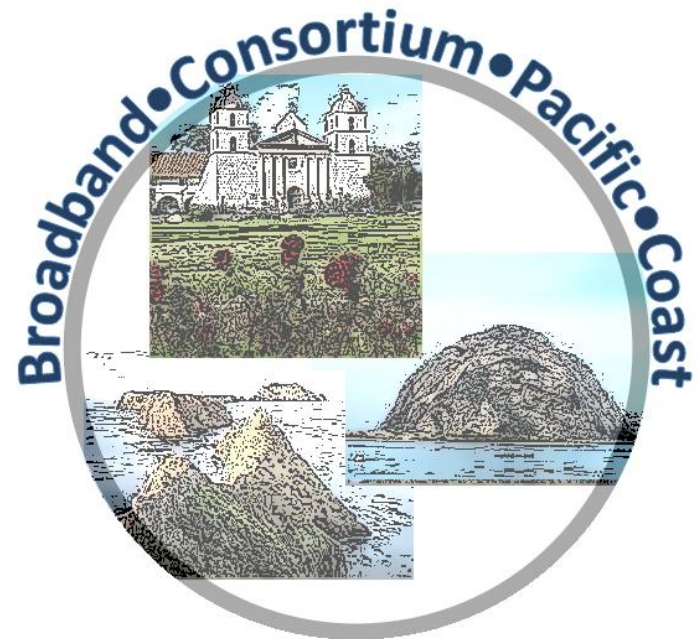


**Northern  
Santa Barbara County  
Fiber Ring  
Broadband Concept &  
Integration with  
Regional  
Economic  
Development**



# Northern Santa Barbara County Fiber Ring Broadband Concept & Integration with Economic Development



## **The Economic Alliance Foundation (EconAlliance\*)**

\*BCPC-designated Santa Barbara  
County liaison)

## **Broadband Consortium Pacific Coast (BCPC)**

# Northern Santa Barbara County Broadband Strategy

- ☐ Overview: Broadband Strategy Partners
- ☐ Overview: Northern Santa Barbara Co. (NSBC)
- ☐ NSBC Broadband Enhancement Need
- ☐ NSBC Infrastructure Notes
- ☐ Projects in Development
- ☐ Key Concept: Northern Santa Barbara County Fiber Ring Network
- ☐ Benefits of the NSBC Fiber Ring Network
- ☐ Success Factors



# Overview: Broadband Enhancement Strategy Partners

# Broadband Enhancement Strategy Partners



## **The Economic Alliance Foundation (EconAlliance)**

Northern Santa Barbara County  
501c3 nonprofit organization



## **Broadband Consortium Pacific Coast (BCPC) -**

Ventura, Santa Barbara and San  
Luis Obispo County broadband  
enhancement Consortium

*Since 2018, EconAlliance has been the Consortium's designated liaison to Santa Barbara County, working to identify needs, infrastructure, providers, and possible solutions*

# New Northern Santa Barbara County Broadband Partner



In 2020, the Santa Ynez Band of Chumash Indians invited EconAlliance and the Broadband Consortium Pacific Coast to partner in a grant application to the US Department of the Interior for development of a tribal feasibility study/broadband strategy. The application was successful and now the Chumash, EconAlliance and the Broadband Consortium Pacific Coast are engaged in developing the Chumash broadband study/strategy, a strategy which can greatly leverage the feasibility and development of the Northern Santa Barbara County Fiber Ring.



# Broadband Partner Overview



## EconAlliance

- ☐ Mission:
  - “Build Awareness, Advocacy, Appreciation for Northern Santa Barbara County (NSBC) industries and communities”
- ☐ Partner in NSBC economic dev
- ☐ SB County liaison to BCPC
- ☐ USDOl Chumash Sub-Grantee
  - Chumash Broadband Strategy
- ☐ USDA Rural Prosperity Partner
- ☐ Contacts:
  - Victoria Conner  
Initiatives Director, EconAlliance
  - Chris Chirgwin, Consortium Chair – North; EconAlliance Broadband Chair

## Broadband Consortium Pacific Coast (BCPC)

- ☐ Funded by CA Public Utilities Commission  
(one of several broadband Consortia in California)
- ☐ Mandates:
  - Connect rural communities
  - Deploy the 4<sup>th</sup> Utility
  - Accelerate technology deployment
- ☐ USDOl Chumash Sub-Grantee
  - Chumash Broadband Strategy
- ☐ Contact:
  - Bill Simmons, PhD  
Executive Director



# Chumash Partner Overview



- ❑ Santa Ynez Band of Chumash Indians (Chumash) is a federally recognized tribe - 117 tribal members and 1,200 lineal descendants. 242 Chumash tribal community members live in 100 homes on the original reservation.
- ❑ Tribal lands are situated in northern Santa Barbara County, accessible by Highways 154 (the Chumash Highway) or Highway 246. The lands are adjacent to the township of Santa Ynez and the City of Solvang.
- ❑ In 2019, the tribe placed an additional 1,411.1 acres in new Trust lands. This new tribal Trust land is expected to house 143 more homes.
- ❑ The Chumash own/operate the Chumash Casino & Resort, the Hotel Corque and Hadsten House hotel properties in Solvang, as well as Kita Winery, Sta. Rita Hills
- ❑ The Chumash are members and supporters of hundreds of community organizations and is a leader in both the economic and philanthropic sectors of Santa Barbara County and the region.





# Overview: Northern Santa Barbara County

# Northern Santa Barbara County Overview

Northern Santa Barbara County is comprised of five unique cities, as well as several key “Census-Designated Places (CDPs)” and other unincorporated areas, each with its own character and demographics

## **Cities**

Santa Maria (108,000-largest Co city)  
Buellton (5,102)  
Guadalupe (7,783)  
Lompoc (42,854)  
Solvang (5,838)

## **CDPs**

Cuyama  
Los Alamos  
Los Olivos  
Mission Hills  
New Cuyama  
Orcutt  
Santa Ynez  
Vandenberg Space Force  
Base (til 2021 VAFB)  
Vandenberg Village

## **Northern Santa Barbara County (NSBC): County economic stronghold - key assets, jobs, industries, attractions**

- ❑ **Ag industry** – County economic driver: ag operations have a \$2.8B economic impact/employ 25,000 workers (>100 commodities)
- ❑ **Wine Sector** - nearly all County vineyards, all 6 American Viticulture Areas (AVAs) in County are in NSBC, > 100 wineries
- ❑ **Space** - Vandenberg Air Force Base(Space Force Base): one of two key US launch facilities - \$2.4B econ impact, 4K wkrs, 3K contractors, VAFB on short list for HQ US Space Command
- ❑ **Healthcare**: 2 hospitals + Regional Med Ctr/Level III Trauma
- ❑ **Energy**: 100 yr old onshore oil/gas area, numerous operators
- ❑ **Tourism**: NSBC vineyards/wineries, other attractions, e.g. Solvang Danish Village – over 1M visitors annually
- ❑ **Manufacturing**: Diverse manufacturing sector, several world-leading companies exporting goods

# Northern Santa Barbara County\* Demographics

## Income Per Cap: \$26,998 (79.17% of US Per Cap)

### 7 Opportunity Zones

<b>Northern Santa Barbara County Demographics</b> <sup>1</sup> Stats America; <sup>2</sup> U.S. Census Quick Facts/American Community Survey/CensusReporter.org; <sup>3</sup> California EDD; <sup>4</sup> USDOC/EDA										
<b>7 Opportunity Zones in Northern Santa Barbara County</b> <b>Average Income Per Cap in 3 Northern Santa Barbara Co Opportunity Zone Cities: \$20,433<sup>2</sup></b> <b>Average Income Per Cap All 5 No Santa Barbara County (NSBC) Cities: \$30,268<sup>2</sup></b> <b>Income Per Cap Northern Santa Barbara Co Grant Region: \$26,998 – 79.17% of U.S. per cap<sup>1</sup></b>										
	Population <sup>1</sup>	Unemploy'd May/2020 <sup>3</sup> <i>Height of Pandemic</i>	Unemploy'd Feb/2021 <sup>1</sup> <i>Latest</i>	Per Cap Income <sup>2</sup> past 12 mo, 2019 \$	Median Household Income <sup>1</sup>	Poverty Rate <sup>1</sup>	Race/Ethnic Majority <sup>2</sup> <small>2 Cities, County 1 CDPs</small>	Home: Non English spoken <sup>2</sup>	HS Educ or Higher <sup>1</sup>	Opp'ty Zones
Entire Santa Barbara County	446,499	12.9%	7.1%	\$36,039	\$74,530	12%	85.4% white (46% Hisp/Latino)	40.3%	80.9% (BS/BA or >34.2%)	7 (all in NSBC)
City: Buellton	5,102	5.7%	2.5%	\$39,200	\$93,099	2.6%	84.4% white (29.3% Hisp/Latino)	28.5%	88.5% (BS/BA or >39.9%)	0
City: Guadalupe	7,783	10.9%	5.1%	\$17,361	\$51,875	17.9%	76.6 white (90.4% Hispanic/ Latino)	75.8%	55.4% (BS/BA or >9.2%)	1 (all of city)
City: Lompoc	42,853	18.4%	9.9%	\$23,840	\$54,855	17.2%	65.9% white (56.6% Hisp/Latino)	43.4%	76.4 (BS/BA or >12.6%)	3
City: Santa Maria	107,263	14.2%	11.9%	\$20,097	\$63,341	14.4%	82.1% white (76% Hisp/Latino)	66.6%	60.2% (BS/BA or >13.8%)	3
City: Solvang	5,838	7.8%	5.9%	\$50,841	\$83,431	9.7%	90.6% white (26.1% Hisp/Latino)	24.80%	94.2% (BS/BA or >38.2%)	
Unincorp'd 1-Cuyama, 2-New Cuyama, 3-Los Alamos, 4-Los Olivos, 5-Santa Ynez 6-Orcutt, 7-Mission Hills	42,608- total population 7 communities	16% average 13.3% Los Alamos, 13.8 Santa Ynez 22.5 Mission Hills, 13.9 Orcutt-Info unavailable: Cuyama, NC, Los Olivos	8% average 9.2% Los Alamos, 2.5 Santa Ynez, 10.8 Mission Hills, 8.1 Orcutt-Info unavailable: Cuyama, NC, Los Olivos	Not readily available	\$85K average \$56K New Cuyama \$65K, Los Olivos \$104K Santa Ynez \$108K, Orcutt \$91K, Mission Hills \$86K, no Cuyama, L Oliv	9.5% av 11% NC 20% LA 4% LO 10% SY 7% Orc 5% MH (Cuyama not avail -17pp)	87% white (24% Hisp/Latino) - average 7 CDPs	Not readily available	77.2% HS or > average 7 communities	0

\* Vandenberg AFB and Vandenberg Village not included



# NSBC Broadband Enhancement Need

# NSBC Broadband: Economic Need

## 7 NSBC Opportunity Zones

### ***Industrial/Commercial Gaps***

- Limited or inadequate broadband in industrial areas of most of NSBC
- Broadband gaps in key exporting agricultural area
- Healthcare sector & telehealth assets not linked w/ broadband
- Winery/tourism areas lack adequate broadband

### ***Community/Workforce Development Gaps***

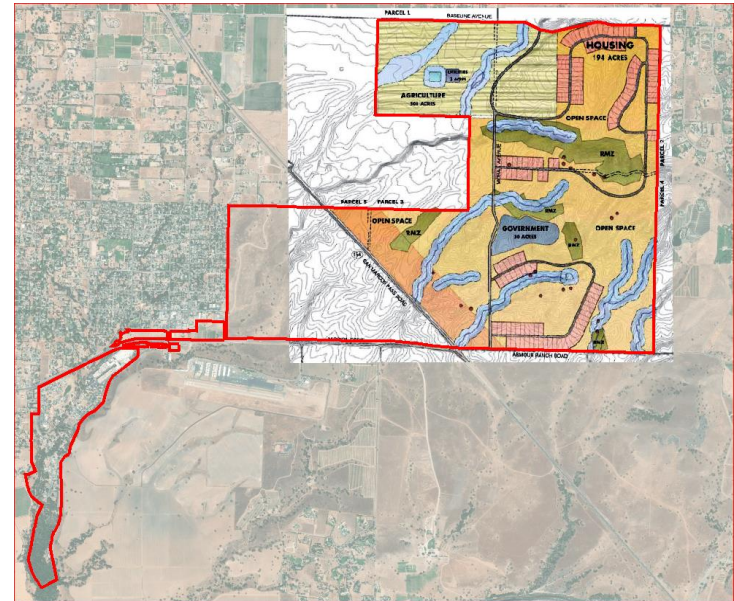
- No broadband: Santa Maria Fairgrounds, evac site for numerous organizations, situations
- Most NSBC city centers lack adequate broadband (impacting Emergency Services, Planning and Development, etc.)
- BB adequacy not consistent across Education and workforce assets, limiting workforce development partnering

# Santa Ynez Band of Chumash: NSBC Broadband Need/Catalyst

## Current Tribal Broadband Status: SY Chumash

- SY Chumash have been awarded exclusive tribal spectrum by FCC
- 2020 -SY Chumash awarded grant for broadband strategy connecting old/new Trust lands (EconAlliance, BCPC are grant partners)
- Chumash grant project supports the Northern SB County Fiber Ring concept and greater broadband access to No SB County

## Traditional & Newly Acquired Chumash Trust Land

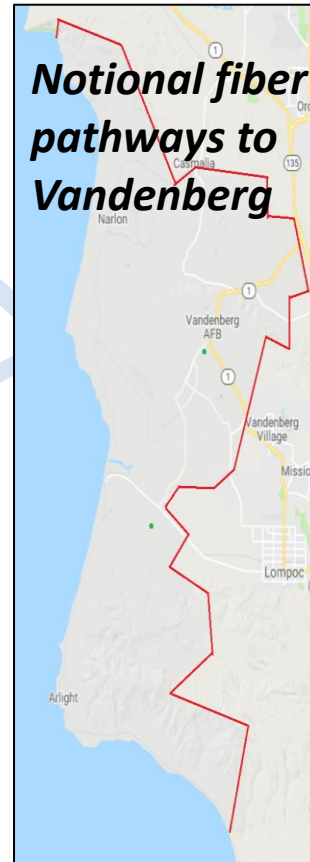




# Vandenberg Space Force Base\*: NSBC Broadband Need/Catalyst

- Spaceport of the Future vision
- Facilitating industrial base of domestic commercial space launch providers to align w/USAF Space Command strategy
- Vision requires enhanced broadband
- AF prefers not to route through existing base infrastructure
- Routes created can support expanded community access

\*Name change from Vandenberg Air Force Base 2021





# California Broadband Infrastructure Report Card<sup>1</sup>

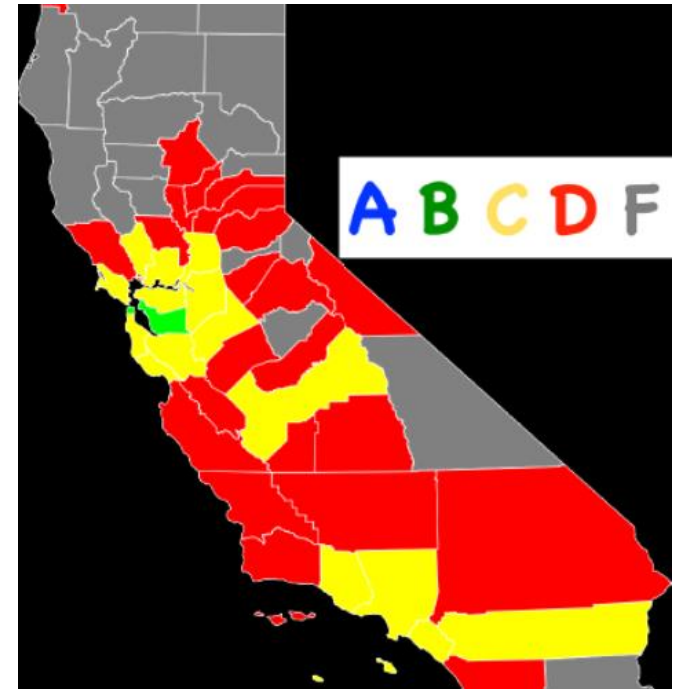
## Santa Barbara County: D- Grade<sup>2</sup>

- Only 8% of population @ 1000 Mbps download/500 Mbps upload required today for “speed of business”, impacting telecommuting, productivity, industry expansion, attraction & retention, etc.
- Unserved HH w/ slow service = 0.4%
- Unserved HH w/ no service = 2.6%

<sup>1</sup> Report data from December 31, 2018

<sup>2</sup> D=barely passing: at least 1 wireline provider that meets standard of 100 Mbps download, 20 Mbps upload

Note: Consortium/ EconAlliance know of at least one new provider since 2018 for a section of Santa Maria/Orcutt





# NSBC Broadband Current Infrastructure\*

\*Current infrastructure as we know it, data shown is from sources using provider-provided or other data sometimes incomplete

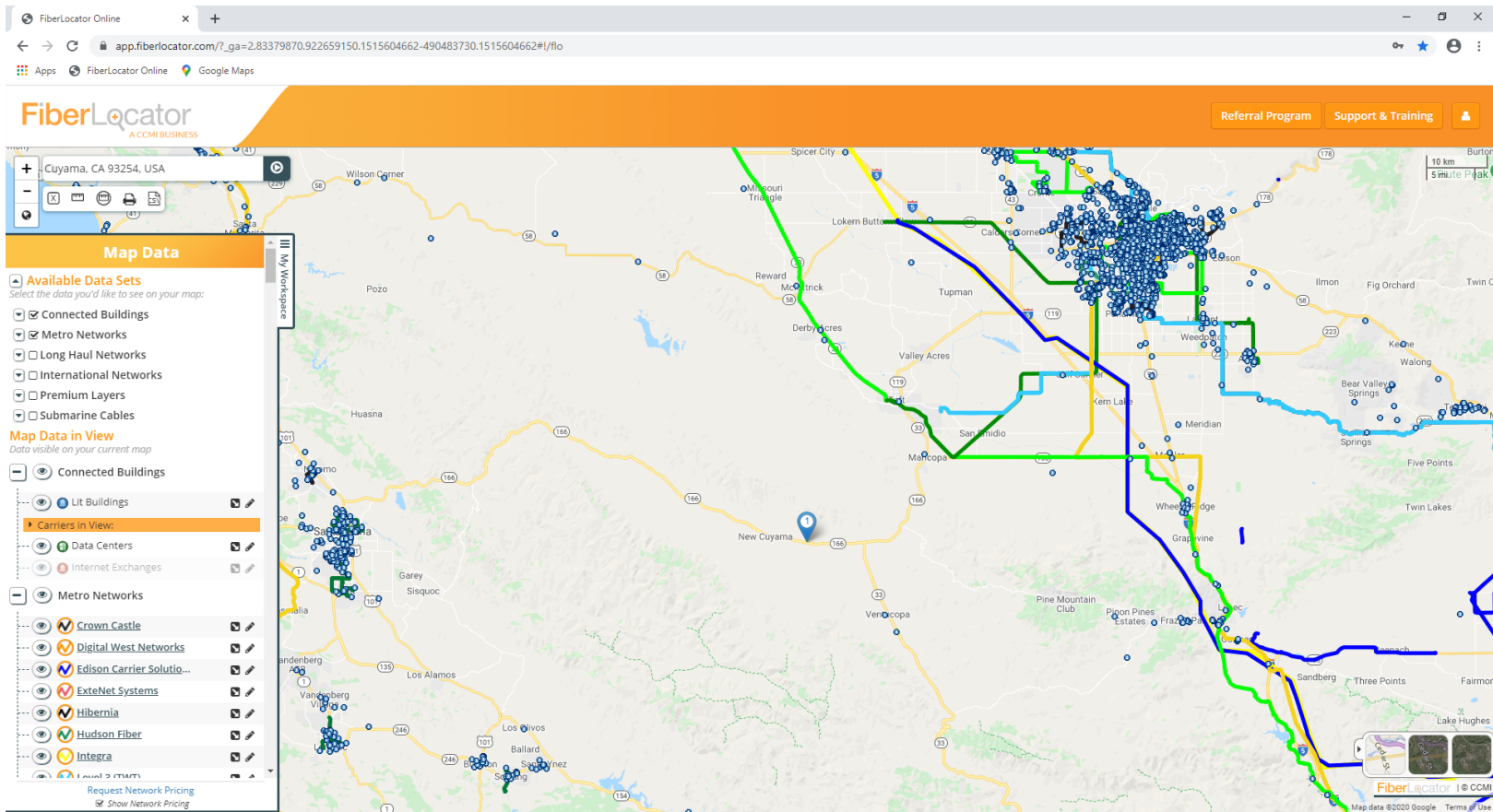
# NSBC Unique Infrastructure Proximity: Undersea Cables

## TransPacific Undersea Cable Networks within 40-50 miles of Northern Santa Barbara County

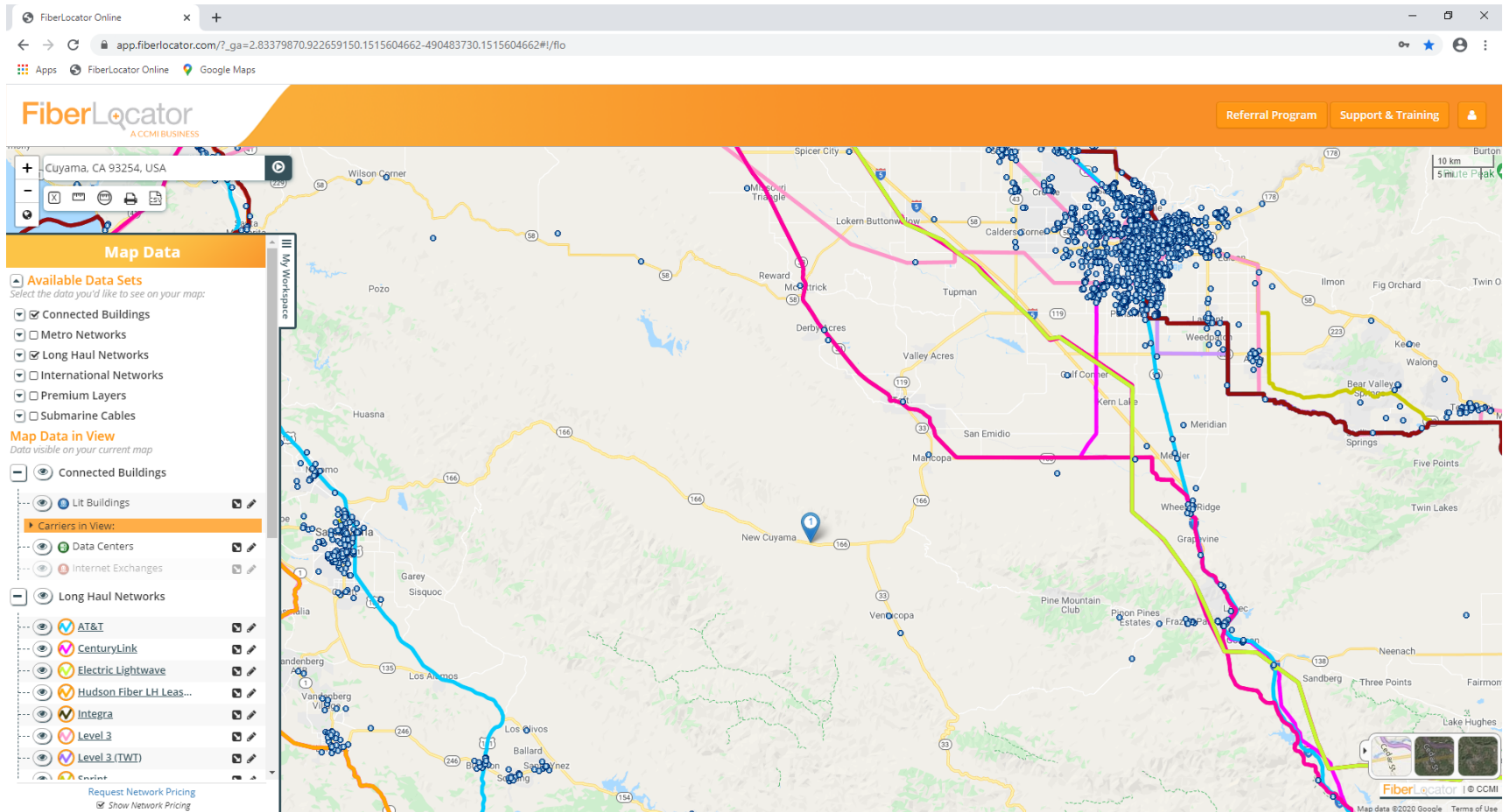
Sources: Infrapedia.com, SubmarineNetworks.com

TransPacific Network	Landing Site	Status	Service	End of Life	Design Capabil'y	Fiber Prs	Key Owner(s)	Backhaulers
Asia-America Gateway (AAG) SE Asia-US/CA (Thailand, Malaysia, HK, Viet Nam, Guam, Brunei, Singapore, Philippines, HI to US/CA)	San Luis Obispo, CA	Active	2009	2034	Original: 1.9 Tbps 2014: 100 Gps	3 (HI to CA)	AT&T & SE Asia Telecom Partners	AT&T, L-3, etc.
Bay to Bay Express Cable System (BtoBE) Singapore, Hong Kong to US/CA	Grover Beach, CA	Project	2022 (const in 2020)		108Tbps	6	Amazon Web Services, Facebook...	
Japan-US Cable Network (JUS) Japan to US	Morro Bay, CA	Active	2001	2026	640 Gbit/s, 2008 1.28 Tbit/s		NTT	
Southern Cross Cable Network (SCCN) Australia – US/CA	Morro Bay, CA	Active	2001 (HI to CA)		Original: 120 Gbit/s 2020: 10 Tbit/s	4 (HI to CA)	Southern Cross Cables, Ltd., Verizon 10%,SINGTEL,	AT&T, L-3 Sprint Verizon Century Link
Pacific Crossing -1 (PC-1) Japan to US/CA	Grover Beach, CA	Active	1999	2024	2020: 100G + 10G Wave Cap	4	Pac Crossing (NTT Ltd)	
Pan Am Crossing (PAC) Central America -Mexico to US/CA	Grover Beach, CA	Active	2000	2025	Orig'l: 20 Gbps	2	Century Link	
Trans-Pacific Cable Network–5 (TPC-5CN) Japan-US/CA Japan – Guam-HI-CA	Morro Bay, CA	Unknow n	1996	2021	Original 5 Gbp/s		Consortium 78 Carriers – US: AT&T, MCI	

# Broadband Fiber Northern Santa Barbara County Cuyama Metro

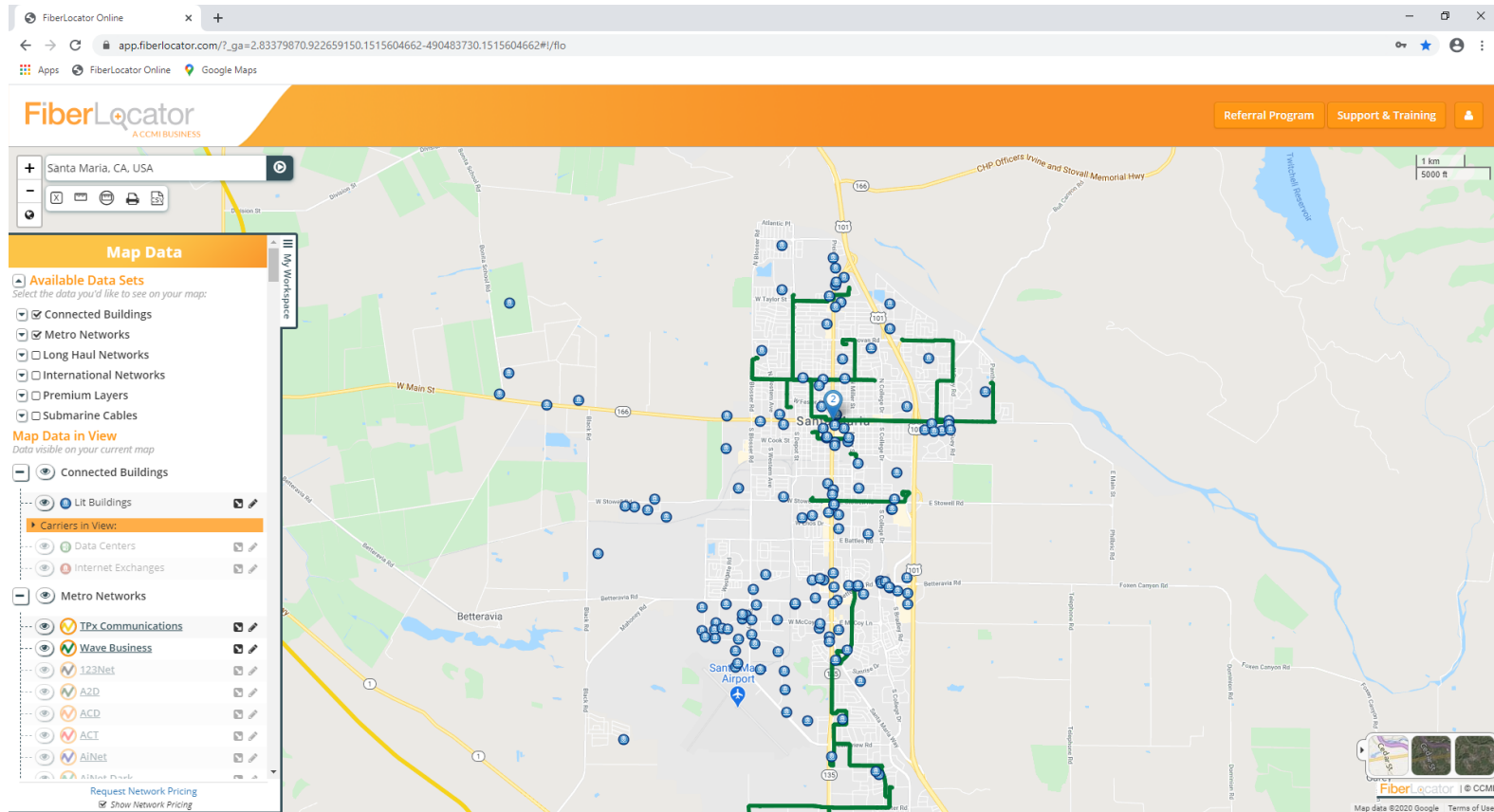


# Broadband Fiber Northern Santa Barbara County Cuyama Long Haul



Northern Santa Barbara County Fiber Ring  
Broadband Concept & Integration w/  
Economic Development

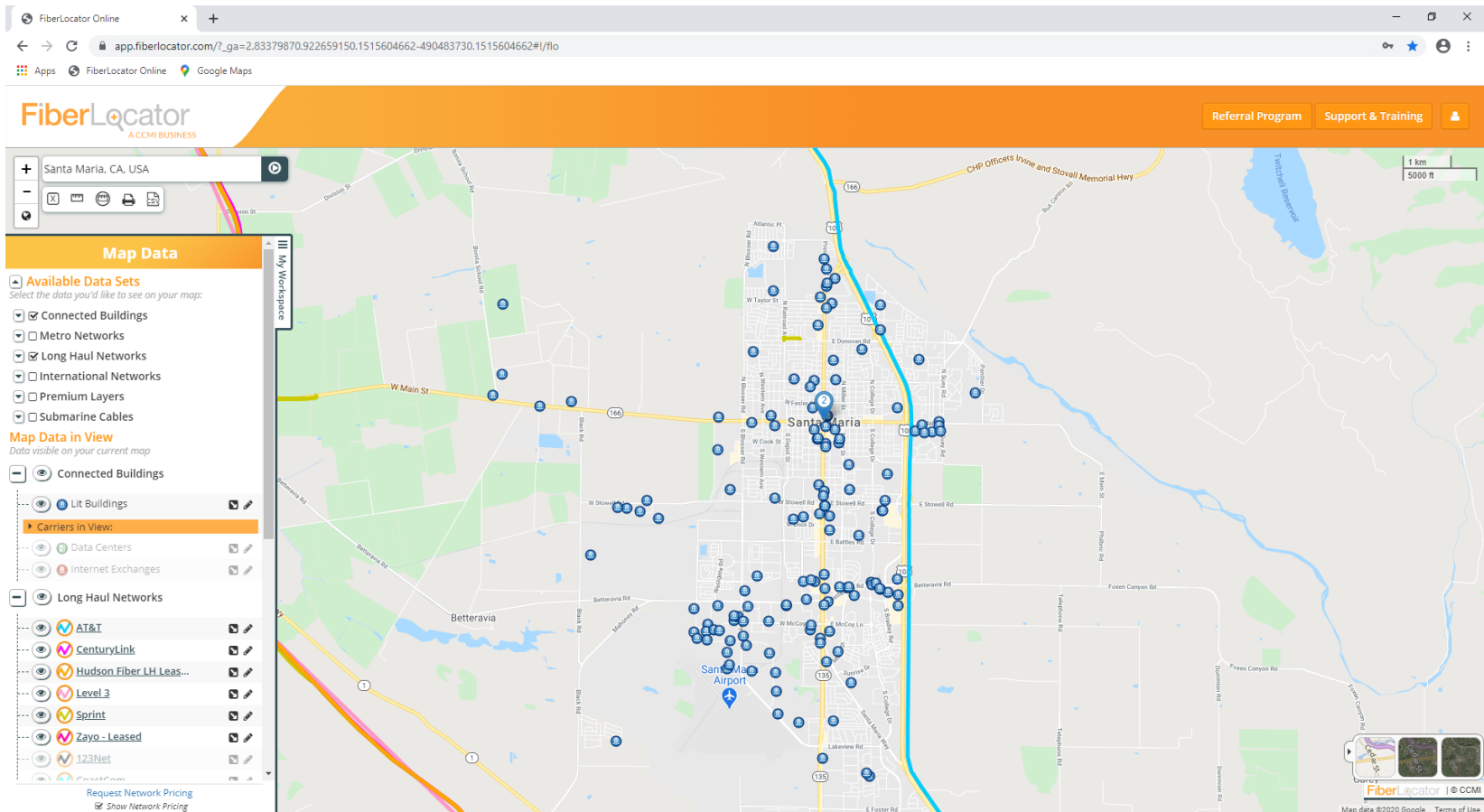
# Broadband Fiber Northern Santa Barbara County Santa Maria Metro



Northern Santa Barbara County Fiber Ring  
Broadband Concept & Integration w/  
Economic Development

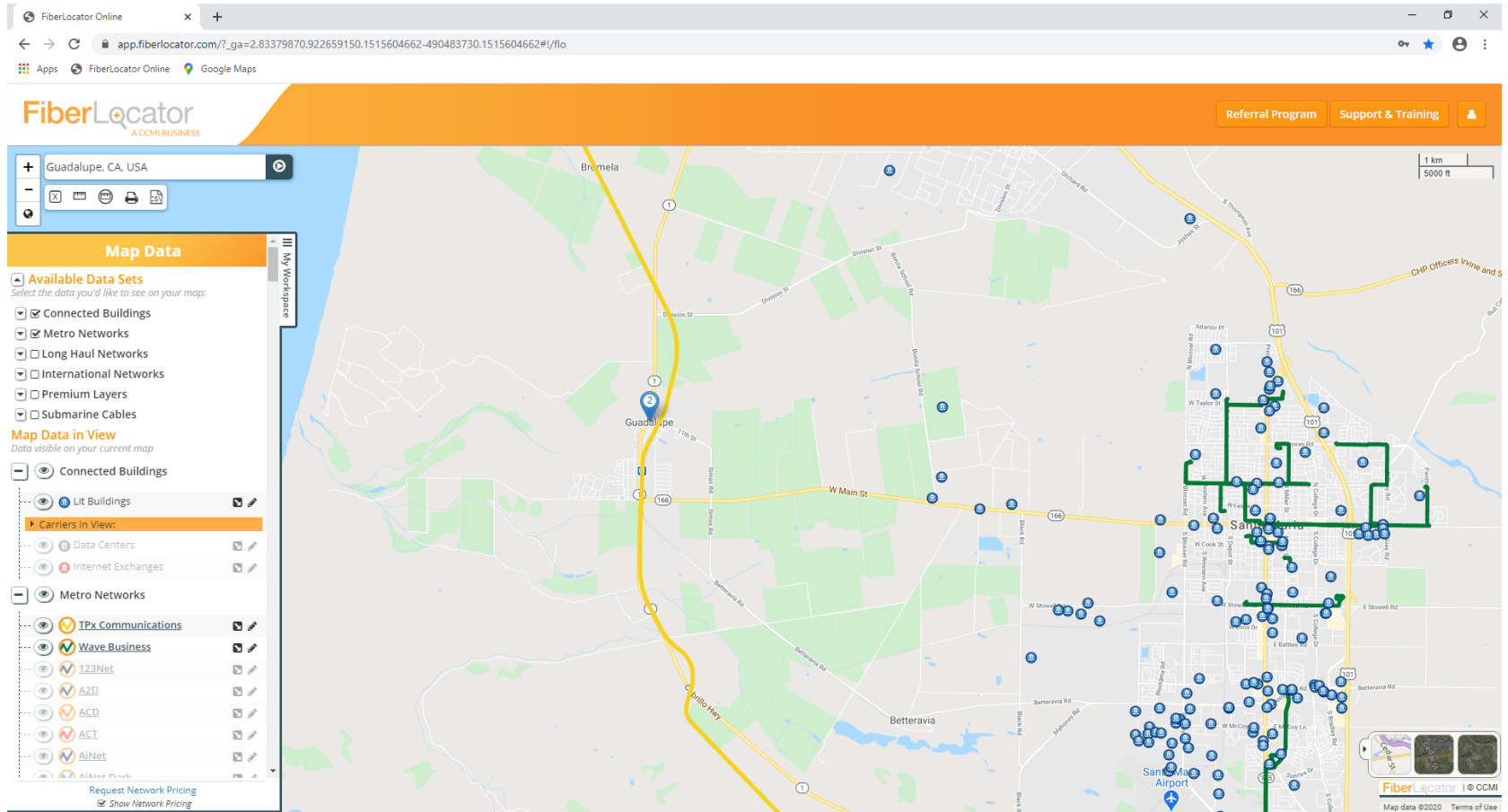


# Broadband Fiber Northern Santa Barbara County Santa Maria Long Haul



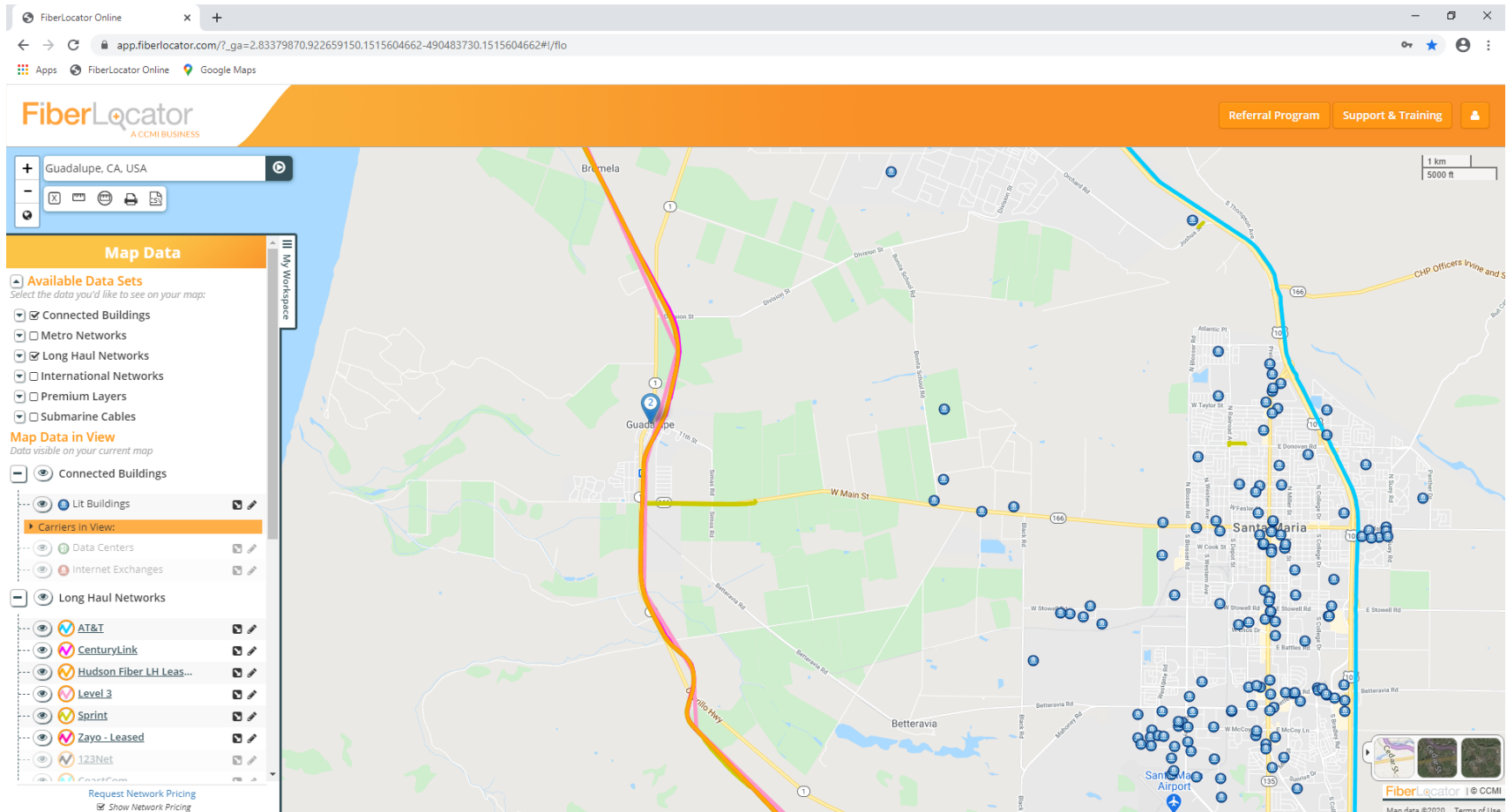
Northern Santa Barbara County Fiber Ring  
Broadband Concept & Integration w/  
Economic Development

# Broadband Fiber Northern Santa Barbara County Guadalupe Metro



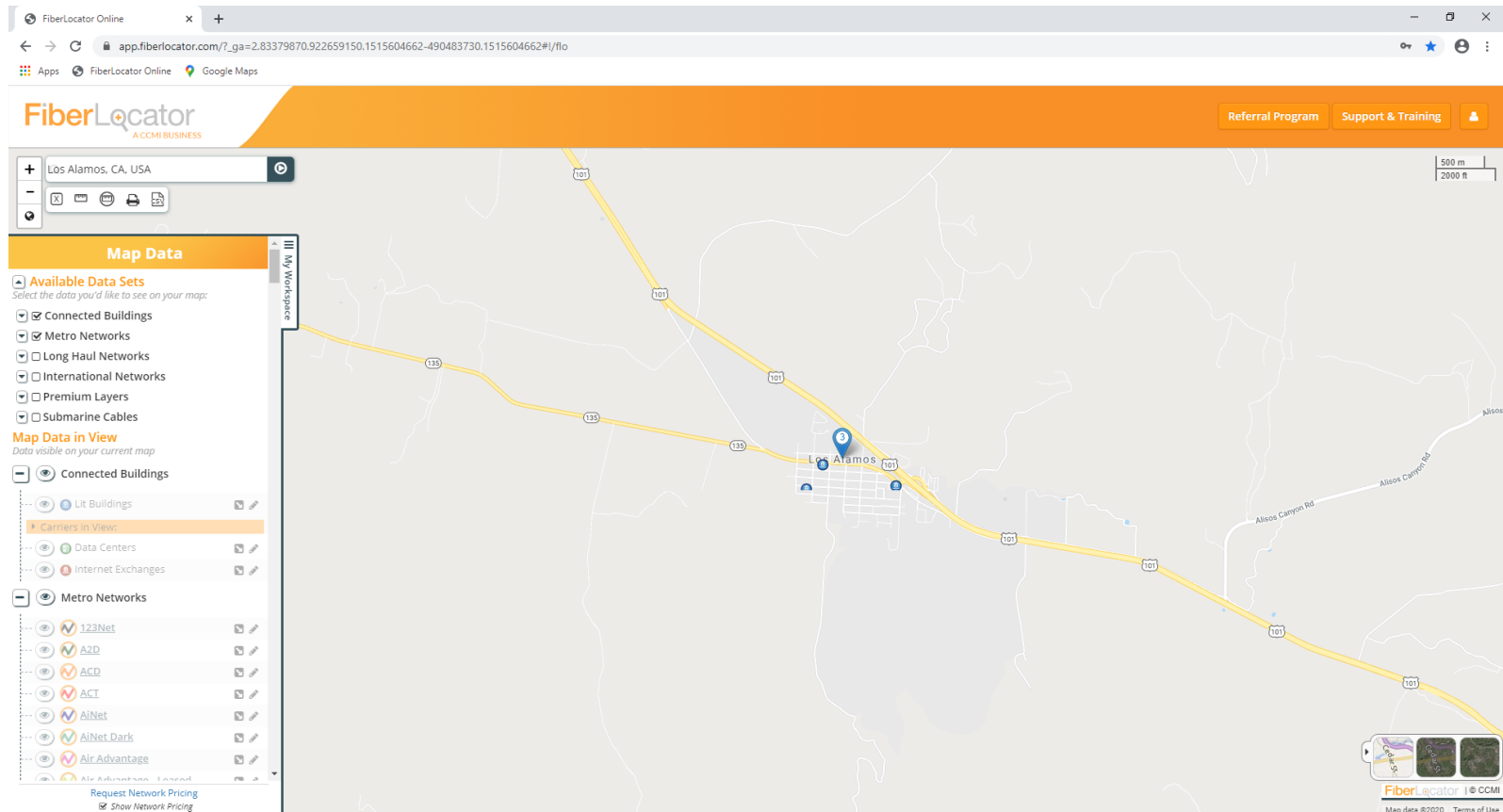


# Broadband Fiber Northern Santa Barbara County Guadalupe Long Haul



Northern Santa Barbara County Fiber Ring  
Broadband Concept & Integration w/  
Economic Development

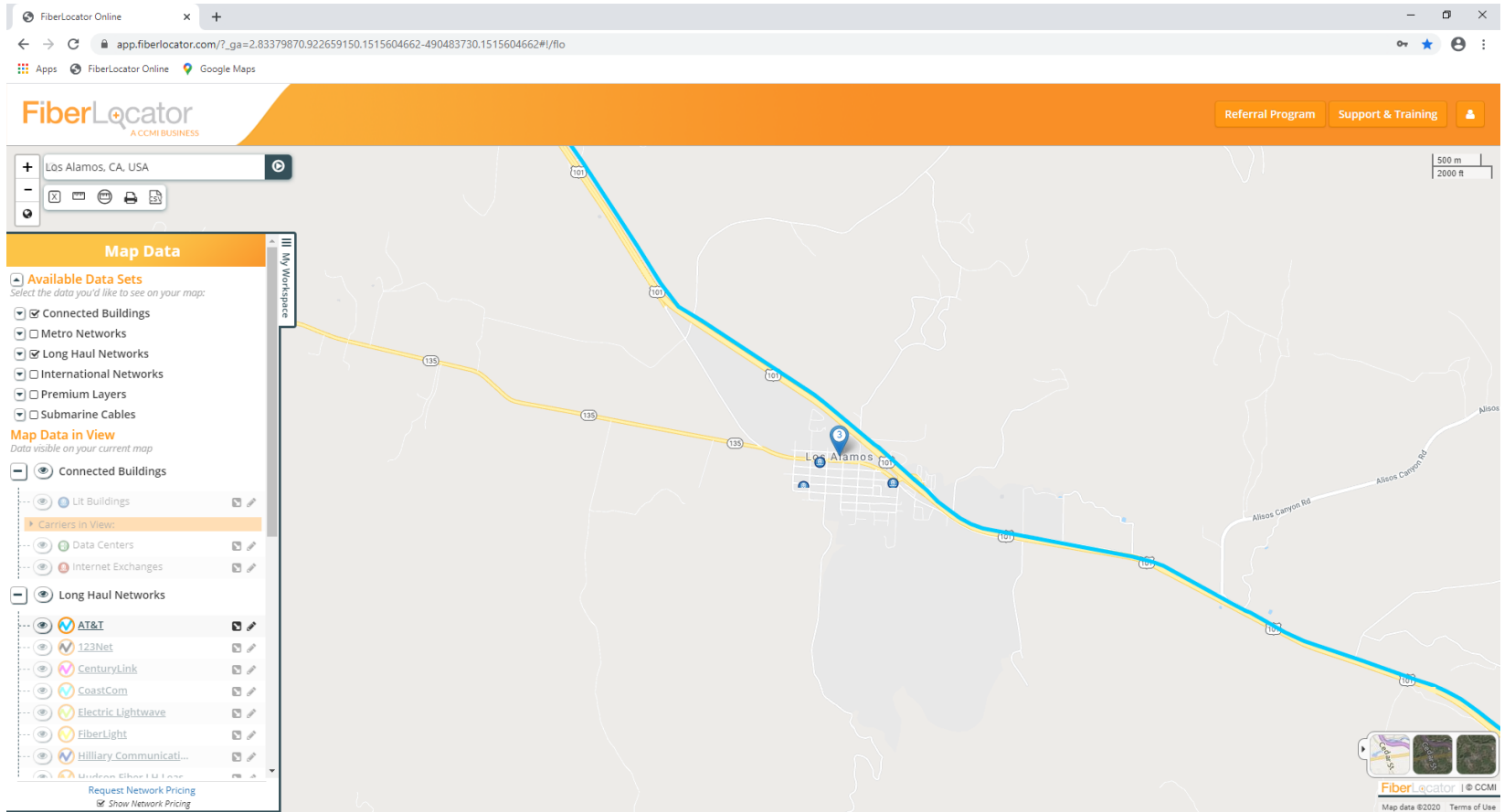
# Broadband Fiber Northern Santa Barbara County Los Alamos Metro



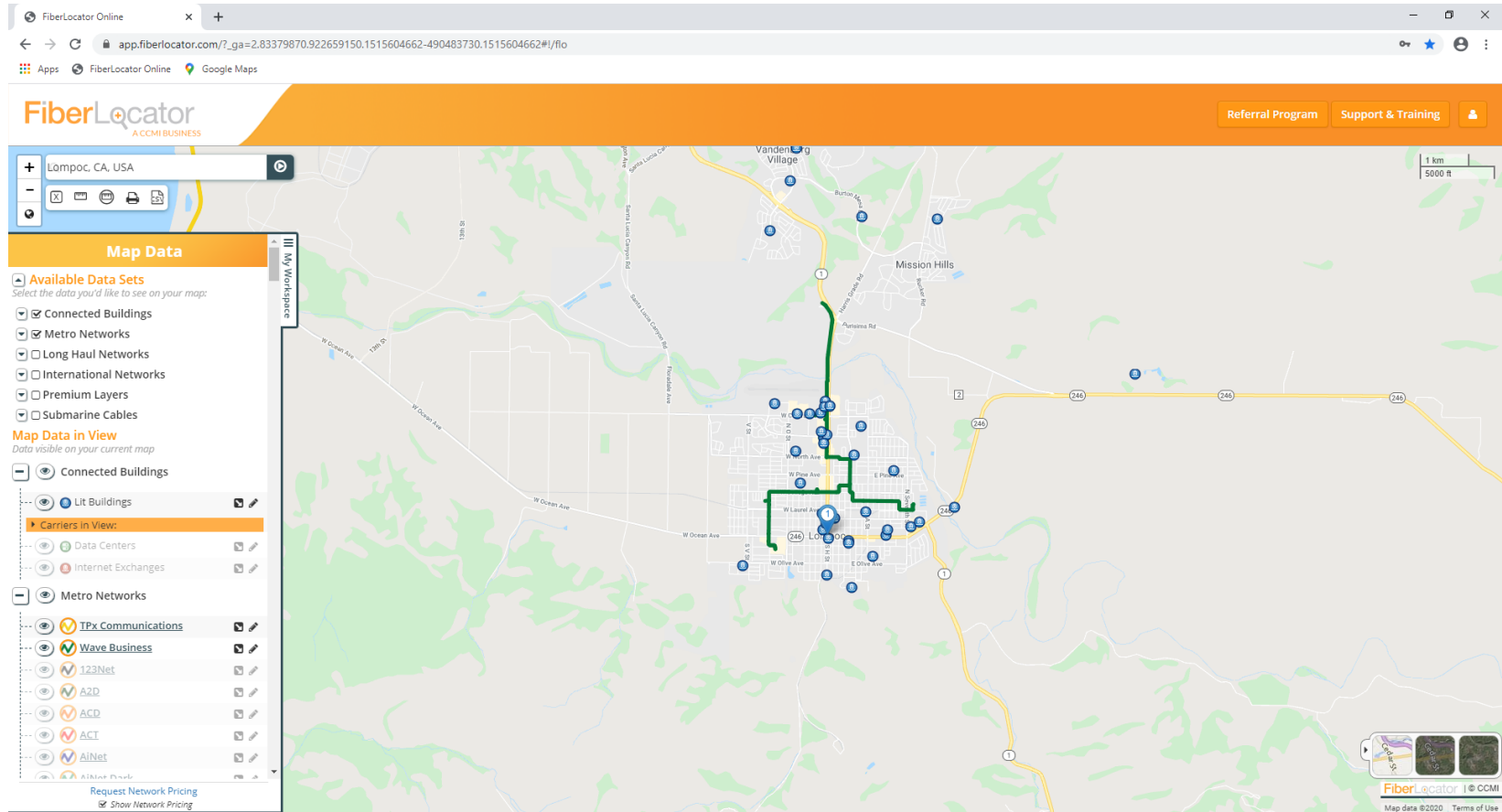
# Broadband Fiber

## Northern Santa Barbara County

### Los Alamos Long Haul



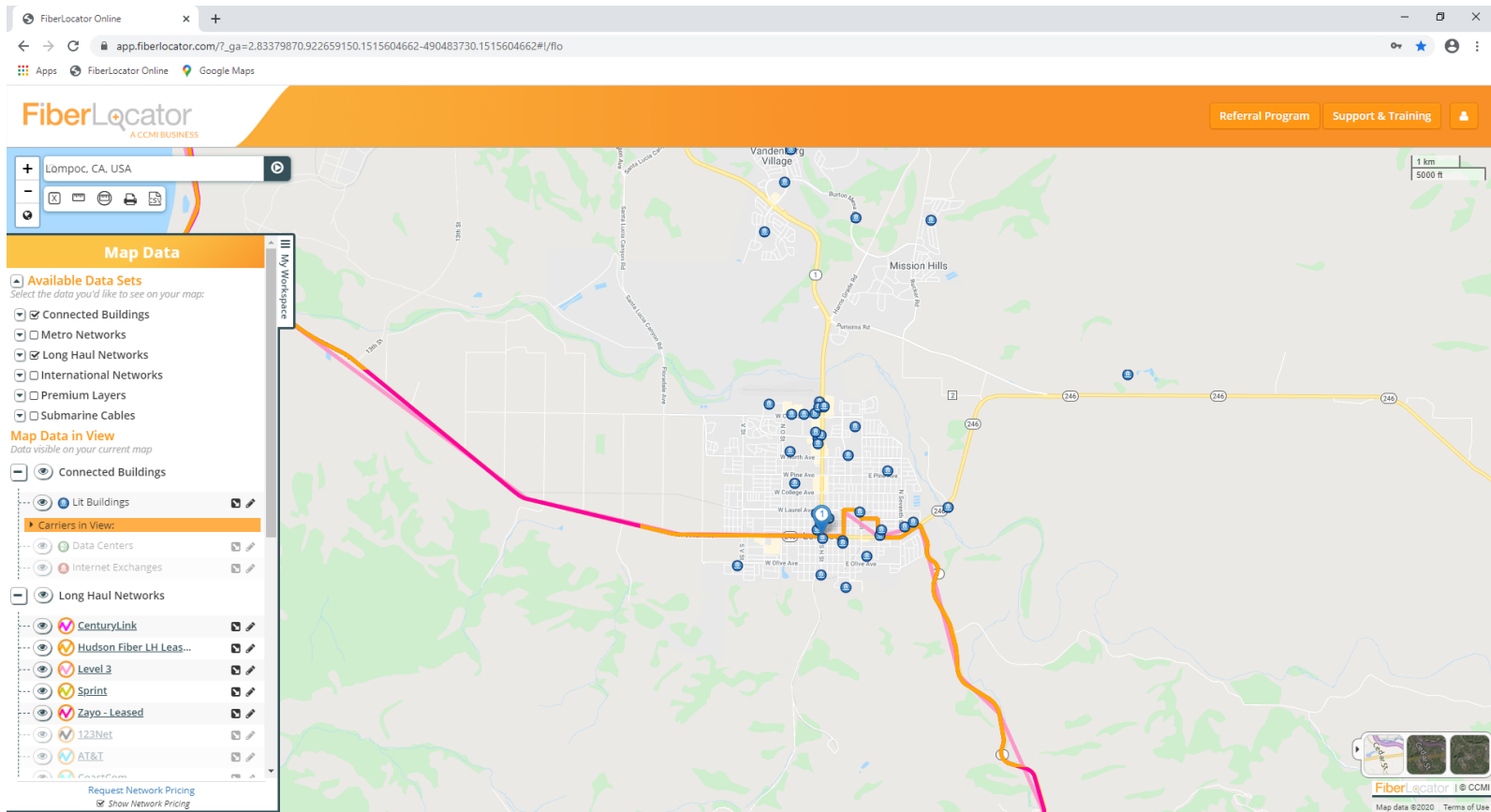
# Broadband Fiber Northern Santa Barbara County Lompoc Metro



# Broadband Fiber

## Northern Santa Barbara County

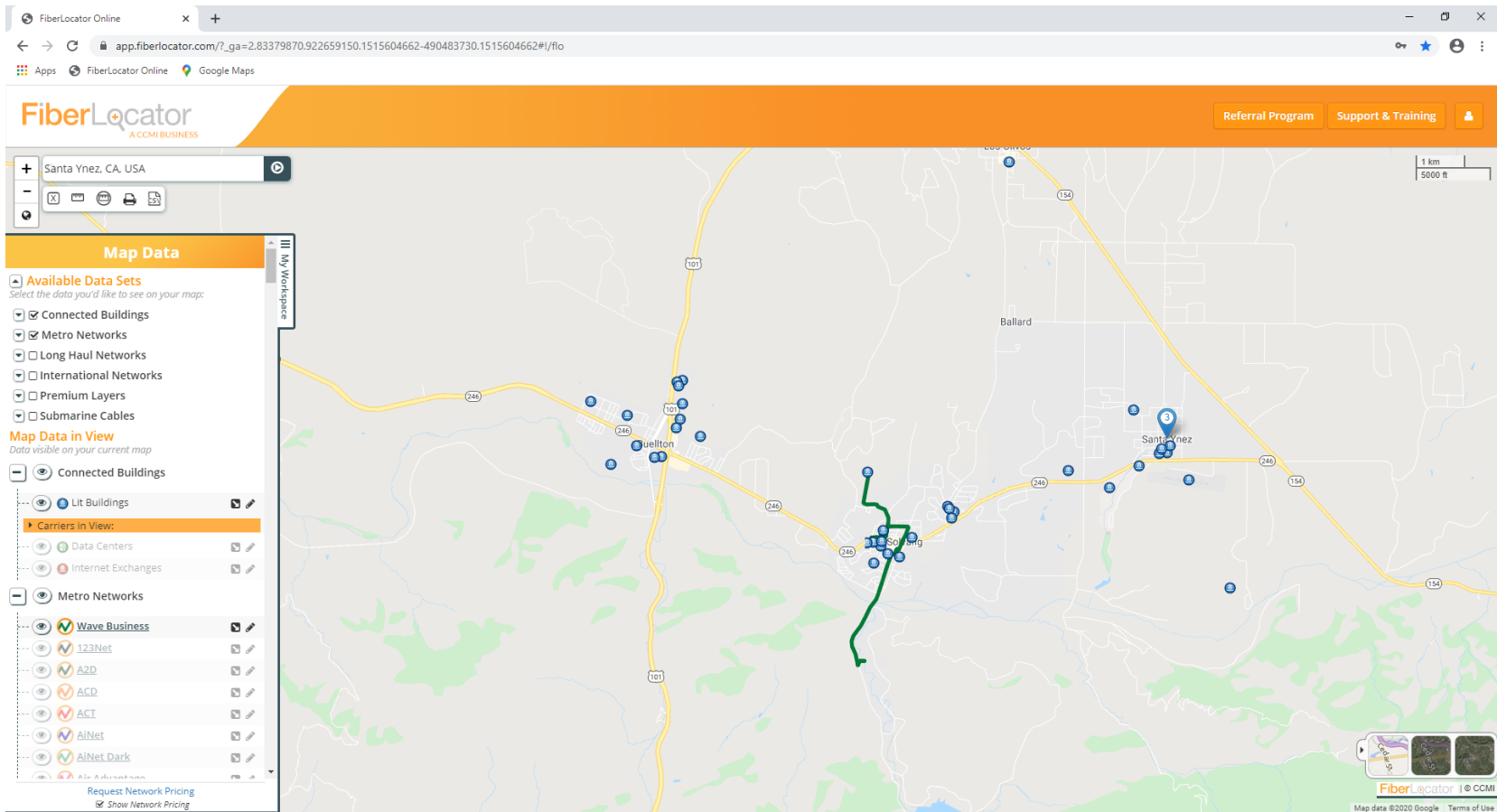
### Lompoc Long Haul



# Broadband Fiber

## Northern Santa Barbara County

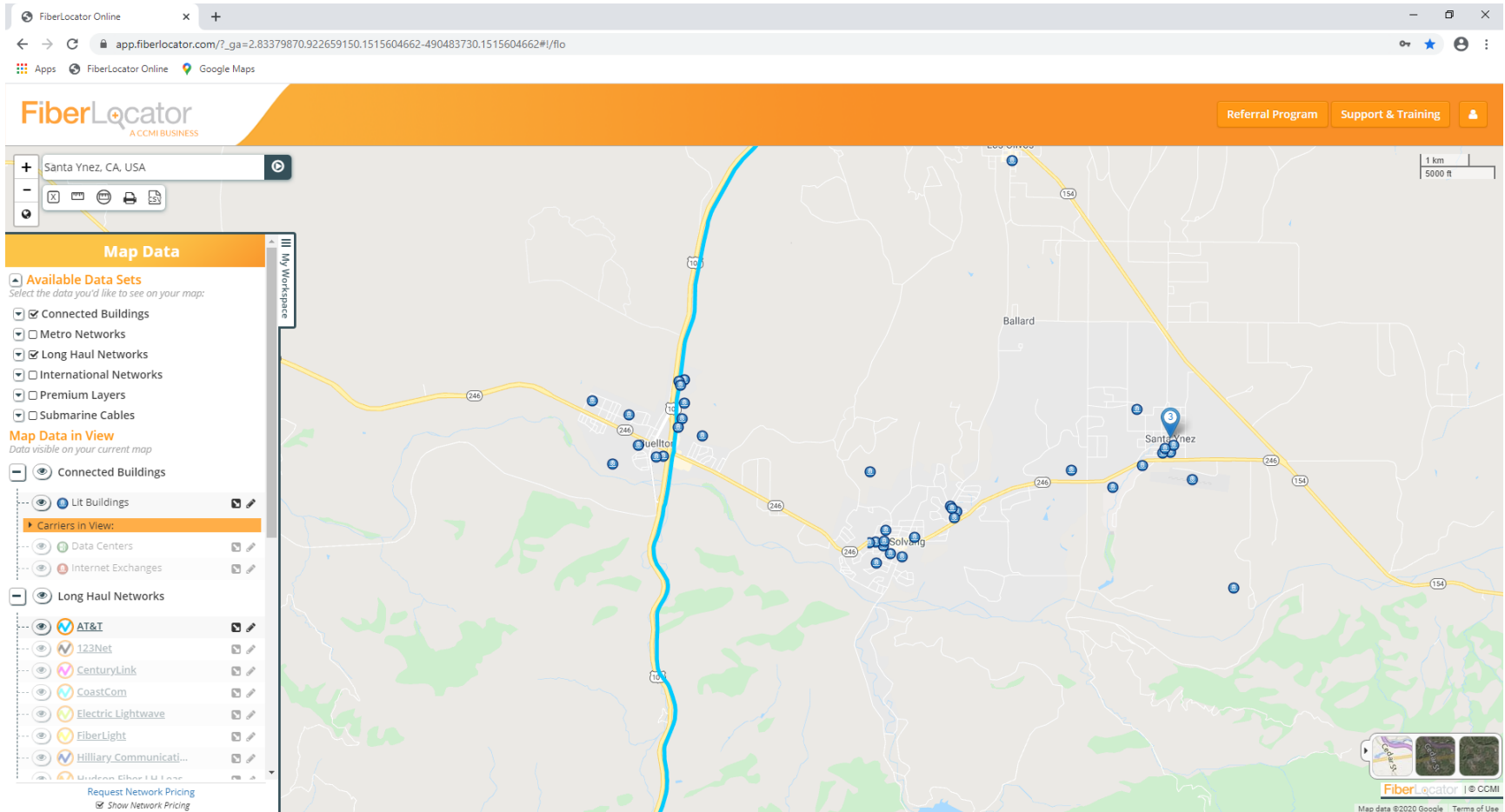
### Santa Ynez Valley Metro



# Broadband Fiber

## Northern Santa Barbara County

### Santa Ynez Valley Long Haul

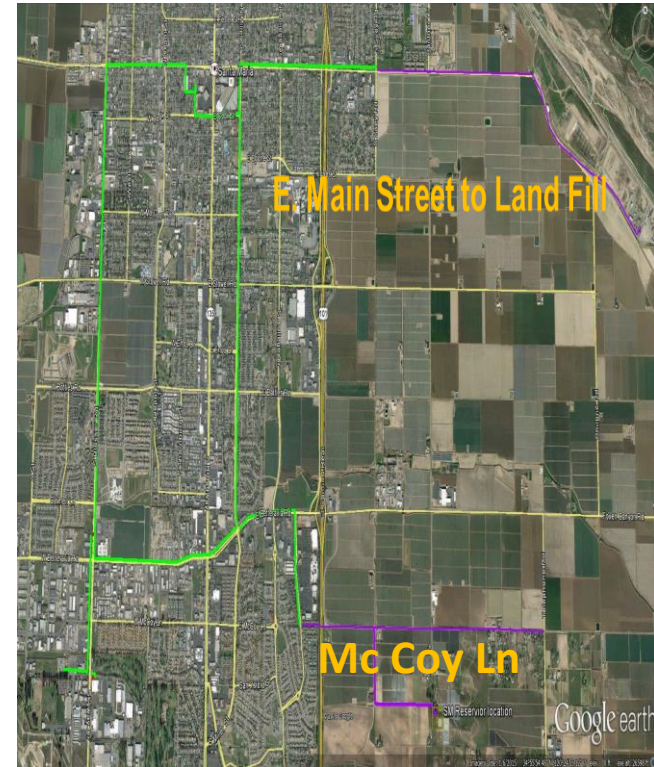




## Santa Maria Fiber Ring: Main Fiber Optics Core Ring



## Santa Maria Fiber Ring: Extensions of Main Core Ring



*\*20 yr Service Swap Agmt City/WAVE Nov 2016, operational late 2018/2019: completion of City conduit, with strands dedicated to City and 20 yr commercial strands for WAVE, 5Gbps to City to start, +5Gbps over next 5 yrs*



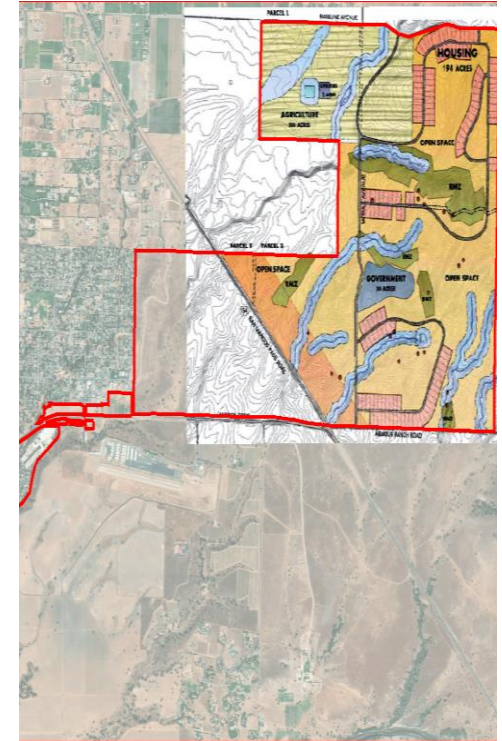


# NSBC Broadband Opportunities: Projects in Development

# Chumash Broadband Opportunities

## Chumash Broadband Grant Opportunities

- USDOJ broadband strategy grant awarded Chumash Sept 2020 will
  - identify Tribal broadband needs, assets, institutions, enhancement options
  - contribute to development of NSBC Fiber Ring Network w/EconAlliance & Consortium
- State broadband funding available to tribes
- Additional tribal broadband funding (CA Public Utilities Commission-CPUC) available through Federal agencies for leverage of Ring
- Nat'l Telecommunications Infrastructure Admin (NTIA) broadband funding



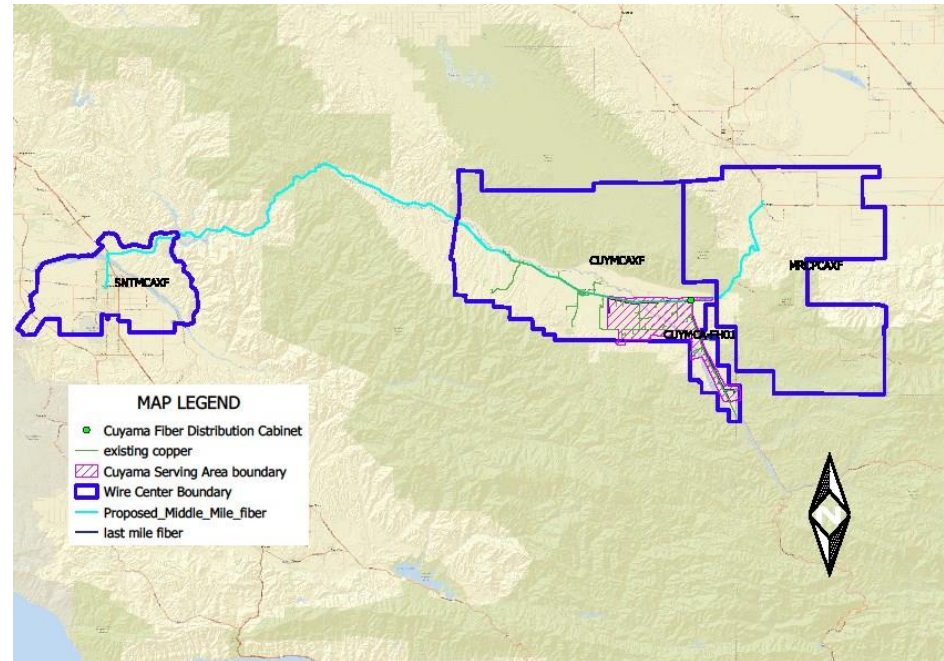
*Chumash traditional & new lands to be connected with broadband*

# Frontier: Maricopa, Cuyama, Santa Maria Orcutt Mid-Mile FTTP Project

## Frontier Project for State Funding: Maricopa-Cuyama to Santa Maria to Orcutt

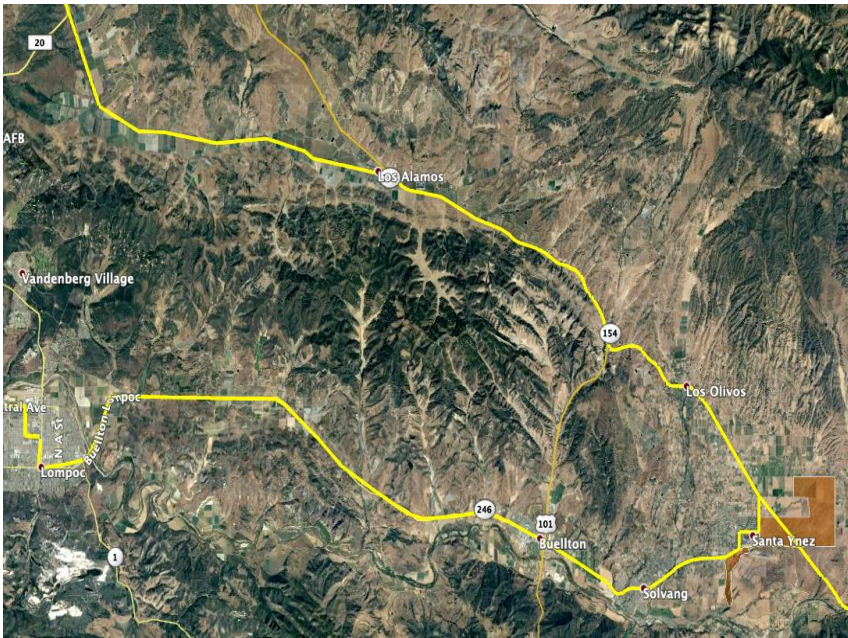
- Frontier \$12,462,755 100% fiber grant application to CA Advanced Svcs Fund (CASF) – 8% aerial, 92% buried
- 82 mi middle mile project Maricopa Cuyama – Santa Maria – Orcutt
- 34 last mile-Cuyama households and key institutions

## Frontier CA, Inc: Project App for California State Funding



# Conceptual Project to Connect Lompoc to Santa Ynez Valley

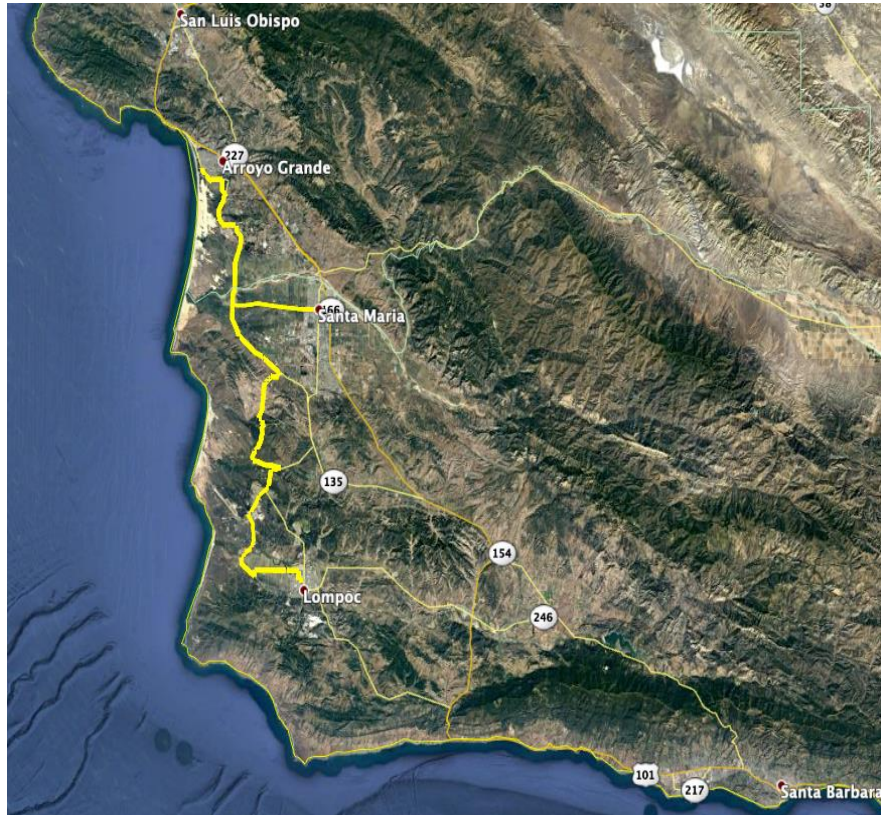
## Santa Ynez Valley Route being Proposed by Digital West



- Would connect several business communities
- Service to Lompoc/Buellton wine/brew and manufacturing sites
- Would connect some NSBC wine/tourism asset areas, e.g. Santa Rita Hills, Los Olivos and Santa Ynez CDPs
- Connects Solvang Danish Village, key tourism, wine industry asset



# Potential Linkage to the North



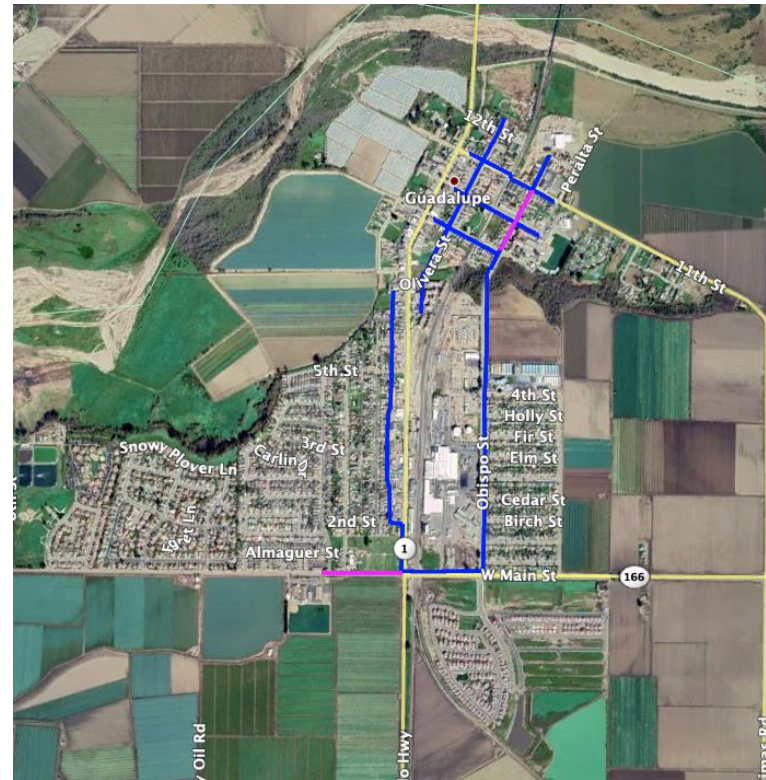
## Digital West-Proposed Middle Mile from San Luis Obispo Co to Lompoc in No Santa Barbara Co

- Would provide NSBC linkage north
- Provides redundancy
- Address Main Street ag assets
- Enables Guadalupe backbone
- Brings b/b to edge of VAFB to service comm'l contractors

# Addressing Key Underserved Area: Guadalupe

## Digital West-Proposed FTTP Backbone for Guadalupe

- Key poverty/Opportunity Zone area
- Key farming industry asset
- Hwy 1 community asset
- Direct highway linkage to undersea cable ports

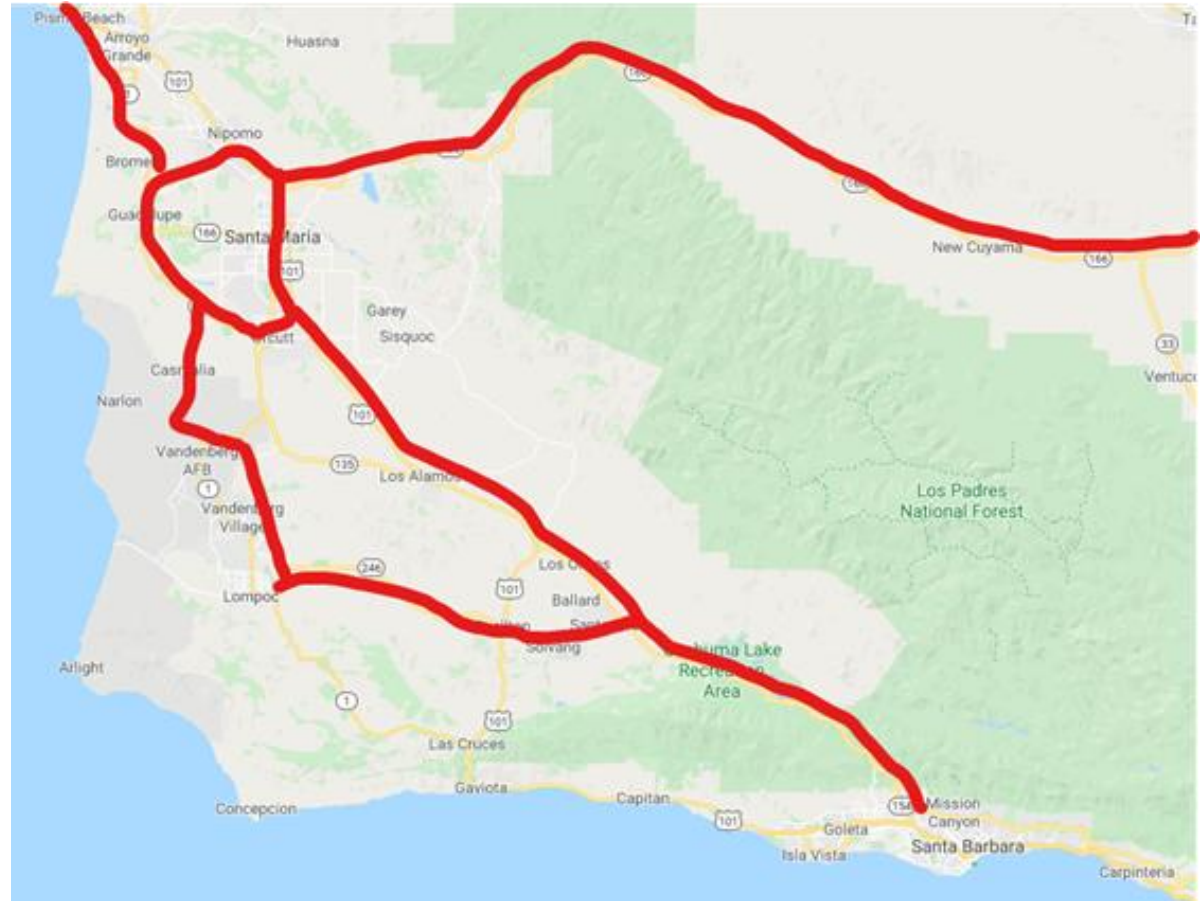




# NSBC Broadband Concept

# Northern Santa Barbara County Fiber Ring Network

***Notional image of the EconAlliance-conceived Northern Santa Barbara County Fiber Ring Network, a “middle mile” broadband enhancement concept addressing numerous issues, providing numerous benefits***





# NSBC Fiber Ring Network: A Concept with Numerous Benefits

## NSBC Fiber Ring Will Address

- NSBC existing coverage, capacity issues
- New coverage/capacity needs from COVID-19(industry, commercial, workforce development, telecommuting and emergency)
- Reliability, redundancy gaps
- Linkage of key industry and commercial assets with anchor institutions, key jurisdictional sites
- Lack of east/west, north/south NSBC broadband linkage
- Improvement in SBCo's "D" broadband grade





# Fiber Ring Alignment w/ Economic Development Benefits

# NSBC Fiber Ring Concept: Key Opportunies/ Benefits

- ❑ Key economic development opportunities, benefits
  - Links tribal businesses, b/b assets to communities, industries, Chumash workers, new Chumash NSBC business opportunities
  - Leverages Vandenberg's \$billion+ commercial space opportunity
  - Supports Santa Maria Airport 740-acre comm'l development
  - Provides necessary infrastructure to leverage Opportunity Zones

# NSBC Fiber Ring Concept: Additional Econ Dev Benefits

- ❑ Add'l economic development opportunities, benefits
  - Supports global trade, exporting
  - Supports globally-competitive entrepreneurship
  - Provides greater fiber backbone access to NSBC industrial areas, business districts, and tourism attractions
  - Supports innovation/entrepreneurship, industry competitiveness
  - Supports economic development attraction to high-tech firms
  - Brings broadband nearer workforce development providers

# Broadband Concept: Other No Santa Barbara Co Benefits

- ☐ Leverages existing and conceptualized project efforts
- ☐ Fosters private/public investment in more broadband infrastructure
- ☐ Provides greater access to fiber for:
  - Three area hospitals
  - Emergency centers
  - County and city centers, community centers
  - Rural areas
- ☐ Lays foundation for transition to SMART cities



# Fiber Ring Funding & Success Factors



# NSBC Broadband Concept: Potential Funding

- ❑ NSBC Fiber Ring Network stakeholders have/can identify, consider, and pursue a variety of funding sources for design, engineering, construction, e.g.
  - USDOC/EDA Public Works funding (Strategy, D/E, construction)
  - USDA Re-Connect (construction)
  - USDOJ tribal funding
  - CASF state funding
  - US Dept. Housing & Urban Development
  - Nat'l Telecomm & Infra Admin
  - Others to be identified



# Broadband Concept: Key Success Factors

- ❑ Obtain Strategy and follow-on Design/Engineering funding (estimated or capped costs, providing incentive for providers, public officials to share data, negotiate fiber leases, easements, ownership rights, etc.)
  - Many grantors require complete D/E before funding construction
  - D/E funding incentivizes providers to share asset information
    - Enables consideration of all/most options while routing developed
  - D/E Cost (for ~105 mile NSBC Fiber Ring Network, leveraging existing assets, Capital Improvement Plans, CalTrans, project infrastructure in development or concept, other opportunities - excludes SM-Cuyama leg as Frontier project expected to be funded)
    - Very rough “ballpark” cost estimates received for buildable D/E (funded project needed to confirm buildable D&E costs):
      - Rough estimate #1- D/E cost - \$756,000 (\$7,500/mile)
      - Rough estimate #2 –D/E cost -\$1,627,500 (\$15,500/mi +est’d misc costs, e.g. easements, presentations, etc. )
      - Rough estimate #3– D/E cost - \$3,880,800 (\$36,900/mi)