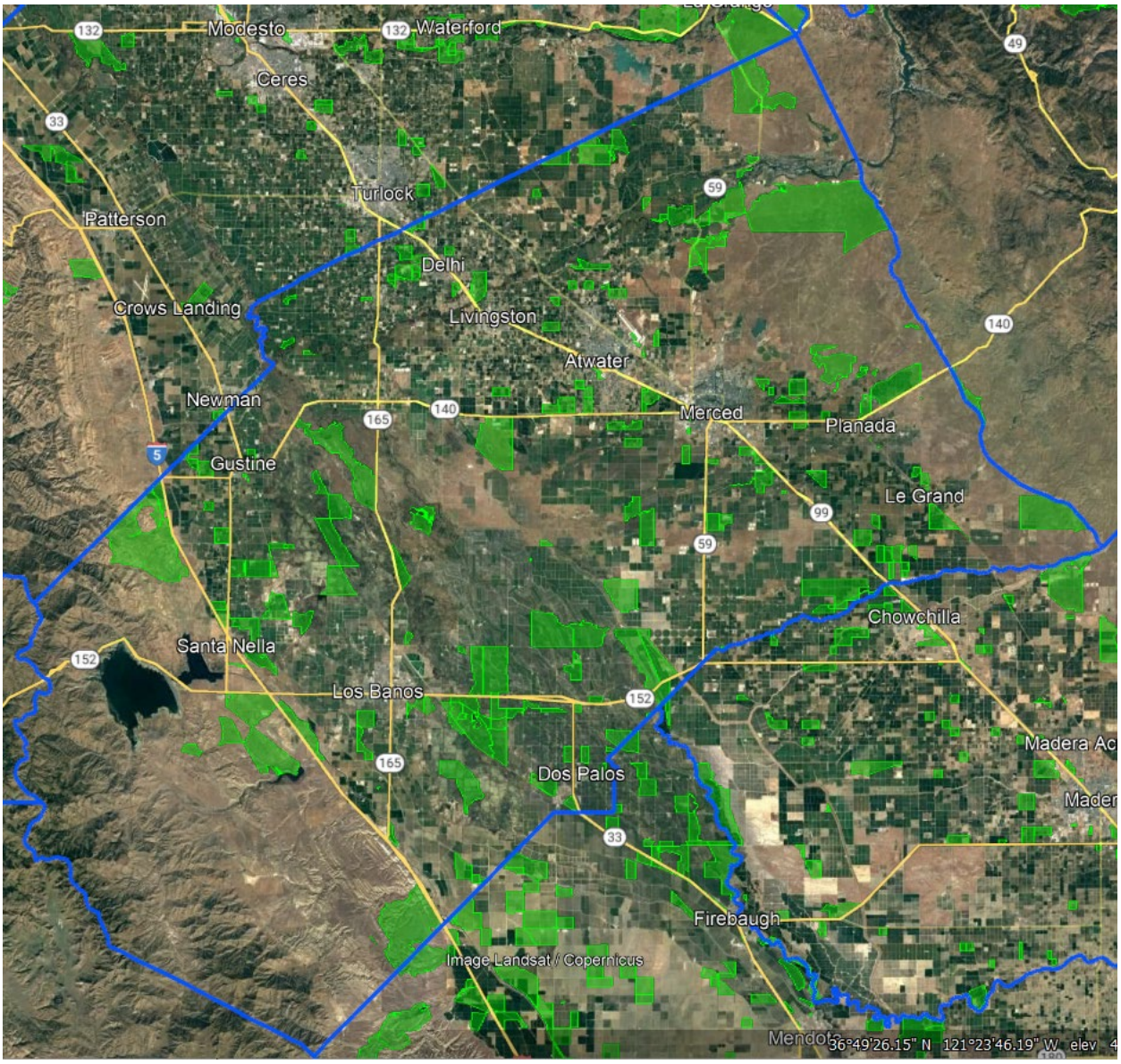
	E.6 Expertise/experience in construction of similar networks	Provided elsewhere in this document
	E.7 permitting	Provided elsewhere in this document
	E.8 requirements or commitments	Provided elsewhere in this document
	E.9 conflicts of interest disclosure	Provided elsewhere in this document
	E.10 business models	Provided elsewhere in this document
	E.11 limitations or oppositions	Provided elsewhere in this document
	F. Third-Party / Subcontractors (Items1-3)	Provided elsewhere in this document
	F.1 Respondent's experience with each of the proposed subcontractors	Provided elsewhere in this document
	F.2 Three (3) customer references for each subcontractor	Provided elsewhere in this document
	F.3 Describe the specific role of each	Provided elsewhere in this document
	G. References (Items 1-2)	Provided elsewhere in this document
	G.1 three (3) references of existing partners, municipalities	Provided elsewhere in this document
	G.2 (3) industry references	Provided elsewhere in this document
	H. Response Matrix – Proposal specifics	Provided elsewhere in this document
	Estimated total cost for publicly owned fiber optic network expansion project (Phase 1)	Provided elsewhere in this document
	Proposed match funding for public project	Provided elsewhere in this document
	Proposed in-kind contribution including any alternative designs utilizing private assets	Provided elsewhere in this document
	Estimated dollar value of in-kind contribution	Provided elsewhere in this document
	Proposed privately- funded last-mile distribution build to unserved and/or	Provided elsewhere in this document

disadvantaged areas	
Estimated cost of privately-funded last-mile distribution build to unserved and/or disadvantaged areas	Provided elsewhere in this document
Proposed service offerings for retail internet & data services	Provided elsewhere in this document
Proposed Price & Terms in Exchange for Rights to Sell Services over City Network	Provided elsewhere in this document
Requirements from the City	Provided elsewhere in this document
Other Benefits to the City	Provided elsewhere in this document

Appendix



Current Cal.net Fixed-Wireless Coverage – Green Area



Cal.net CAF-II Coverage Obligations – Green Areas