











Broadband OIR (R.20-09-001) Pilot Proposals – Joint Utilities Workshop

June 30, 2021

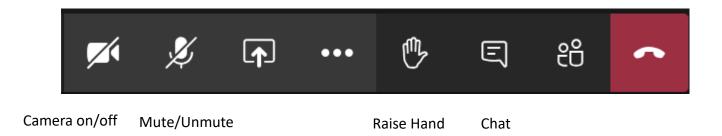
2021

Joint Utilities

Broadband OIR – Pilot Proposals Workshop

Thank you for joining us! The webinar will begin at 9:30 AM

- Please mute your microphone when not speaking to help mitigate possible feedback and distractions.
- There will be opportunity for Q&A/discussion at the end of the presentations.
- Please submit questions in the Q&A box and specify which utility your question is directed to



Agenda

9:30 9:35	Welcome, Safety and Workshop Purpose Speaker: Joni Key, SCE Introductory Remarks Speaker: Commissioner Guzman Aceves
9:40	 Presentation of Pilot Proposals SCE – Kurt Sweetser, Brian Ryan PG&E – Nick Petrakis SDG&E – Willie Thomas PacifiCorp – Joe Leineweber Liberty – Markus Mueller Bear Valley – Tom Chou
11:10	Stakeholder Questions and Feedback
11:25	Closing Remarks Speaker: Commissioner Guzman Aceves

The utilities' Broadband proposals have not been finalized or approved. The proposals presented in the workshop are being shared for further brainstorming and preliminary stakeholder feedback and are subject to change.

Welcome & Safety

- On Aug. 14, 2020, Gov. Newsom issued an Executive Order directing state agencies to bridge the digital divide and ordered CPUC to seek opportunities to use programs under its jurisdiction to accelerate broadband deployment and to leverage utility infrastructure to increase access to existing fiber and cost-effectively deploy new fiber.
- On April 20, the CPUC issued an Amended Scoping Memo as a result of comments filed by multiple parties articulating concerns with the Dec. 2020 Staff Proposal establishing an IOU Fiber Pilot Program.
- Phase I: Continues to focus on what requirements should be imposed on electric IOUs and telecommunication providers during postdisaster service restoration efforts:
 - June 2021 Phase I Proposed Decision is expected
- Phase II-A: Continues to focus on what role the IOUs can play in deploying broadband access to communities lacking access to download speeds of 100 Mbps:
 - June 30 Discuss Utilities Broadband Pilot Proposals that provide dark or managed fiber services to a local government, tribal government or an Internet service provider that in turn will offer Internet service to households and businesses within that unserved community.
 - July 15 Utilities are required to submit Pilot Proposals
 - August 16 Comments on Pilot Proposals due
 - August 26 Reply Comments on Pilot Proposals due

Introductory Remarks By Commissioner Guzman Aceves

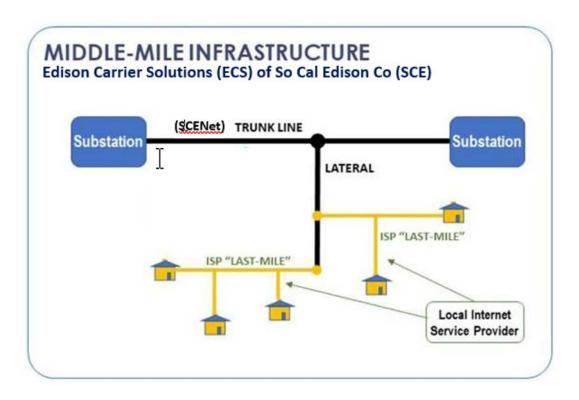
Southern California Edison Broadband Pilot Proposal

Kurt Sweetser – General Manager, Edison Carrier Solutions Brian Ryan – Principal Manager, Edison Carrier Solutions



Energy for What's Ahead[™]

Through its Commercial Telecommunications Carrier (Edison Carrier Solutions), SCE can provide Middle Mile Service to an ISP, local government, or tribal government that can offer broadband services to an underserved community



- ECS has a proven business model to provide Middle Mile service to underserved communities where other carriers have not traditionally served due to cost.
- On the Trunk and Lateral lines, ECS is uniquely positioned to provide Middle Mile service to communication companies by:
 - ✓ Building new or incremental dark fiber capacity.
 - ✓ Leasing excess dark fiber capacity.
 - Providing Lit Services (wavelength, ethernet, dedicated/shared internet).
- ECS' successful participation in underserved community projects is dependent on winning competitive bids from Last Mile providers.

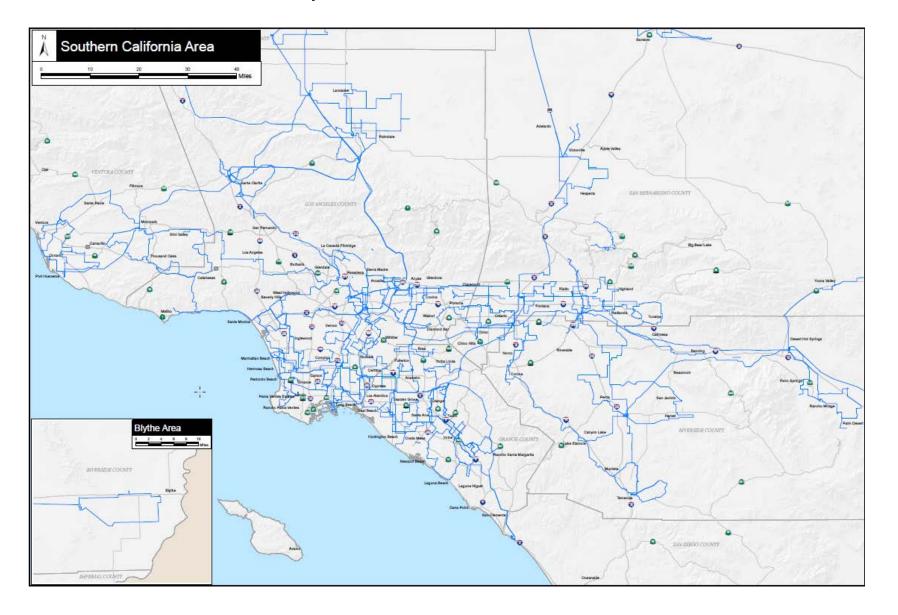
Outreach Connections



ECS is currently:

- Participating in several competitive solicitations to provide Middle Mile service to local governments so that broadband can be provided to underserved areas.
- Conducting outreach to tribal governments to explore possible transactions that could result in the provision of broadband service to these tribes.
- Working to expand business development with several Wireless Internet Service Providers (WISP) customers to determine if ECS can provide further services in underserved areas.

SCE's Network Map





Phase II Pilot Proposal - Ventura

Target Customer	County of Ventura				
Pilot Area	Southern Ventura County				
# Unserved Households Potentially Served	Approximately 5,256				
Pilot Overview and Objectives	e County requested a proposal for a dark fiber backbone throughout southern Ventura County to erconnect municipal facilities and provide broadband to residents. SCE provided a proposal luding pricing, fiber routes, and locations of interest to the county on April 30, 2021.				
Pilot Funding and Regulatory Mechanism	Capital and incremental operating expenses will be paid by SCE shareholders.				
Risks and Barriers	 SCE may not be the successful bidder: Ventura is searching for funding from multiple sources and may not be successful. 				



Phase II Pilot Proposal - Blythe Area

Target Customer	A wireless internet service provider planning to provide high speed internet service in the pilot area.				
Pilot Area	The Lower Colorado River Valley including multiple underserved areas and some tribal lands.				
# Unserved Households Potentially Served	Approximately 723				
Pilot Overview and Objectives	SCE provided a proposal to lease dark fiber from Blythe to downtown Los Angeles to interconnect with the internet.				
Pilot Funding and Regulatory Mechanism	Capital and incremental operating expenses will be paid by SCE shareholders.				
Risks and Barriers	SCE may not be the successful bidder.				



Thank You!

- Kurt Sweetser <u>Kurt.Sweetser@sce.com</u>
- Brian Ryan <u>Brian.Ryan@sce.com</u>



Broadband OIR Fiber Cable Opportunity Pacific Gas & Electric June 30, 2021

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Key Takeaways

Mad River Fiber Route

Fiber Opportunity

Internet Service Provider (ISP) Contact Update



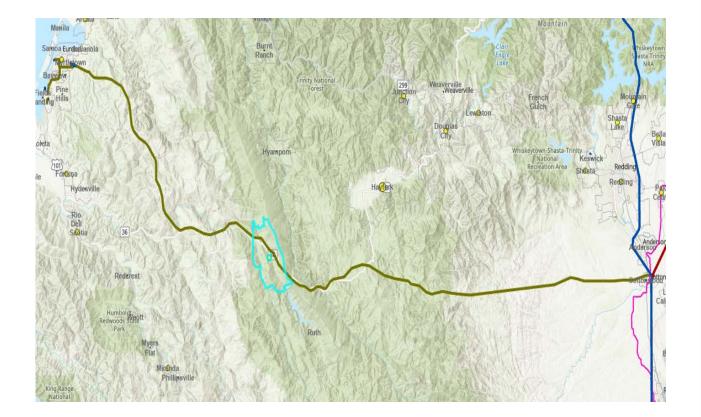
- PG&E Fiber Cable systems is made up of a large portion of 3rd party leased strands and some owned cable routes.
- Leased fiber strands are restricted and are only used for PG&E operations.
- PG&E is not a CLEC and cannot provide ISP services to homes or businesses.
- Broadband underserved communities exist along unrestricted fiber route. Such route was identified along State Highway 36 between Cottonwood and Eureka CA.
- ISP contacted see no value in PG&E Fiber for underserved areas
- No Tribal Communities intersect the State Hwy 36 fiber route and therefore none contacted.



Mad River Fiber Route

Fiber Route Description:

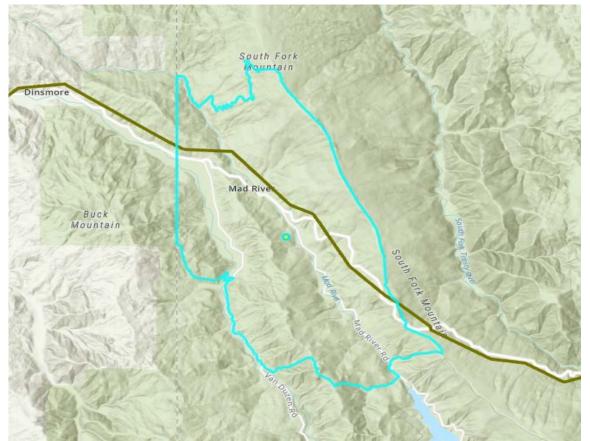
- 116 miles generally along State Highway 36, from Cottonwood to Eureka California.
- PG&E has exclusive use of 24 fiber strands along this route that is providing as an opportunity for Broadband expansion.
- This fiber cable is constructed on Transmission Power Line structures.
- Any access to the fiber strands along the route will be at known splice points.
- There is no access directly available to households.
- This route exists in two segments:
 - 115 kV line from Eureka to Bridgeville
 - 115 kV line from Bridgeville to Cottonwood





Fiber Use Opportunities

- PG&E is not a CLEC and therefore lacks the regulatory authorizations to provide broadband services to households.
- State Highway 36 has low served communities as identified by the 2020 Census Unserved Households layer on the CPUC website, one of which is **Mad River** community (unincorporated Trinity County), with a household count of 108 identified as being unserved.
- The PG&E-owned fiber strands could be made available through an appropriate license agreement to any ISP or local governmental entity that may be interested in connecting any two points along the route for backhaul purposes or connections between their central offices along route.
- The technologies used by the ISP or local governmental entity for expansion of broadband services will likely depend on terrain, distance, infrastructure available and cost. These technologies will likely be a combination of wireline and wireless offerings.
- No populated tribal communities exist along this route.



ISPs contacted:

- 1. 101Netlink P.O. Box 101, Whitethorn, CA 95589
- 2. Tsunami Wireless P.O. Box 6146, Eureka, CA 95502

101 Netlink Discussion 6/25/2021

- 101Netlink serves the identified corridor along State Highway 36.
- The identified PG&E fiber route from Cottonwood to Eureka is the same route that 101Netlink has fiber on as well.
- It appears that 101Netlink is not in need on any additional fiber strands along this route but will contact us if that need changes.
- 101Netlink has the ability to serve this community through wireless technology.

Tsunami Wireless

- Tsunami Wireless serves the same area as 101Netlink and is a reseller of 101Netlink services.
- No Response was received by PG&E from Tsunami Wireless.

No Tribal Communities were contacted since none were identified in the vicinity of the State Highway 36 route.

Phase II Pilot Proposal Agenda



- 1. Preliminary Outreach
- 2. Potential Partners
- 3. Ideal Pilot Scenario
- 4. Pilot Area & Overview
- 5. SDG&E Current Limitations
- 6. Pilot Funding
- 7. Risks and Mitigations

June 30, 2021

PRELIMINARY OUTREACH: Third-Party Communication Companies

Cox Communications

- Ongoing discussions
- Possible opportunities

LTD Broadband

- Ongoing discussions
- Possible opportunities

Crown Castle

- Ongoing discussions
- Possible opportunities

Netly Fiber

• No opportunities identified at this time

National Telecommunications Carrier

• Unable to determine potential opportunities at this time



POTENTIAL PARTNERS: Local Government Agencies



SANDAG Digital Divide Taskforce member

- Group of diverse organizations, including government organizations, educational institutions, Internet Service Providers, etc.
- Currently in the gap analysis stage to develop a Digital Equity Strategy and Action Plan
- Broadband Dig Once Coordination
 - Currently in developmental stages to determine partnership opportunities with the following government agencies
 - Agencies include CalTrans, SANDAG and County of San Diego (SR 67)

POTENTIAL OPPORTUNITIES

• Multi-agency partnership to facilitate undergrounding options, permitting, etc.

CHALLENGES

- Joint trench costs and route
- Funding availability
- Identifying broadband partners
- Timing/priorities of multi-agency projects, SDG&E hardening projects and broadband deployment

A Sempra Energy utility

POTENTIAL PARTNERS: Third-Party Communication Companies

CROWN CASTLE

- Middle mile provider
- Potential partnership with LTD Broadband for last mile

LTD BROADBAND

- Last mile provider
- Potential partnership with Crown Castle for middle mile
- Rural Digital Opportunity Fund
 (RDOF) Winner

POTENTIAL OPPORTUNITIES

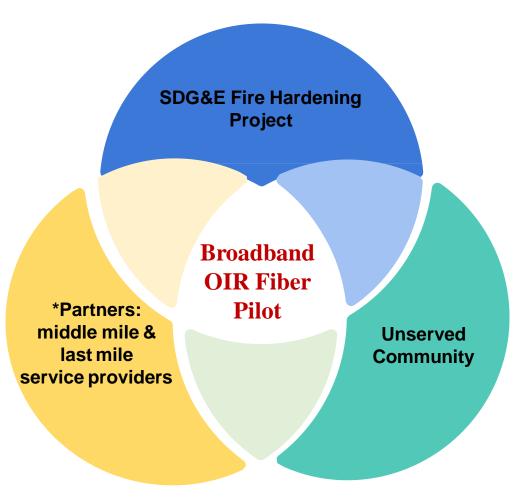
- Target unserved areas
- Potential SDG&E fire hardening circuit with overhead and underground
- RDOF may be key for success

CHALLENGES

- Funding/Subsidies availability
- Participation from tribal communities
- Land rights acquisitions by communication company, in addition to SDG&E land rights

IDEAL PILOT SCENARIO





*Key factor for success: Rural Digital Opportunity Fund(RDOF)

PILOT OVERVIEW & OBJECTIVES



- Pilot Area: Tribal Land
- Location: Northeastern part of service territory
- Housing Units (HU):

Total HU = 454 Total Unserved HU = 354*

- Total HU to receive internet service unknown, to be determined by last mile provider.
- SDG&E has made initial outreach to tribal leadership, upcoming meeting in the next two weeks to discuss further.
- Total estimated SDG&E overheard route = ~12 to 15 miles
- Middle mile provider may extend trunk fiber ~15+ miles, starting in SCE territory.
- Last mile provider may install fixed wireless technology to reach unserved HU.

*Number represents the total unserved HU in pilot area, but the actual number of HU to receive service may be a much smaller subset.

SDG&E CURRENT LIMITATIONS



- SDG&E does not currently have processes or capabilities to give third-party access to our existing dark fiber.
- Dark fiber is designed for internal use only and SDG&E has limited amounts.
- SDG&E cannot guarantee space or structural capacity for new fiber attachments for hardened overheadinfrastructure. Cost recovery may be required to accommodate any new fiber.
- SDG&E hardening efforts are prioritizing work based on risk spend efficiency (RSE) model. Efforts are focused on
 projects that reduce fire risk and Public Safety Power Shutoff (PSPS) events and may not align with third-partyneeds to
 support route to unserved areas. Projects not meeting RSE threshold may require cost recovery.
- SDG&E does not manage or oversee third-party project schedule or coordination with stakeholders.
- SDG&E is not responsible for ensuring that the third-party provider meets the required download speeds.
- SDG&E land rights cannot transfer, third-party communication provider needs to obtain their own land rights.
- SDG&E must assure that the addition of broadband facilities does not reduce the safety and reliability of electric infrastructure.
- Tribal communities may not want to participate.
 - May not grant third-party communication land rights or allow SDG&E pole replacements due to easement rights
 - SDG&E shall not be expected to answer any questions related to internet services. All questions will be addressed to ISP.

PILOT FUNDING



Potential SDG&E costs that may require cost recovery:

- Engineering assessment for pole loading, sag and clearance calculations to accommodate communication attachments
- Replacement of existing poles to accommodate new fiber attachments

Balancing Account

• SDG&E will request to establish a balancing account for cost recovery, funding for all parties, and protection of ratepayers from cross subsidizing telecommunications companies

Third-Party communication companies may require:

• Grant funds to be available to help reach rural areas

RISKS

MITIGATION

Partners

- Limited partner opportunities
- Economic feasibility

Land Rights

- SDG&E cannot transfer land rights. Thirdparty communication companies will have to acquire their own easements.
- SDG&E pole replacement easements on tribal lands/private property.

Infrastructure

- SDG&E infrastructure may already be hardened in unserved communities
- SDG&E infrastructure may not fall under RSE model/fire hardening program.
- Underground joint trench costs maybe higher than overhead.
- May require lengthy permitting

Limitations for Third-Party Comms Providers

- May be cost prohibitive to build out middle mile to reach rural area.
- Final mile may not be economically feasible.
- Availability of funding



- Identified two potential partners
- RDOF availability
- Third-party communication company to address.



- SDG&E will need cost recovery for engineering assessment of existing poles or replacement, as needed
- CPUC along with Digital Divide Taskforce to assist in streamlining permittingprocess.
- SDG&E to replace poles under fire hardening program where possible
- Provide possible underground joint trench opportunities
- Third-party communication providers to figure out funding availability.
- Digital Divide Taskforce





Thank You!



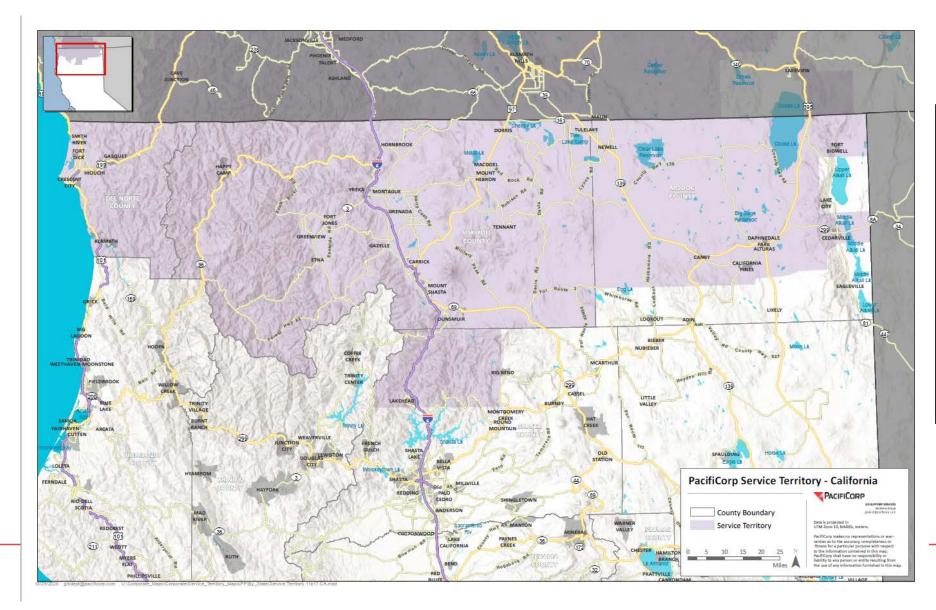
PacifiCorp

Joe Leineweber Manager, Telecommunications Engineering





PacifiCorp's California Service Territory



General Stats

PacifiCorp provides electricity to approximately **45,000 customers** via **63 substations, 2,520 miles** of distribution lines, and about **800 miles** of transmission lines across nearly **11,000 square miles**

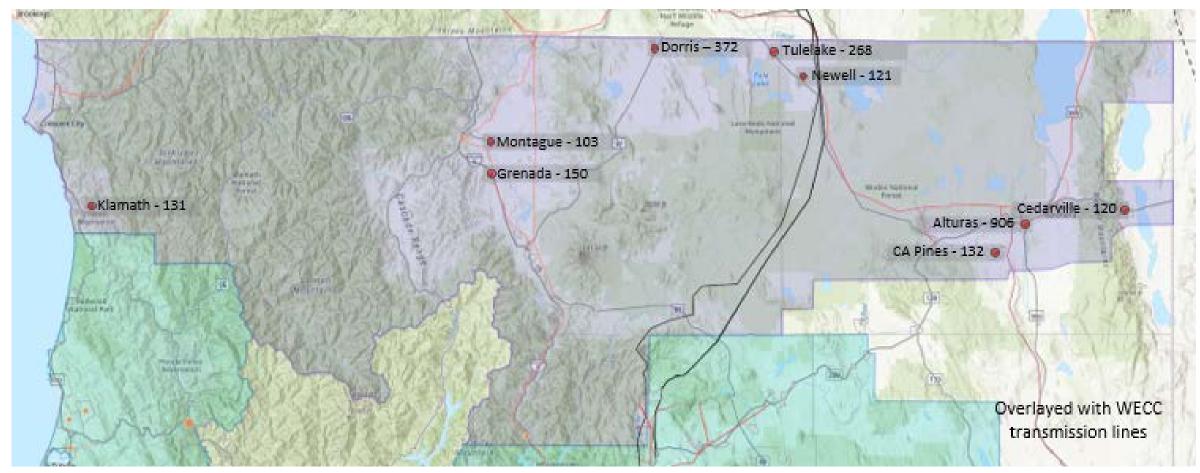
Customers are spread out across service territory, approximately

3.9 customers per square mile

and **42 percent** of customers income qualify for CARE program

POWERING YOUR GREATNESS

Unserved Households



Source for Unserved Household Data: Underlying Data for Table 1 of Administrative Law Judge Ruling



No existing fiber / capacity to any identified CDP listed below:

County	CDP	No. of Community Anchor Institutions	Unserved HH (%)	Unserved HH	Served HH (%)	Served HH	Total HH
Modoc	Alturas	4	98%	906	2%	21	927
Siskiyou	Dorris	3	99%	372	1%	5	378
Siskiyou	Tulelake	3	100%	268	0%	-	268
Siskiyou	Grenada	1	100%	150	0%	-	150
Modoc	California Pines ⁺	0	95%	132	5%	7	139
Del Norte	Klamath	0	100%	131	0%	-	131
Modoc	Newell	0	100%	121	0%	-	121
Modoc	Cedarville*	3	62%	120	38%	74	194
Siskiyou	Montague	0	27%	103	73%	282	385

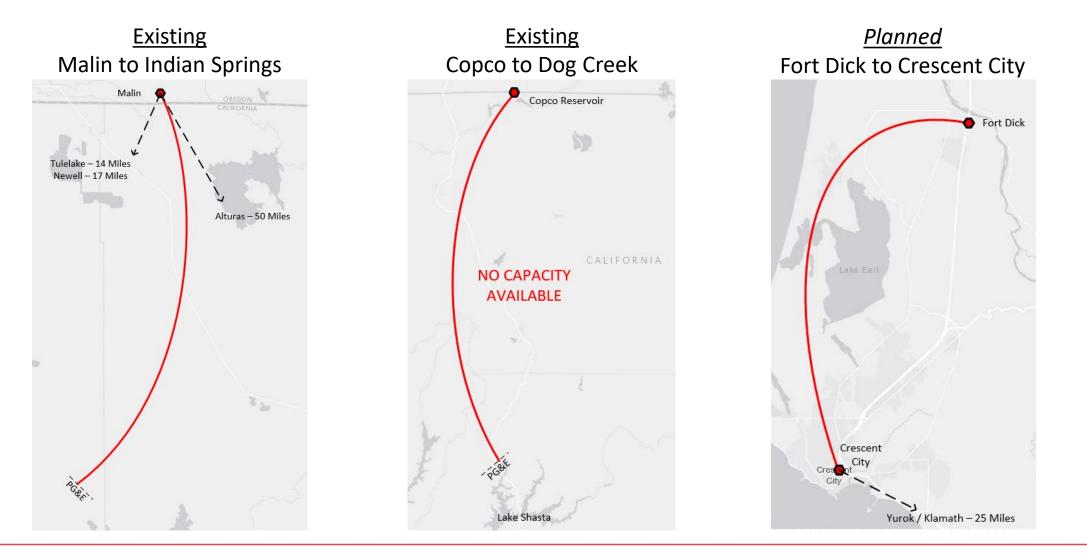
+ Not serviced by Pacific Power / no transmission access

* No transmission lines serving CDP

Data Filtered: >89% Served Households <100 Unserved Households

Source for Unserved Household Data: <u>Underlying Data for Table 1</u> of Administrative Law Judge Ruling

PacifiCorp's Limited California Fiber Assets



POWERING YOUR GREATNESS

Outreach Made to Date

- Initial outreach to eleven telecommunications service providers in May 2021
 - Received acknowledgement from six telecommunications service providers
 - Responses range from interested, premature, no interest
 - One service provider has already completed a fiber buildout of their service area and is already positioned to provide 100 Mbps service access to a community identified as unserved
- PacifiCorp is continuing to have conversations with service providers that have demonstrated an interest in partnering in a pilot project
- Initial contact has been made with two tribal governmental bodies (Yurok & Karuk) in the PacifiCorp service territory and with a representative in Modoc county
- PacifiCorp engaged with Dominion Energy (Dominion) to understand their approach to Rural Broadband Program
 - Dominion is utilizing a middle mile approach with partner ISPs to provide access
 - Dominion has expressed that supplemental land rights have been a significant obstacle in implementation

Pilot Framework

- PacifiCorp to partner with an ISP for pilot project
- PacifiCorp to provide middle mile, ISP to provide last mile
- To succeed, pilot proposal must be aligned with PacifiCorp's principles, where PacifiCorp:
 - Provides safe, reliable and affordable <u>energy</u> to our customers
 - Ensures maximum benefit to customer
 - Limits rate pressure on its California customers

Next Steps and Challenges

- Continue discussions with ISPs
 - PacifiCorp is not an ISP/CLEC, any pilot program requires a willing ISP to participate. Any pilot must make fiscal and strategic sense to the participating ISP.
 - Further study and due diligence is required to determine if the proposed pilot route is feasible for PacifiCorp and the partner ISP from a technical and fiscal standpoint.
 - The ISP will be responsible for an extensive buildout to support last mile delivery to the underserved community.
 - Significant financial burden falls on the ISP.
 - Supplemental Land Rights: Partner ISP will need to obtain supplemental permits/easements on the new fiber route as well as on any existing PacifiCorp fiber that is utilized.
- Conduct specified outreach to tribal governments and/or communities after partnership with ISP is secured and more concrete project is identified
- Negotiate contract and terms of agreement
 - Requires a long-term O&M support agreement for middle mile fiber, including Service Provider level SLAs from PacifiCorp to the ISP.
 - PacifiCorp does not have internal fiber splicing crews to support fiber maintenance and emergency repair.
- No cost recovery mechanism is currently available to PacifiCorp

Thank You

Broadband OIR Pilot Response

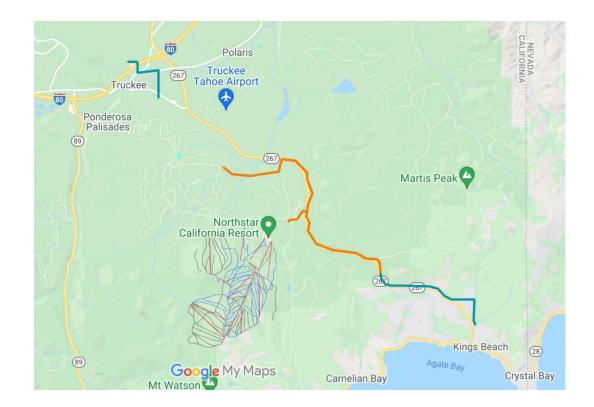
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Current Fiber Assets

• Current Dark Fiber

- Current fiber is orange on the map
- Proposed fiber is teal on the map
- Current fiber is areal fiber strung on the sub-transmission line
- Designed for utility operations
- Not currently terminated
- Future expansion planned is blue on map
- Missing connecting section between spans
- Some possible spare fiber for middle mile leasing to third party depending of operational requirements for gird operations





Information about area with fiber

• Truckee to Kings Beach CA

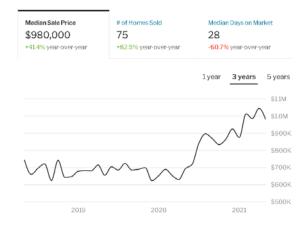
- Highly affluent area

- Truckee, medium house price 980K
- Kings Beach, medium house price 700K

• ISP Market saturation

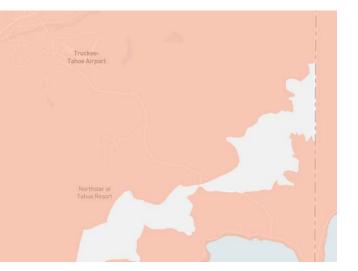
- AT&T
- SuddenLink
- Spectrum

Truckee Housing Market Trends

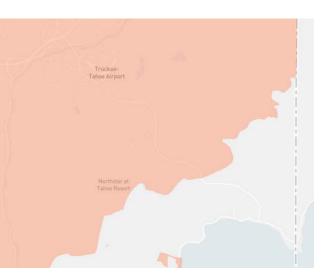




Spectrum Coverage Map



AT&T Coverage Map



SuddenLink Coverage Map



Locations of Underserved Communities based on CPUC Map and available ISPs in those Communities

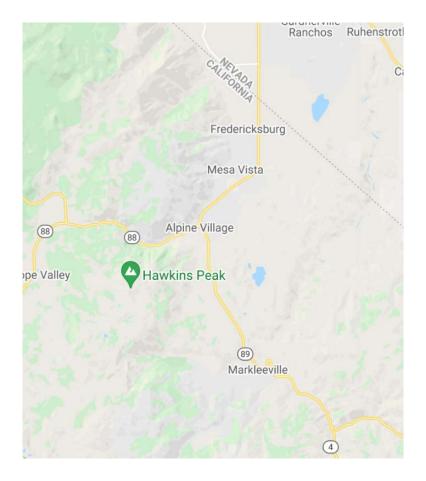
- Loyalton: 207 Unsvd HH
 - Rural Area
 - Limited opportunity on existing structure
 - ISP options:
 - Plumas Sierra Telecommunications
 - Sky Fiber
 - Digital Path
- Dollar Point: 9 Unsvd HH
 - Highly affluent area
 - ISP options:
 - Suddenlink
 - AT&T
 - Spectrum

- Tahoma: 182 Unsvd HH
 - Highly affluent area
 - Limited opportunity on existing structure
 - ISP options:
 - Suddenlink
 - AT&T (Lower speeds)
- Walker:
 - Rural
 - Electric connectivity via NVE
 - ISPs
 - Frontier
 - Mono Broadband (not confirmed)
 - Race (Gigafy North 395 Project)



Pilot Case study: Markleeville Area

- Area info
 - Rural area
 - Markleeville: 210
 - Mesa Vista: 200
 - Alpine Village: 114
 - ISPs
 - EarthLink
 - Frontier
 - Ltd Broadband
 - Existing utility energy service to community via NV Energy system tie

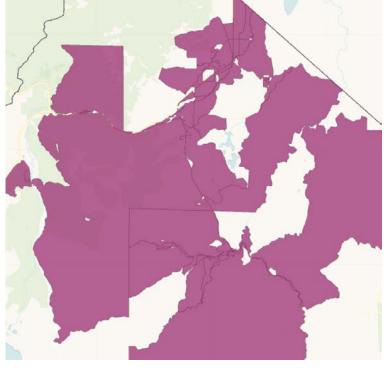




Pilot Case study: Markleeville Area

• Challenges

- No existing interconnect for Fiber (bridge to no where)
- High cost to run fiber (middle mile)
 - 5k-10K per mile for material and labor
 - Does not include new structure if poles need to be replaced
 - Estimated 15 Mile from tie to Markleeville
- Permitting
- Easements
- Lack of interest from ISPs
 - Reached out to 5 area ISPs with no response
- Lack of in house expertise
 - 8-1 additional head count needed to service middle mile
- Lack of funding sources
 - Rate base may not find it prudent use of funds
- No clear path forward for a pilot



LTD Broadband Coverage Map



Sources

• Redfin

- <u>https://www.redfin.com/city/20216/CA/Truckee/housing-market</u>
- <u>https://www.redfin.com/city/23616/CA/Kings-Beach/housing-market</u>

• ISPs

- <u>https://www.highspeedinternet.com/ca/kings-beach</u>
- <u>https://www.att.com/local/internet/california/king-city</u>
- <u>https://www.highspeedinternet.com/providers/suddenlink-communications</u>
- <u>https://broadbandnow.com/Charter-Communications</u>
- <u>https://www.mysky.com.ph/skyfiber</u>
- <u>https://www.digitalpath.net/</u>
- http://www.monobroadband.com/contact/
- <u>https://www.nnvhs.net/</u>
- <u>https://www.race.com/coverage/community/walker/#status</u>
- <u>https://ltdbroadband.com/</u>
- Other
 - https://en.wikipedia.org/wiki/Walker, Mono_County, California
 - https://tellusventure.com/downloads/casf/2020/cpuc_final_resolution_casf_race_williams_17dec2020.pdf
 - https://en.wikipedia.org/wiki/Markleeville, California
 - https://en.wikipedia.org/wiki/Alpine Village, California
 - https://en.wikipedia.org/wiki/Mesa Vista, California



Thank you





Broadband OIR (R.20-09-001) Pilot Proposal Jun 30, 2021

Bear Valley Electric Service



Summary

- BVES Overview
- BVES Fiber Optics
- Unserved Customers
- Risks and Barriers
- Proposal
- Questions

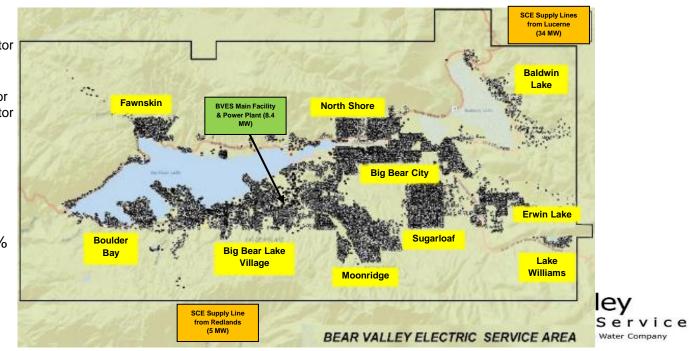




BVES Overview



- Location: 32 square miles of rural and mountainous terrain at approximately 7,000 ft. in San Bernardino Mountains (80 miles East of Los Angeles).
 - Heavy tree and vegetation density and mostly dry environment (80.5% of time per NFRDS)
- Key jurisdictions: County of San Bernardino, City of Big Bear Lake, US Forest Service
- **Customers:** 24,604 total [23,091 residential and 1,513 commercial] CARE: 2,032; Medical Device: 238; AFN: 14
- Electrical System:
 - Sub-transmission (34.5 kV)
 - 24.8 circuit miles bare overhead conductor
 - 4.2 circuit miles covered overhead conductor
 - 0.9 circuit miles underground
 - Distribution (4 kV)
 - 178.5 circuit miles bare overhead conductor
 - 3.5 circuit miles covered overhead conductor
 - 53.2 circuit miles underground
 - o Substations: 13
 - o Bear Valley Power Plant: 8.4 MW
 - o 446 NEM customers: 3.39 MW
 - o 21 DG customers: 0.13 MW
 - o Supply Lines: 39 MW total
 - Load delivered (2020): 133,269 MWh (33% RPS)
 - o Load is winter & evening peaking
 - Historical peak: 47 MW (2018)





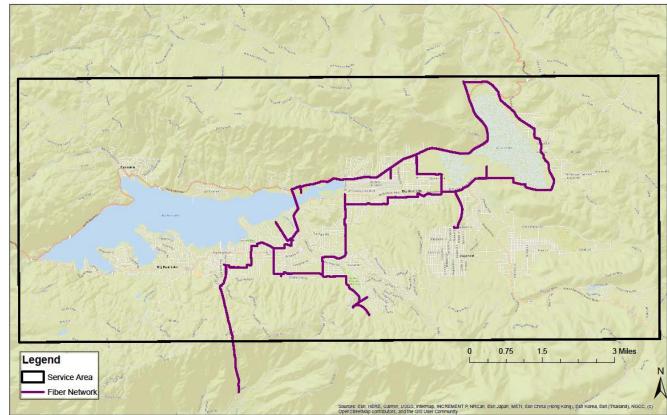
BVES FIBER OPTIC CABLE PROJECT



Strictly dedicated to BVES supervisory control, data acquisition (SCADA) system, physical security and surveillance network

Project completion in 2 to 3 years

In compliance with Commission decisions D.16-01-008 and D.19-01-037 (R.14-12-014)



Fiber Optic Cable Overview Map



EOY 2019 FIXED BROADBAND DEPLOYMENT



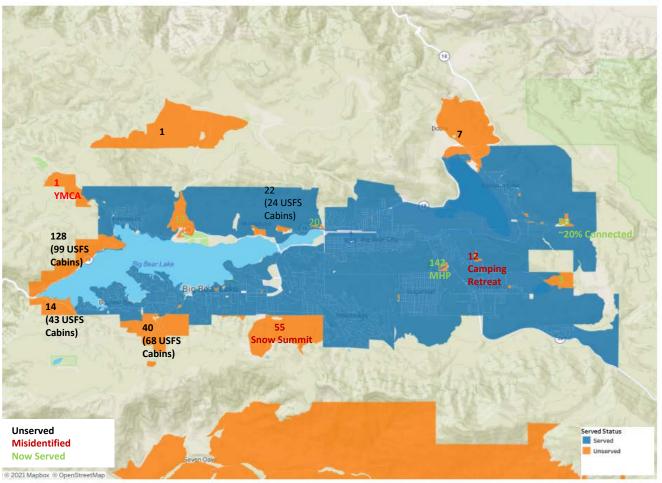
Performed visual inspection of areas with Unserved Customers

Broadband cable now in the neighborhoods or in close proximity of unserved customers

2019: ~515 Unserved 2021(Estimate): ~250 Unserved

~60% of customers are seasonal or part-time residents. Many customers do not have broadband or frequently turn off service

Many USFS leases are rustic cabins which cannot be a full-time residence





BVES RISKS AND BARRIERS

BVES is an Electric Utility

BVES has

- no expertise in broadband installation
- no licenses or permits for broadband
- Legal and liability concerns
- Insurance concerns
- no means of cost recovery
- no intent to compete with ISPs





BVES PHASE II PILOT PROPOSAL

No Feasible Pilot Project Options

- Broadband Cable is in neighborhoods or in close proximity of unserved customers
- No Middle Mile cabling required
- Existing Joint Pole Agreement ISPs may utilize BVES power poles for broadband cable installation
- Estimated 250 unserved customers, many are parttime or seasonal residents





Thank You



