

Native American Nations:

*The pandemic was a catalyst for the need
for connectivity,...*

...But are we connected yet?

MATTHEW RANTANEN

NANOG 86

Cree Indian

lyiniwok/Nehiyawok

Norwegian

Nordmenn/Norsk

Finn

Suomalainen

Senior Advisor, Tribal Broadband:

GOLDEN STATE NETWORK (California) [goldenstatenet.org]

Director of Technology:

SCTCA Southern California Tribal Chairmen's Association [sctca.net]

TDVNet Tribal Digital Village Network [sctdv.net]

Partnering & Business Development:

ARCADIAN INFRACOM [arcadianinfra.com]

Co-Chair, Technology and Telecom Subcommittee &

Technology Task Force: NCAI National Congress of American Indians [NCAI.org]

California Tribal Advisor: CBC California Broadband Council

Board Member: ASU AIPI

Arizona State University, American Indian Policy Institute



It is important to understand some of the underlying issues inherent in the development of networks on the sovereign nations of the American Indian reservations in the United States. Every situation is different and the concept of a cookie-cutter network solution does not apply.

From cultural preservation, to the geography of 574 Federally recognized nations, to the missing 8000 middle miles providing access to the rest of the world, and the limited access to affordable spectrum to the community, dictates the design strategies to bring this 21st century resource to North America's first people.

What are the
Biggest Challenges
for Tribes,
to get Internet access today?

- Affordable Middle-Mile Access
- Sufficient Funding
- Affordable Last-Mile Solutions
- Lacking Human Resources
- Maintaining Digital Sovereignty

Several entities are making a difference.

CA SB156: CABroadband4All

Golden State Network / CA

CDT/Caltrans

Arcadian Infracom

Tribal broadband bootcamp.com

Tribal resource center.net



GOLDENSTATENET

www.goldenstatenet.org

Native Americans in California

109 Federally
recognized tribes
in CA

573 Federally
Recognized Tribes
in the US



TDOVNetwork

CA STATEWIDE OBJECTIVE

- Develop an *affordable, open-access, middle-mile network* to connect communities to the global Internet.
- Prioritize *unserved and underserved communities* across the state.
- Construct the network *expeditiously*, using *new and existing technology assets*.
- *Serve last-mile providers* with cost-effective network services.
- Design a *highly reliable network*, especially given unpredictable environmental conditions.
- Stimulate *market competition* for last-mile Internet provider services.

Middle-Mile Broadband Initiative

[FAQs](#) [Data & Analysis](#) [Resources](#) [MMAC Meetings](#) [Contact & Comment](#)



MMBI Partners



BROADBANDFORALL.CDT.CA.GOV



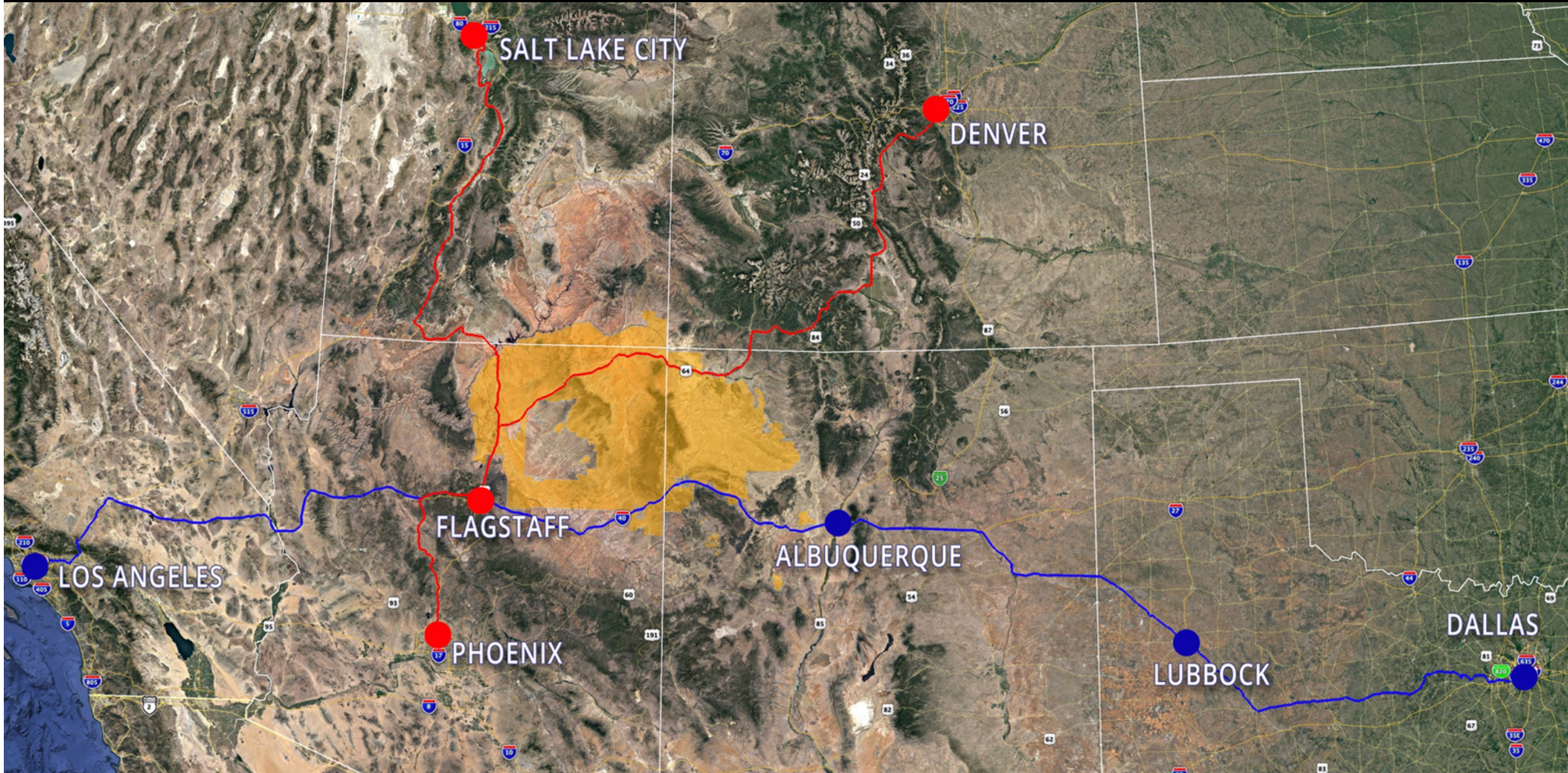
Arcadian Infracom

Access to the middle-mile is the hardest

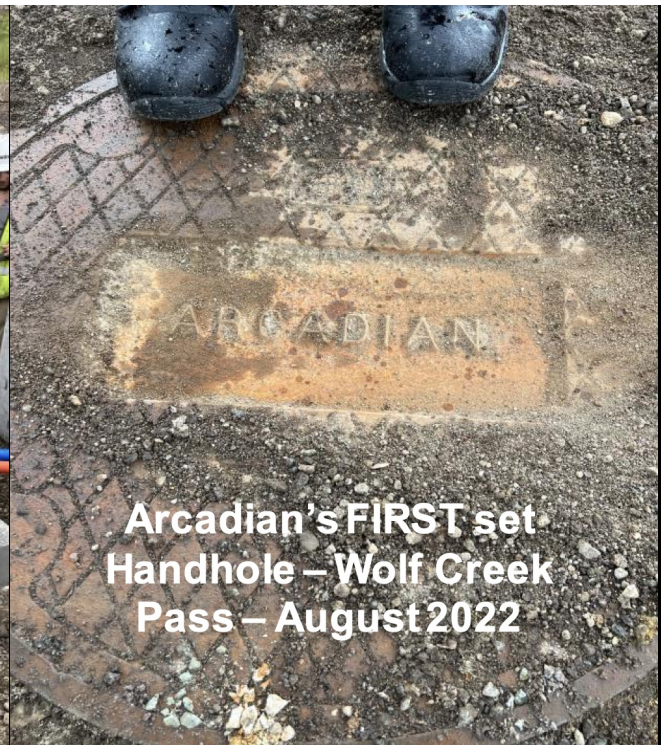


ARCADIAN INFRACOM routes in blue and red..

Access to the middle-mile is the hardest



ARCADIAN INFRACOM routes in blue and red..



Arcadian builds over Wolf Creek Pass



TRIBAL BROADBAND BOOTCAMP

Tribalbroadbandbootcamp.com

Tribal Broadband Bootcamp 2022

Learn, build and connect with people bootstrapping Indigenous broadband.

[REQUEST AN INVITE](#)

[LEARN MORE](#)



What is Tribal Broadband Bootcamp?

Many rural areas lack decent broadband Internet access, but the lack of availability in Tribal reservations is extreme. For decades, Tribes have been overlooked, ignored, and defrauded by telecommunications companies seeking to extract wealth from their people and land. Many Tribal leaders have concluded they need to build

The Tribal Broadband Bootcamp began as a conversation on how to build on the impressive work of the Internet Society's North American chapter in the Indigenous Connectivity Summit.

These events are being organized by Matthew Rantanen and Christopher Mitchell, along with

TRIBAL BROADBAND BOOTCAMP

Tribal broadbandbootcamp.com



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tribalresourcecenter.net



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Capital Projects Fund Deadline Extended to October 14 →

Contact TRC Help Desk

FUNDING

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[UNDERSTANDING CONNECTIVITY](#)

[CASE STUDIES AND BUSINESS MODELS](#)

[GETTING STARTED](#)

[BUILDING NETWORKS](#)

[MAINTAINING BROADBAND NETWORKS](#)

[BROADBAND RESILIENCE](#)

LEGAL

Getting Started

Beginning a tribal connectivity project can seem daunting but knowing where to start can make a big difference. Here you can find the information and resources you need to start your project in a successful manner. Obtaining a feasibility study, needs assessment, and scope of work will prove to be useful.



[Getting Started](#)

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[Political Realities](#)

Building broadband means working with a lot of government officials and tribal officials. Often it can be difficult to navigate and express community needs. Here you can find some resources [...]



[Engagement with Community](#)

Community engagement is an important step, in many ways it determines the success of your connectivity project. There are many ways to reach out to your community to create a [...]



[Working with Tribal Leadership](#)

Working with tribal leadership is imperative, not only for the success of your project but for the greater good of the community. Here are some resources and guidelines: Information on [...]



[Mapping and Planning](#)

Mapping and planning secure a productive project. Mapping is an important step, not only to best serve your communities needs, but to also preserve your community's history. Working with your [...]



[National Digital Navigator Corps from National Digital Inclusion Alliance \(NDIA\)](#)

The National Digital Navigator Corps is an organization that helps community members with internet adoption and the use of computing devices. For more information on this program and funding opportunities, [...]



Tribal Broadband Bootcamp 2022

Learn, build and connect with people bootstrapping Indigenous broadband.

[2022 Tribal Broadband Bootcamp: LTE 2.5 GHz \(Session 3\)](#)

This session discusses wireless and 2.5 GHz LTE.



Tribal Broadband Bootcamp 2022

Learn, build and connect with people bootstrapping Indigenous broadband.

[2022 Tribal Broadband Bootcamp \(Session 2\)](#)

This session discusses digital literacy, the NDIA (The National Digital Inclusion Alliance), digital navigators, best practices for wireless and open source LTE, and business models. Supporting links/videos: Why LTE?
<https://www.youtube.com/watch?v=RZ6UEoKDEr0>
[...]

Federal Funding:

There are several funding streams coming out of the Fed.

Many have been a topic of discussion as many as 10 years ago.

Some Cool Tribal Broadband Build Photos

THANK YOU!





Tribal Reservations: Wireless Solutions

The evolution of
Power off-grid
to support Tribal
communications



Tribal Reservations: Power Solutions, Wireless Solutions



Tribal Reservations: Spectrum types for Tribal use

