Taft community broadband planning workshop

2 December 2014

Tellus Venture Associates

1. Introductions
2. Broadband 101
3. Taft/Maricopa broadband assessment
4. Questions
5. Discussion: local needs and resources
6. Discussion: next steps
7. Close

Agenda

Taft, 2 December 2014

Broadband 101

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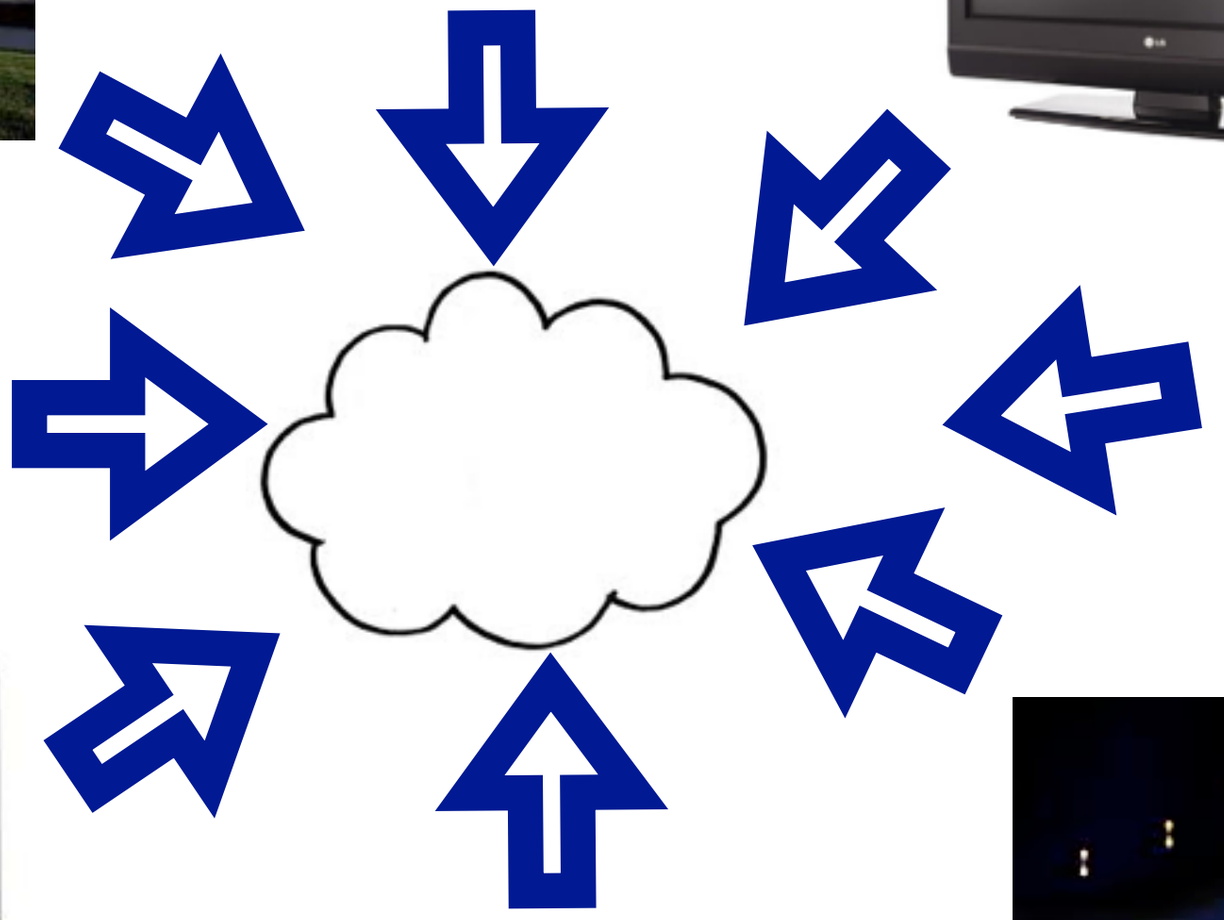
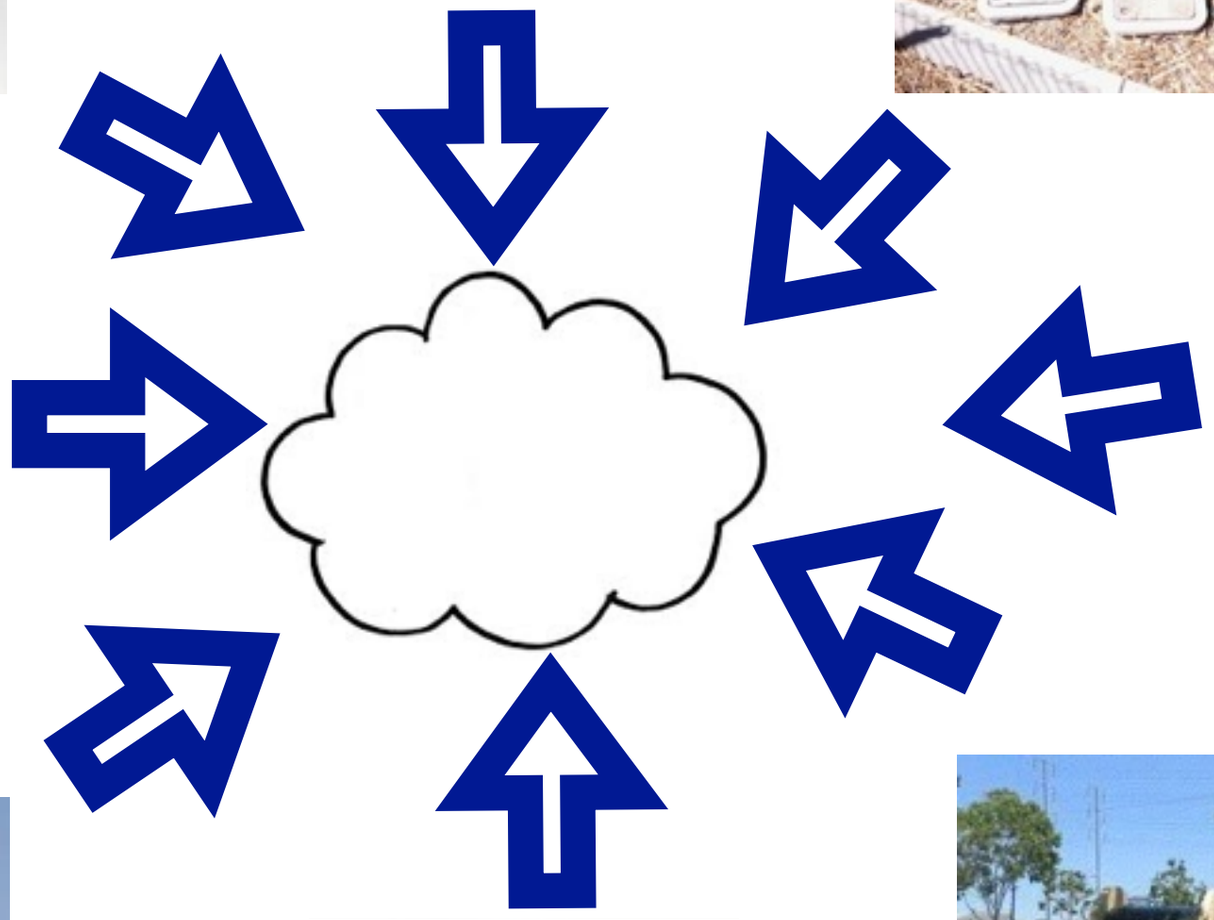
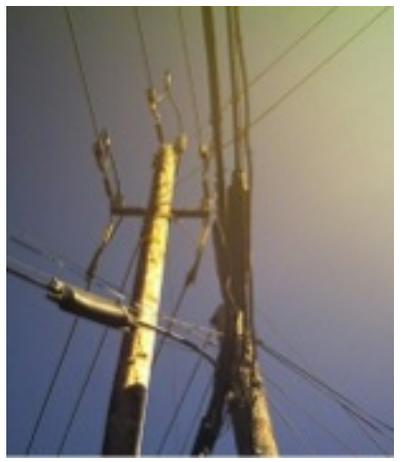


Broadband is a digital connection

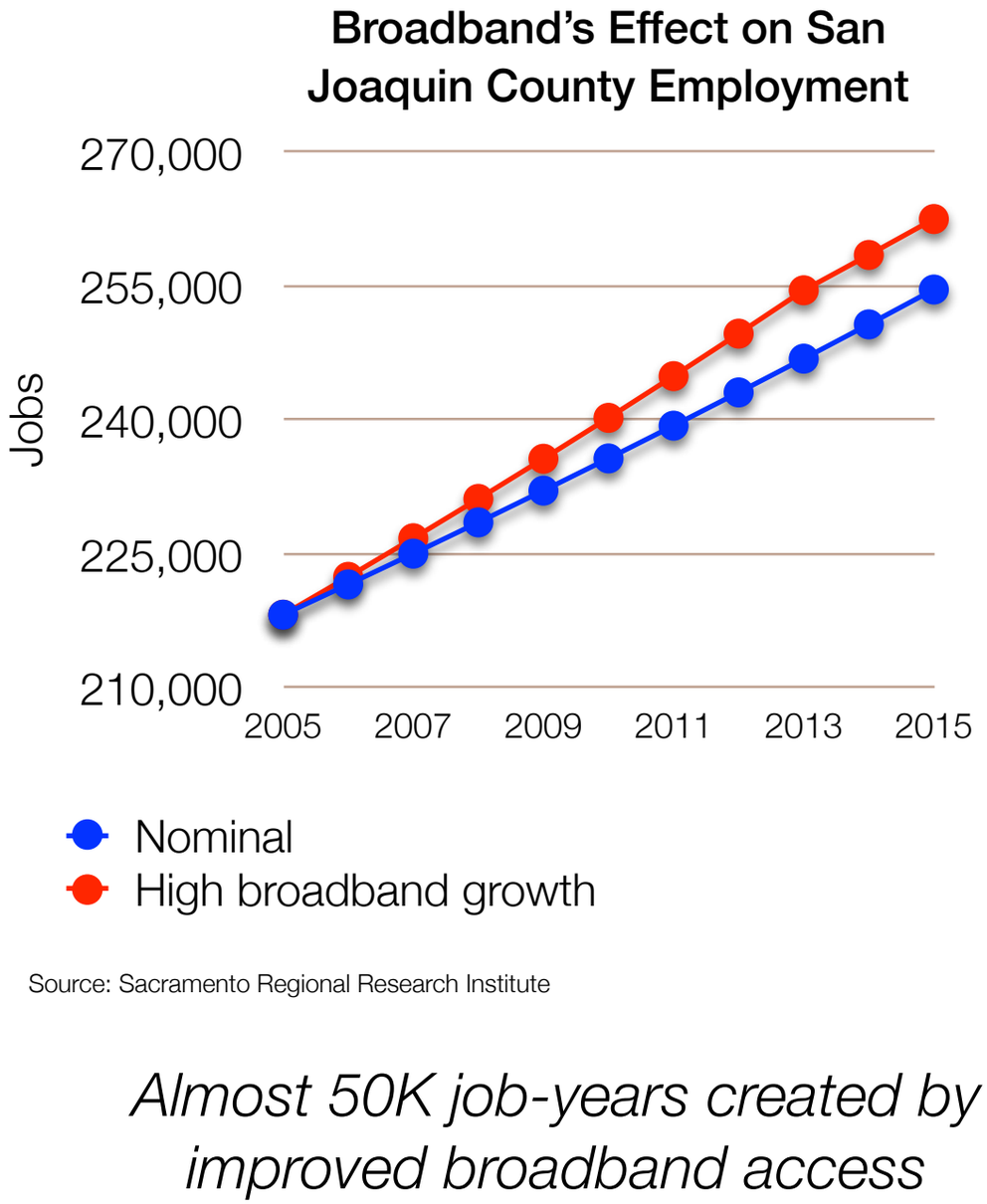
Delivers TV, telephone, Internet, internal connectivity





Broadband is digging and rigging

It’s not rocket science



Source: Sacramento Regional Research Institute

Almost 50K job-years created by improved broadband access

Top U.S. Cities
Average Measured Connection Speed

Rank	City	2Q11 Ave. Mbps
1	San Jose, CA	13.7
2	Fredericksburg, VA	8.5
3	Monterey Park, CA	8.2
4	Fremont, CA	8.2
5	Staten Island, NY	7.6
6	Columbia, MD	7.5
7	Jersey City, NJ	7.5
8	Riverside, CA	7.5
9	Oakland, CA	7.5
10	Fairfield, CA	7.3

Source: Akamai

Broadband is economic development

Bandwidth is a basic requirement for business location decisions

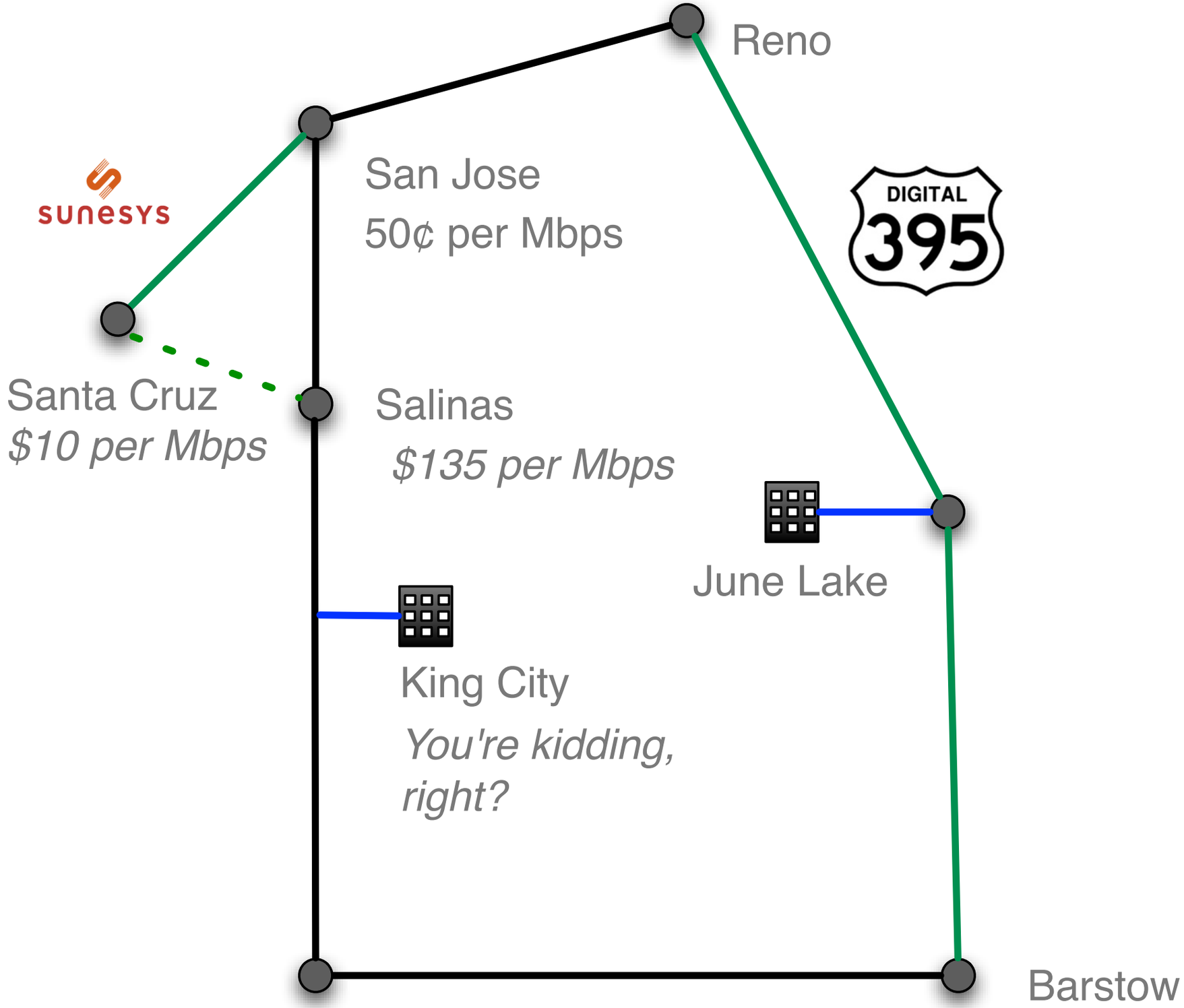
{Geek}

is the new

Sexy

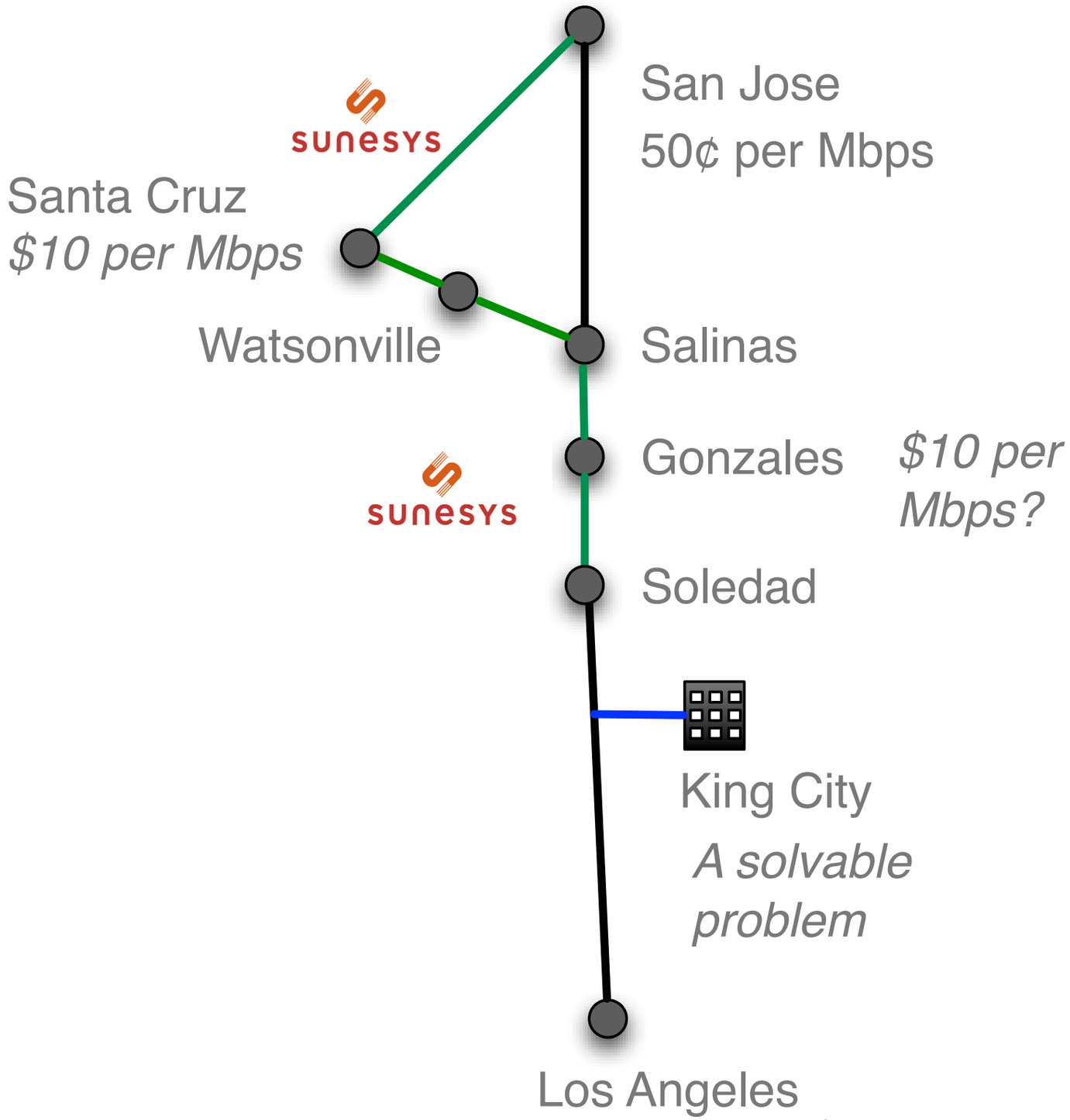
A tale of two cities

San Leandro & King City



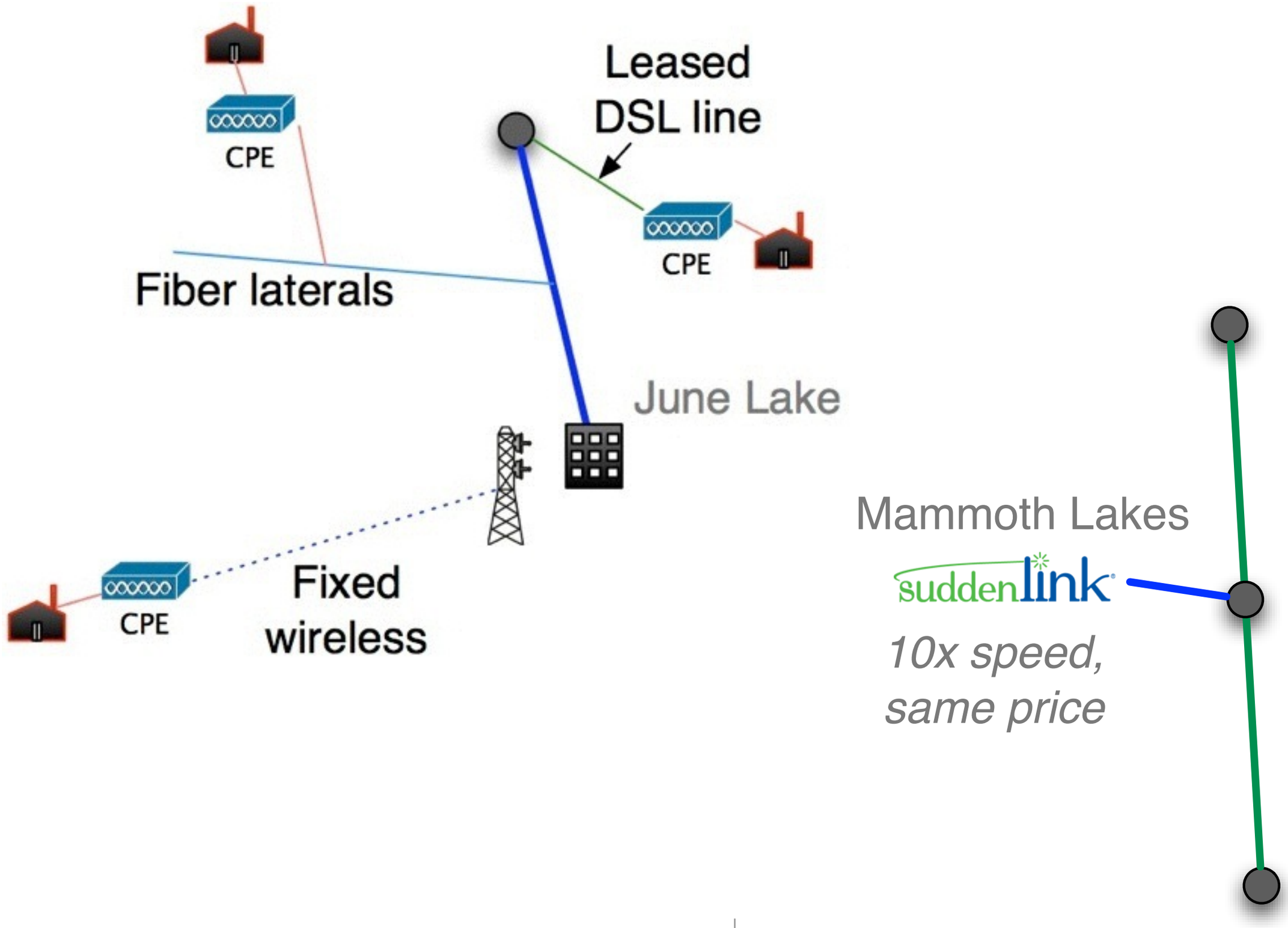
It begins with the middle mile

Distance & location matter



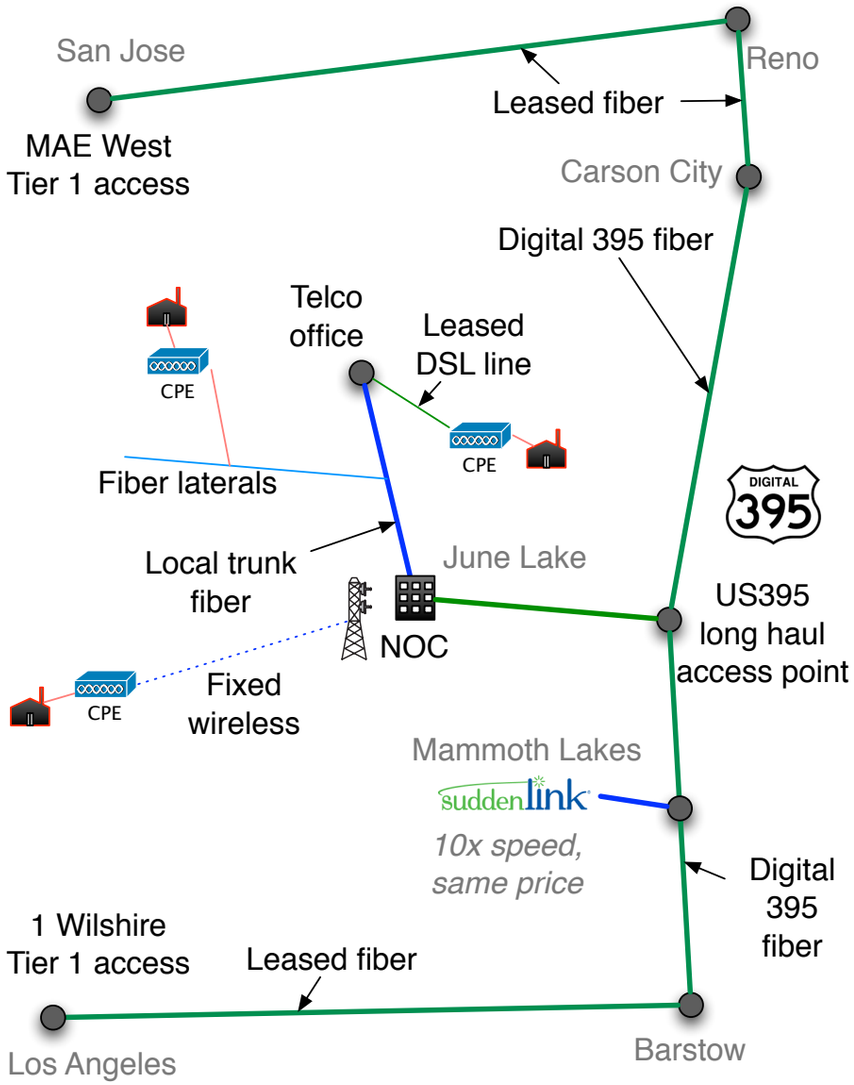
Accessible middle mile fiber lowers costs

Otherwise, you're at the mercy of Comcast, Charter, AT&T



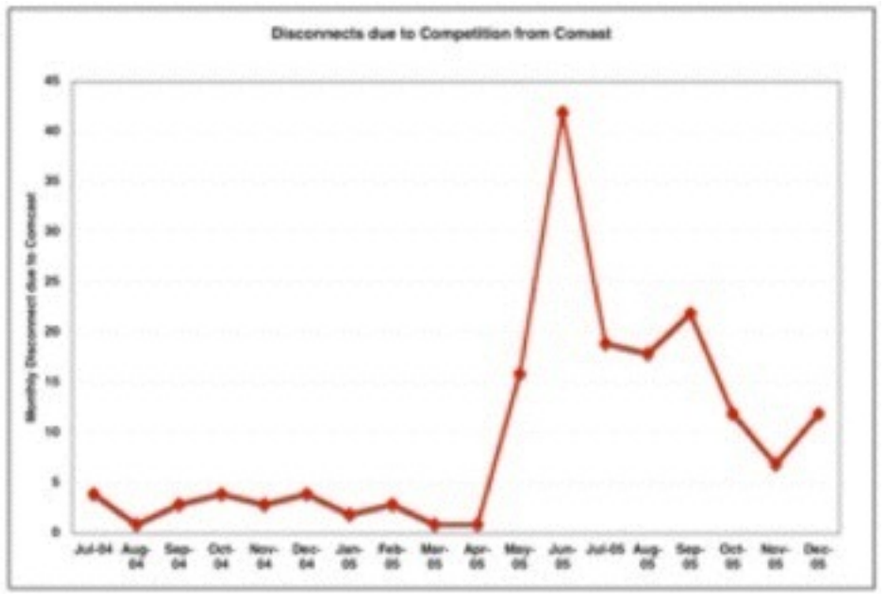
Last mile determined by cost & value of customer

Even when subsidized, ROI might not support capex

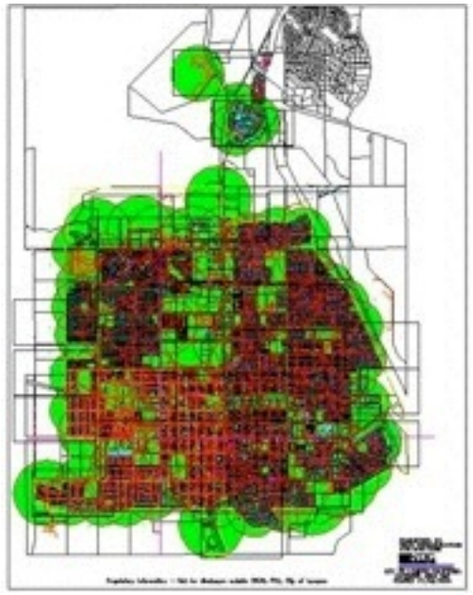


Local ventures can take on incumbents

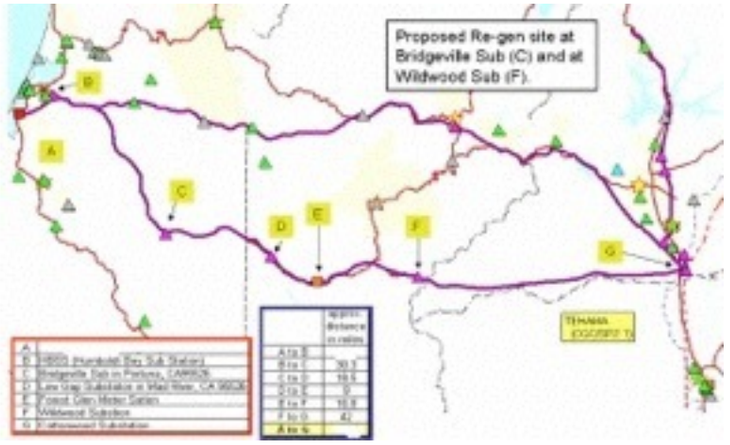
And then the competition shows up...



Cities of San Leandro, Palo Alto, Santa Clara in dark fiber business



City of Lompoc runs a wireless Internet utility



IP Networks, local groups partner on north coast fiber build

Cities of Benicia, Brisbane lighting up industrial parks

Chattanooga building fiber to the home, offers Gigabit service

Private communities evaluate, partner on fiber systems

Even so, communities are developing broadband

Willing to invest in infrastructure & partner with private companies

Taft/Maricopa broadband assessment

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Infrastructure

Access

Adoption

Three elements of broadband development

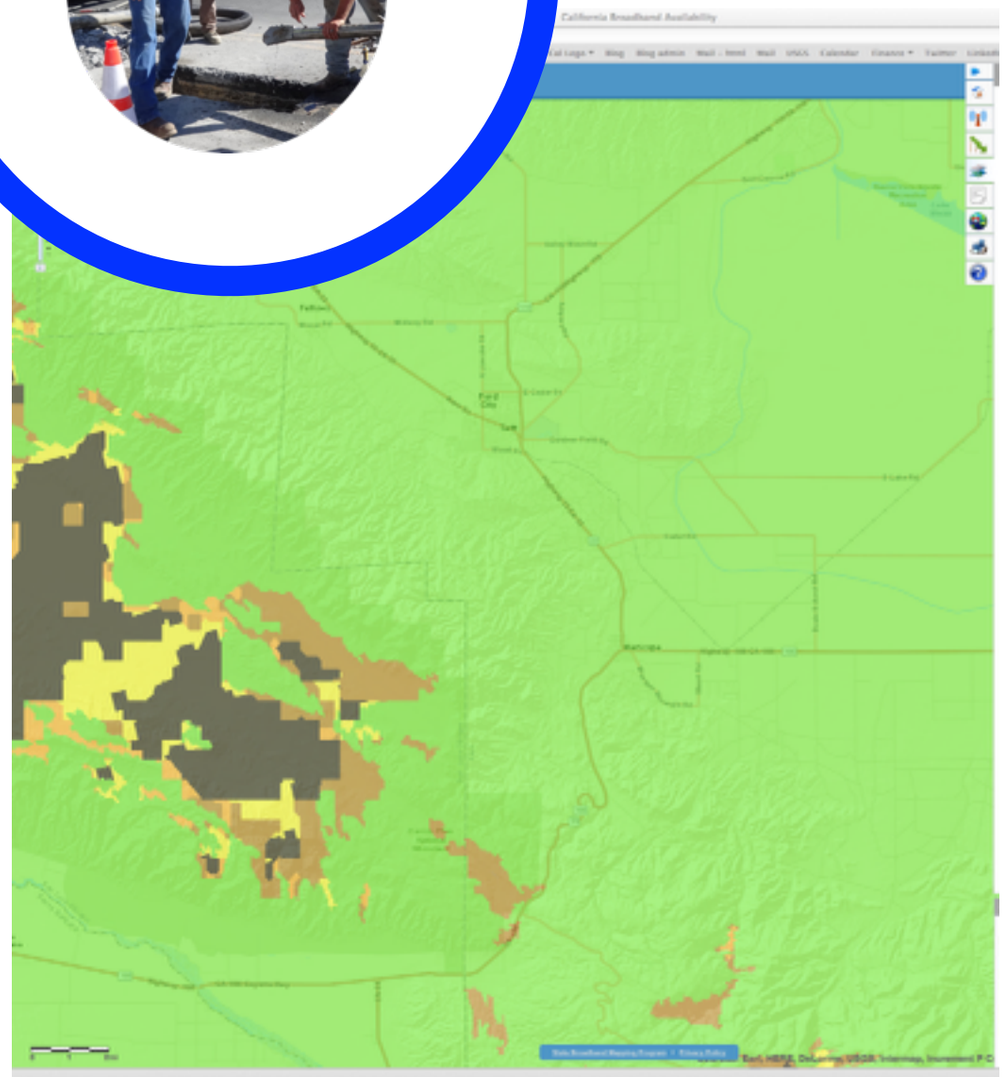
Success comes from community partnerships

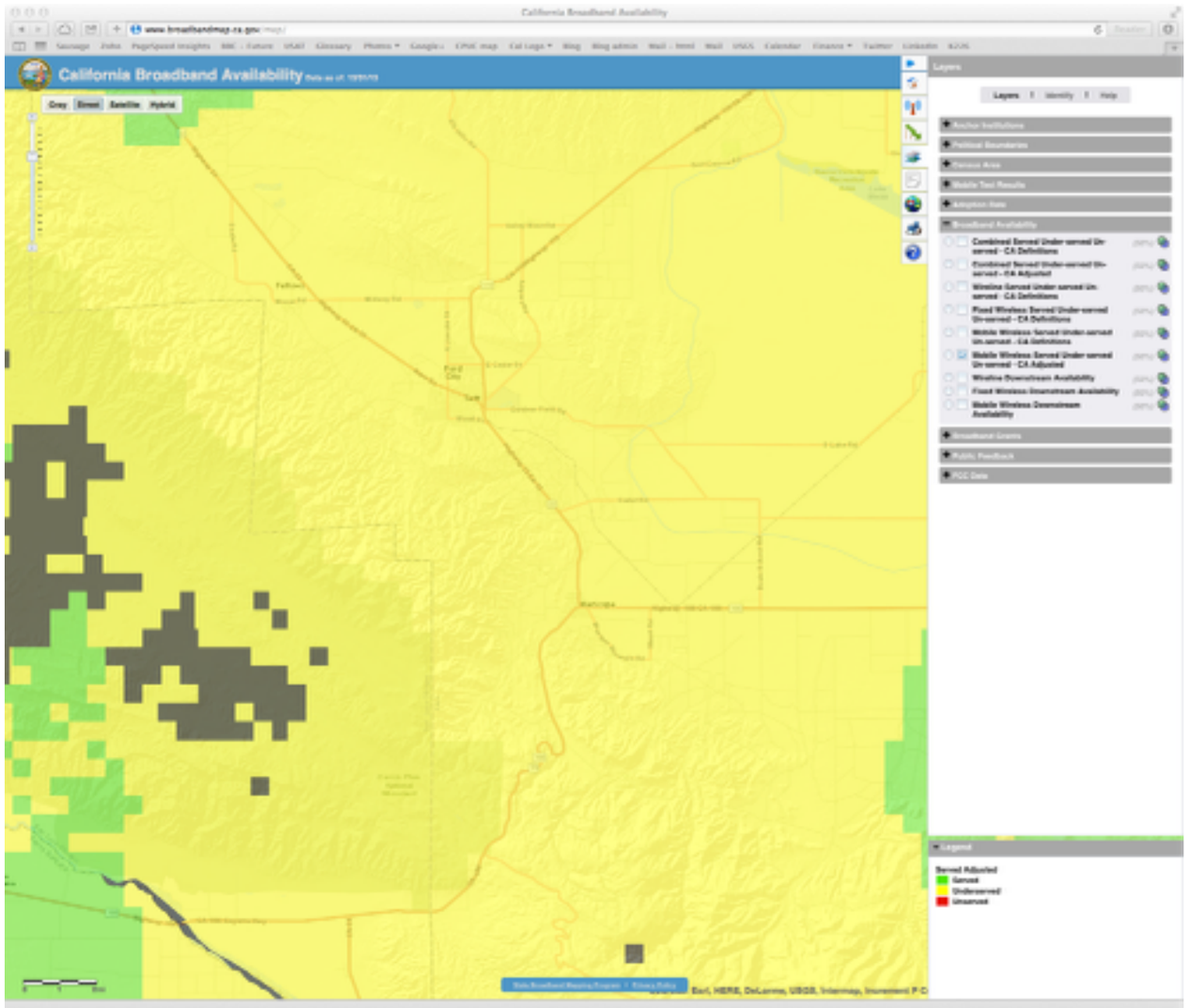
Infrastructure

Middle mile fiber available

Two cables through Taft, one (two?) bypasses Maricopa

Infrastructure

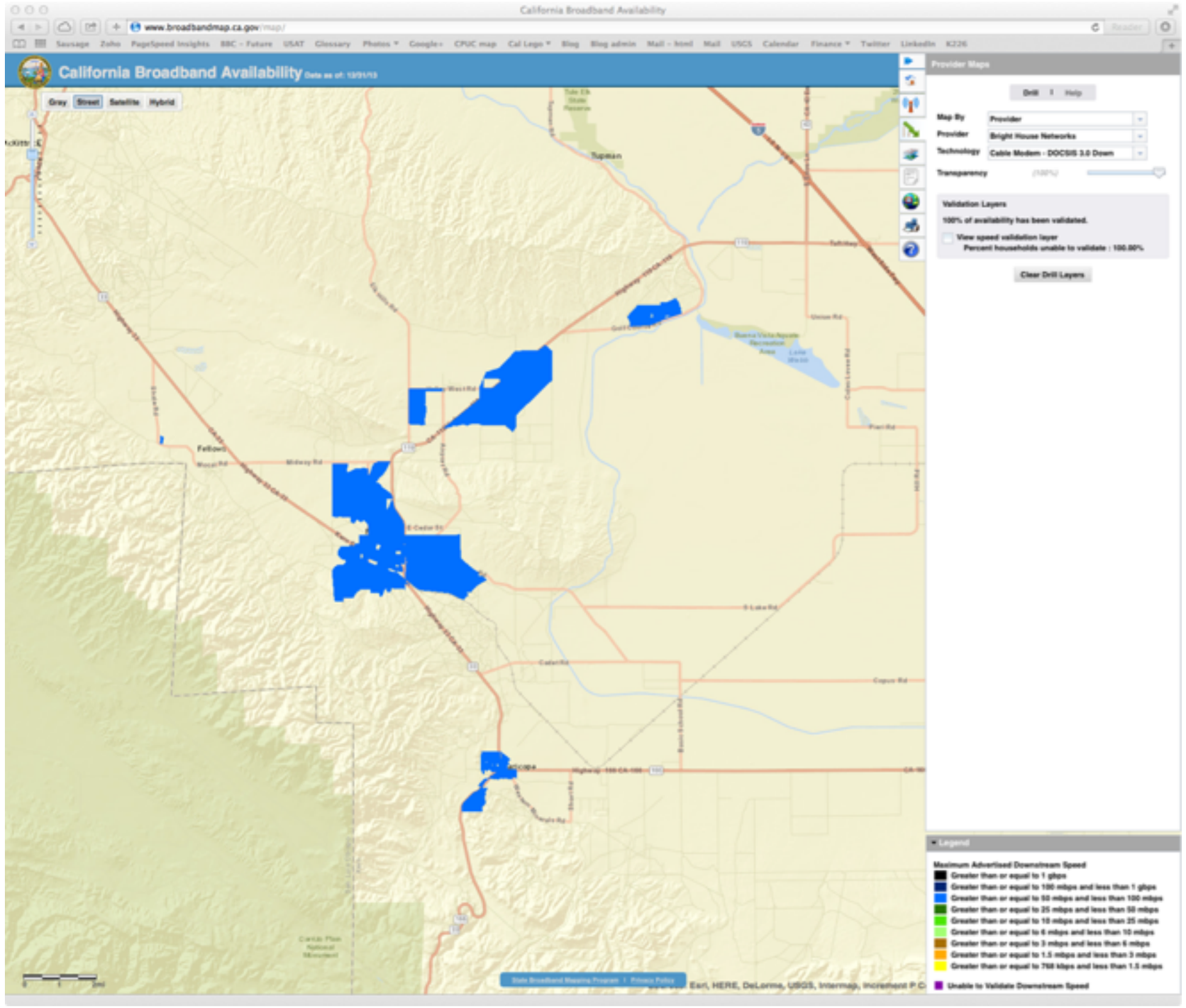




Wireless availability is substandard, overstated

Consistent with typical findings by CPUC in rural California

Infrastructure



Only one wireline provider with limited coverage

Bright House reports seem generally accurate but not validated by CPUC

Infrastructure

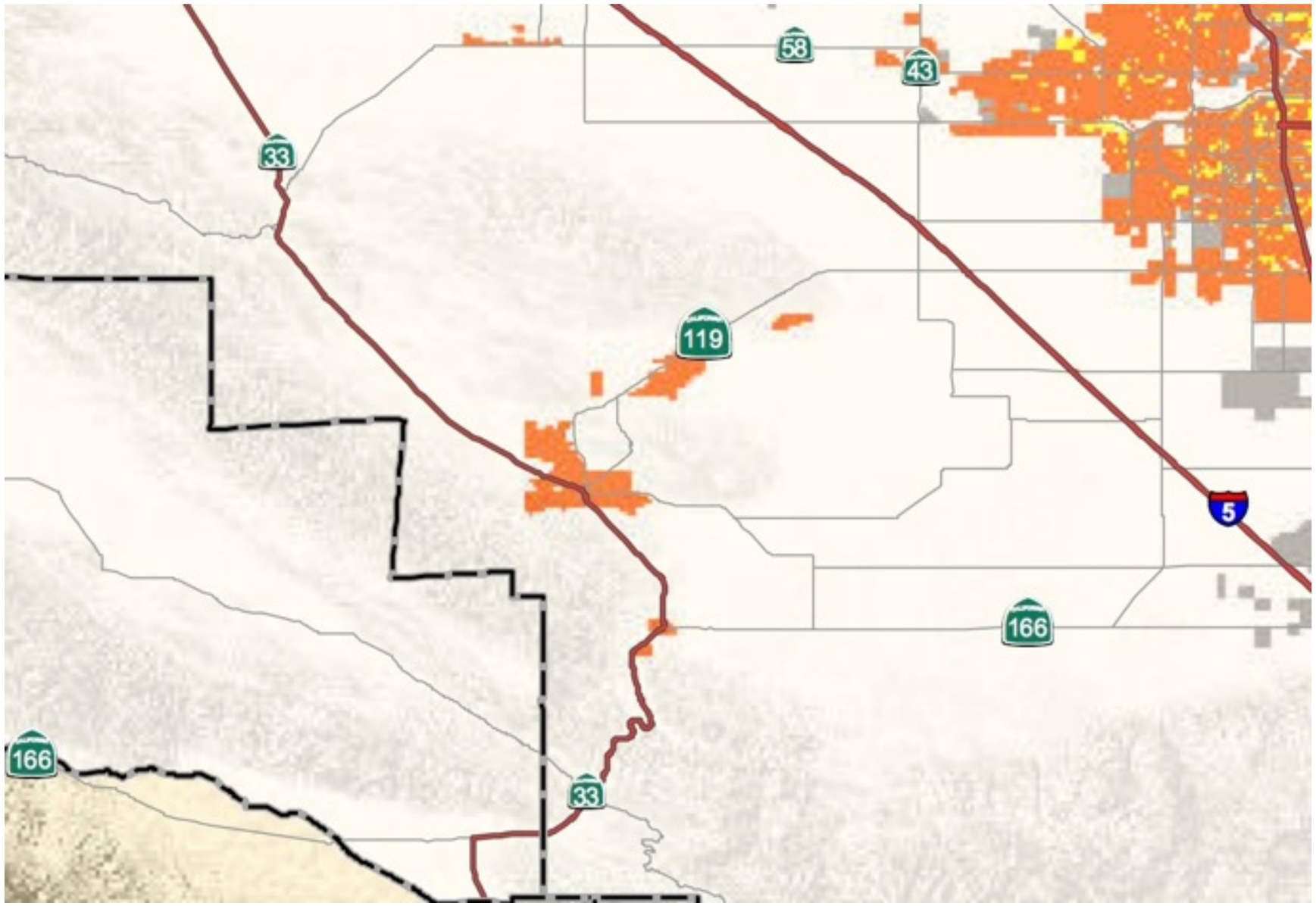
A

B

C

D

F



Infrastructure is “D” & “F” grade

Bright House meets standards, Verizon doesn’t even offer service

Access

- Lowest cost bundle

  $108/mo, 12 months
- Goes up by “$5 to $10”
- $10 Connect2Compete program not offered

Bright House Service Plans

(As of 21 July 2014)

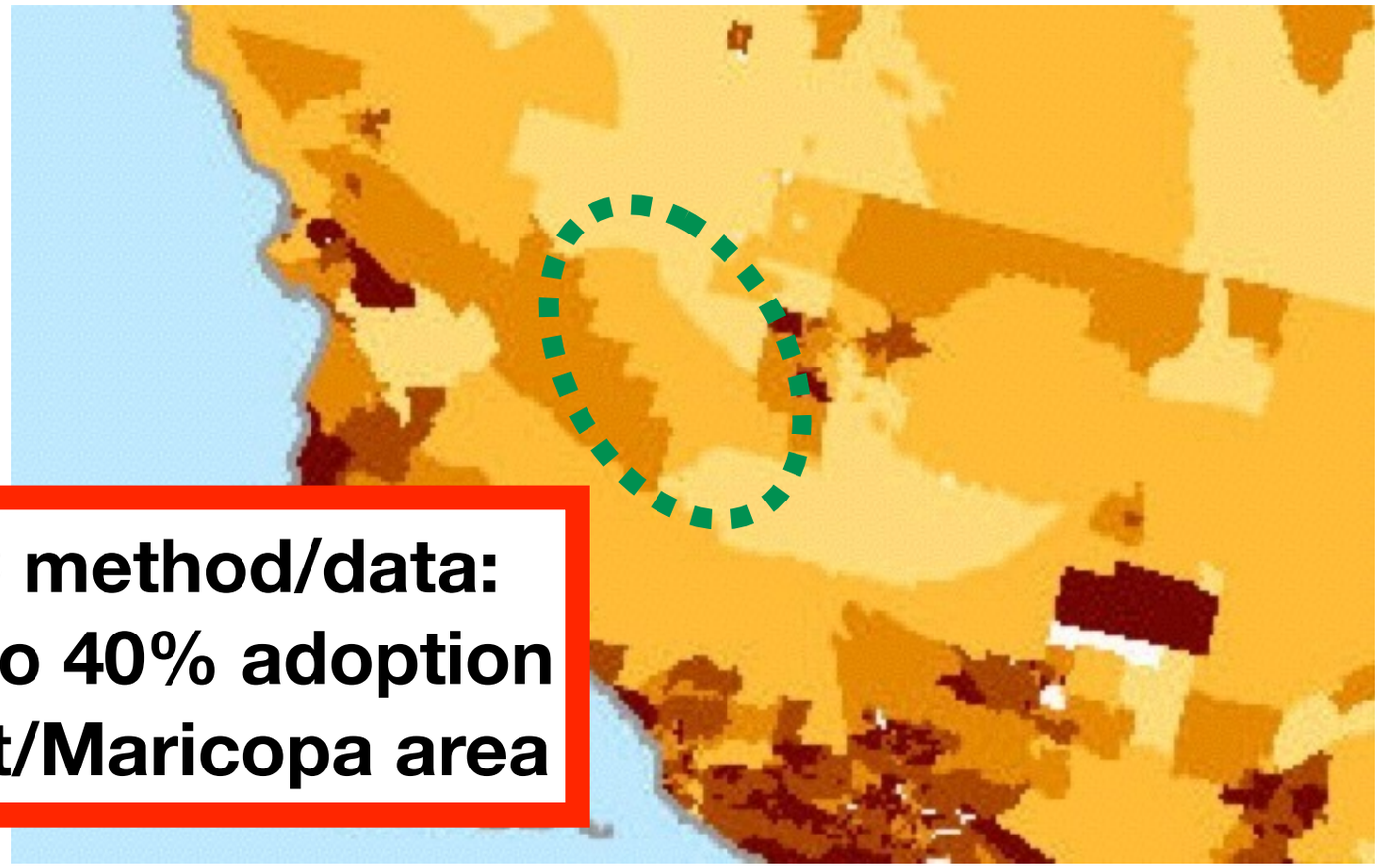
+$10/month modem & WiFi

Download speed	Upload speed	Introductory rate, 1 year	Full price
1 Mbps	512 Kbps	$24.25	$40.00
10 Mbps	1 Mbps	$37.00	$57.00
30 Mbps	2 Mbps	$60.00	$77.00
60 Mbps	5 Mbps	$78.00	$93.00
90 Mbps	10 Mbps	$93.00	$108.00

Bright House pricing consistent with California norms

Cable is not generally a low cost option

Adoption



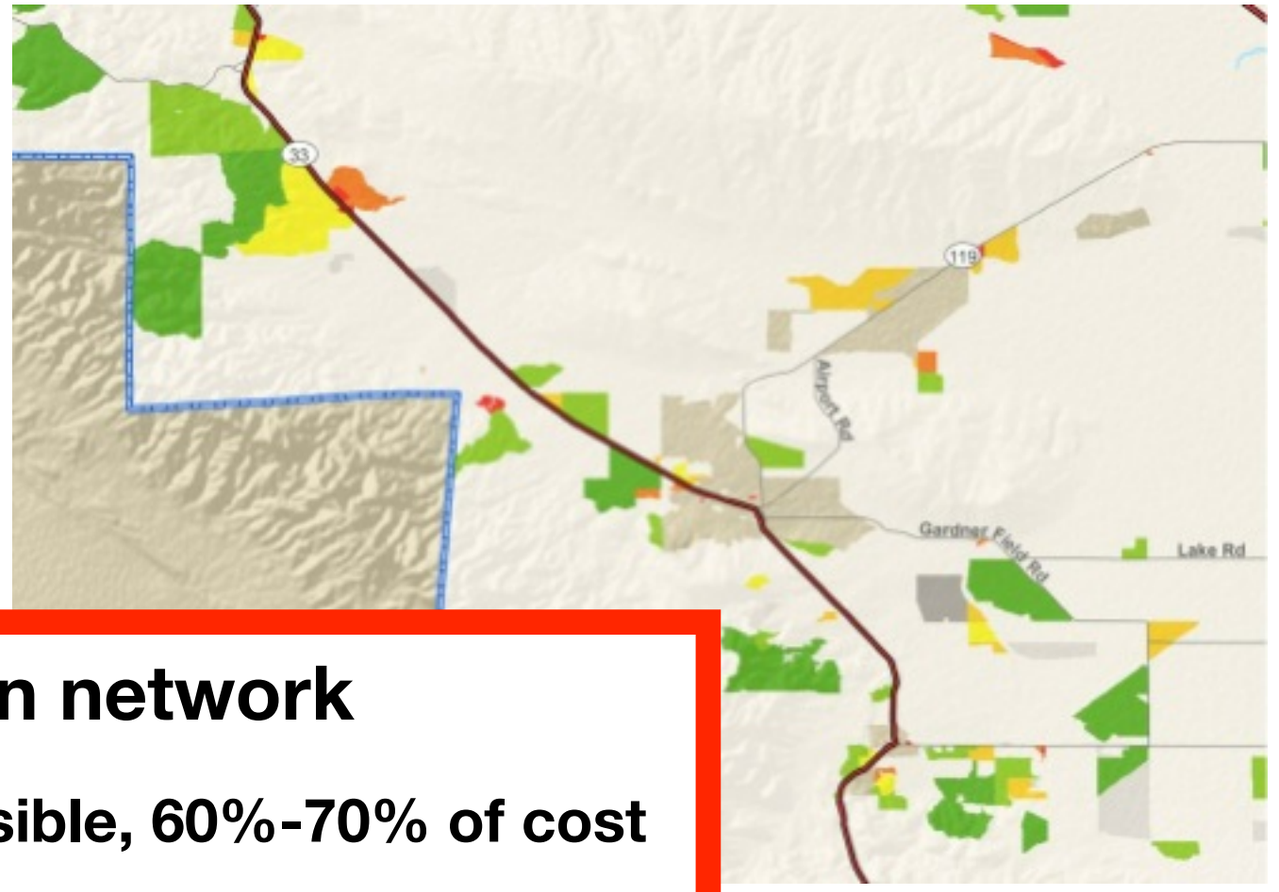
FCC method/data:
20% to 40% adoption in Taft/Maricopa area

CPUC method/data:
61% in Kern County
74% statewide
45% in rural areas

Local broadband penetration rates below average

Consistent with other areas with low infrastructure grades

Infrastructure



- **Upgrade Verizon network**
  - **CASF grant possible, 60%-70% of cost**
- **Recruit a CLEC**
- **Evaluate local policies, assets**
- **Community networks**
  - **Consumer, e.g. Loma Linda, Brentwood**
  - **Business, e.g. San Leandro, Watsonville**

Options

Consider combining federal, state, local financing

Access

- **Work with Bright House to implement Connect2Compete**
- **Participate in Open Internet, Comcast merger, Copper transition proceeds at FCC, CPUC**
- **Leverage grants & local budgets**
  - **E-rate, Telemedicine, Public Safety**
- **Pursue CPUC public housing grants**

Options

Working together, local communities have clout

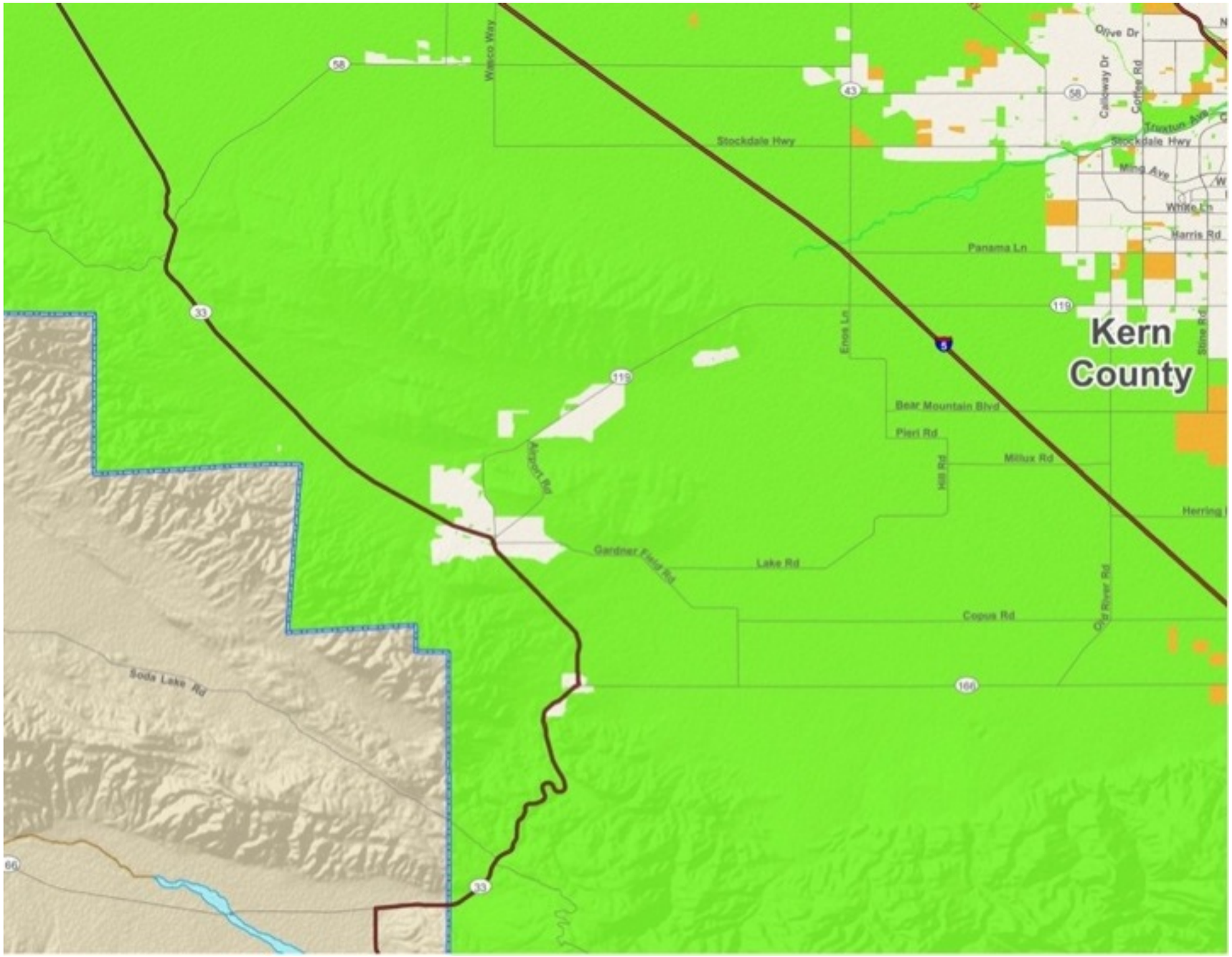
Adoption

GETCONNECTED!
Your Life Made Easier

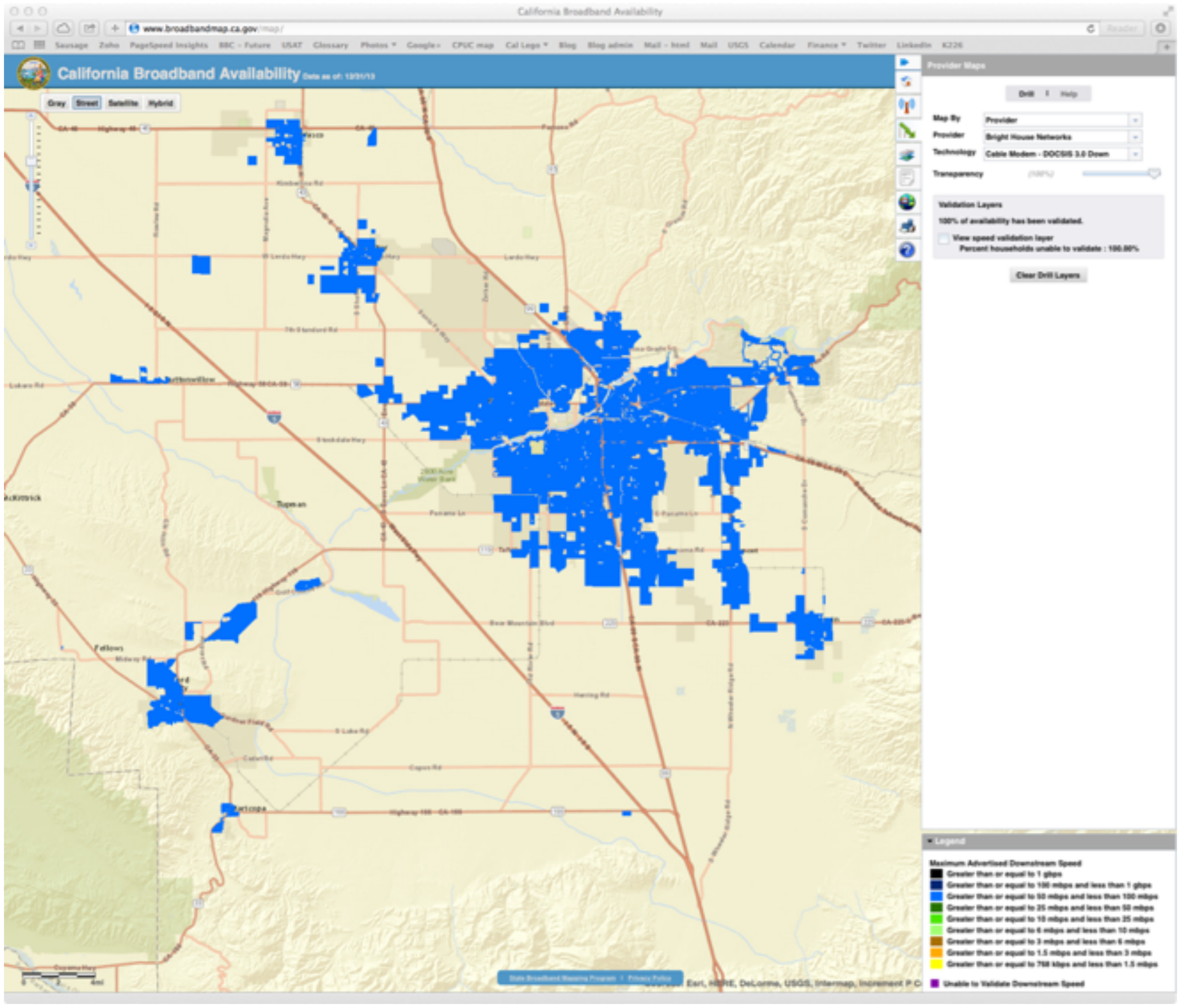
- **Community-based programs –**
  - **Oakland Technology Exchange West**
  - **Loaves, Fishes, Computers - Salinas**
- **CPUC consortia program**
- **CPUC public housing program**
- **CETF *Get Connected* program**

Options

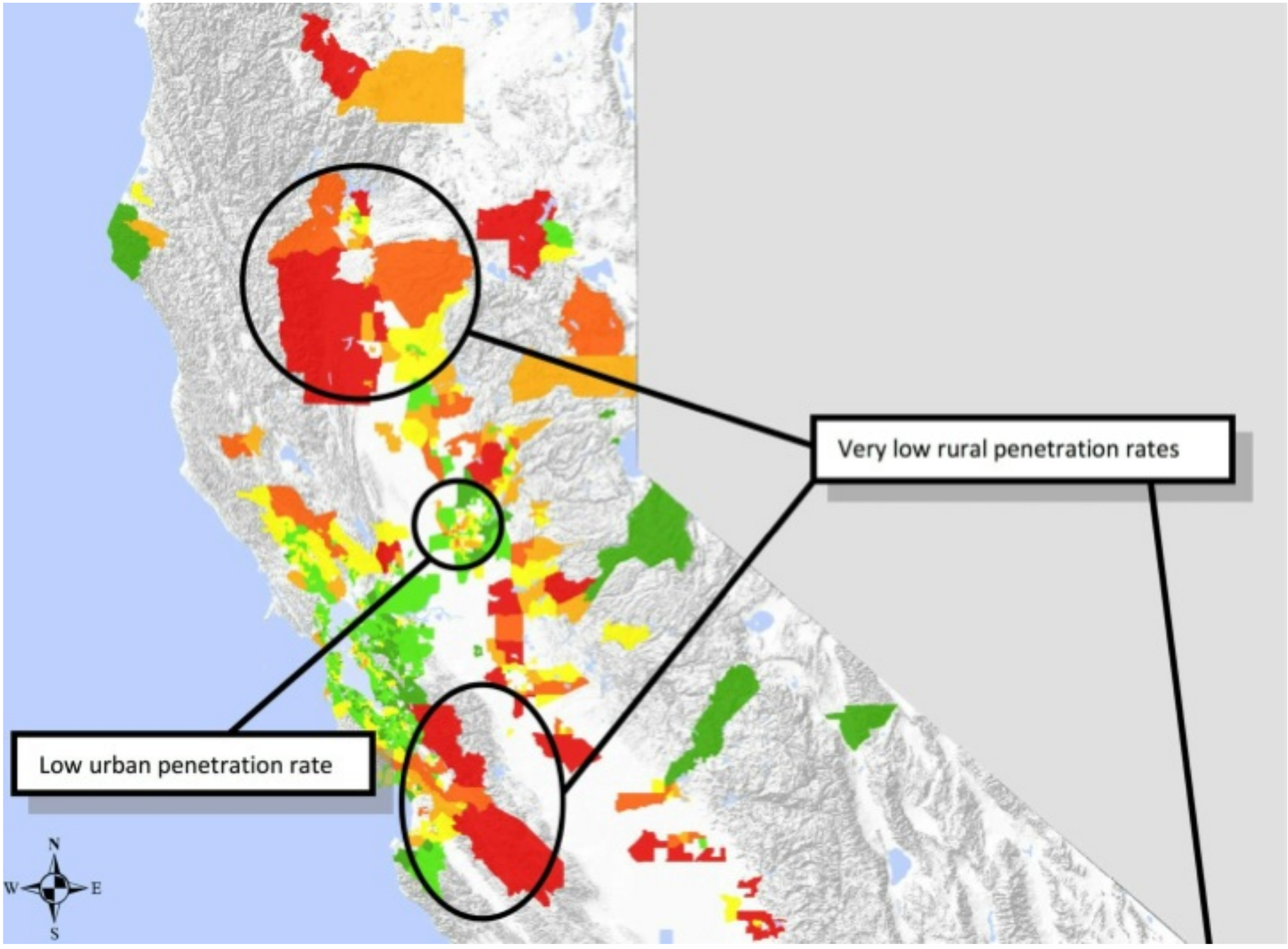
Active, enthusiastic involvement of service providers is essential



Questions?



Local needs & resources?



Next steps?

Back-up slides

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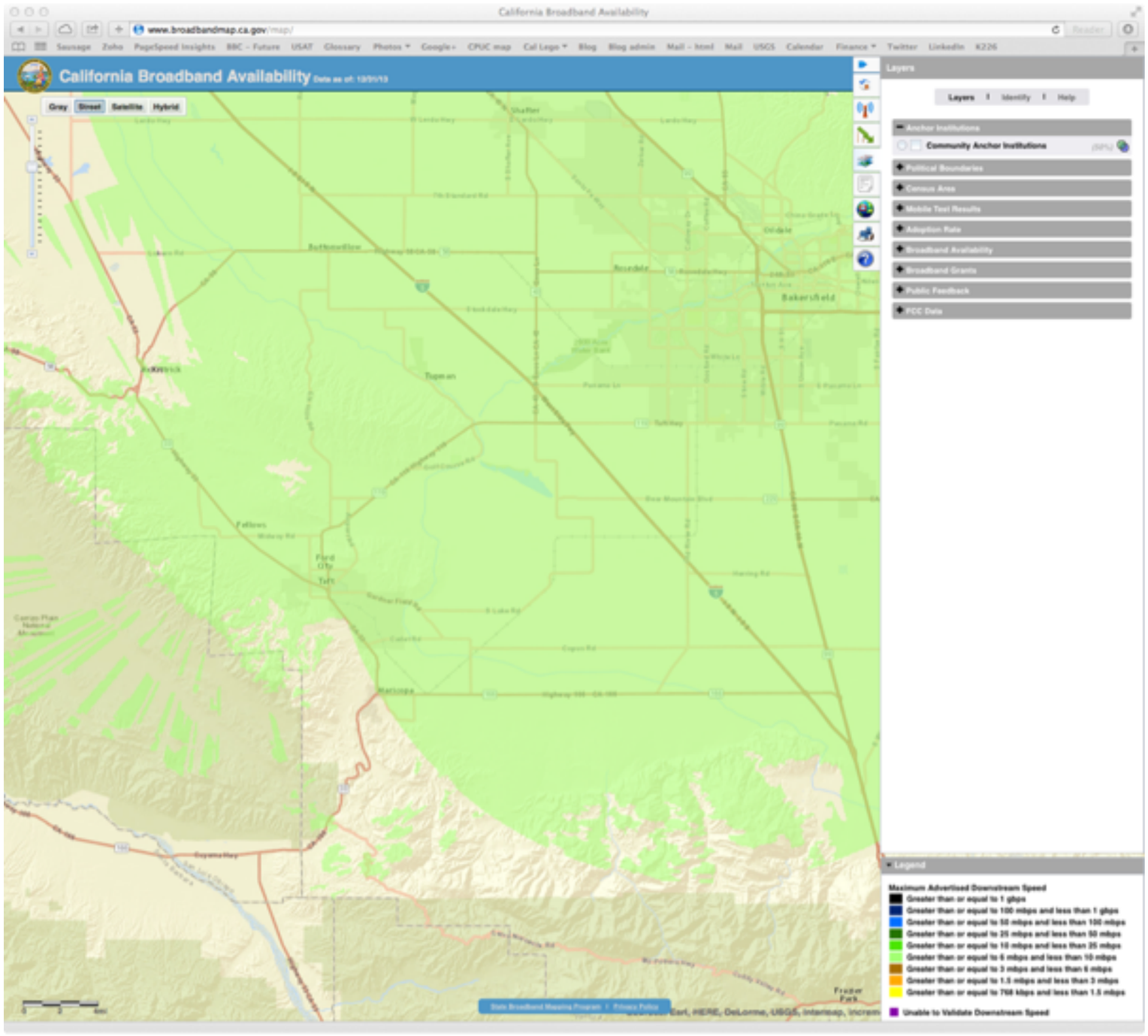
Infrastructure



Fixed wireless is overstated and expensive

Costs $350 per month to meet minimum CPUC standard

Grading wired broadband infrastructure

A Astound (or Sonic) and/or Comcast and/or AT&T offering their best levels of service.

B Comcast Xfinity cable modem service and mid-level AT&T Uverse DSL.

C AT&T DSL and Comcast cable modem service.

D Only one provider, e.g. AT&T or Comcast or Winters Broadband, meets spec.

F Service via outdated DSL equipment or nothing at all.

Residential broadband grading criteria

A Two competing providers, both advertising maximum download speeds of at least 25 Mbps and maximum uploads speeds of 6 Mbps, or 3 or more competing providers offering that standard of service in combination.

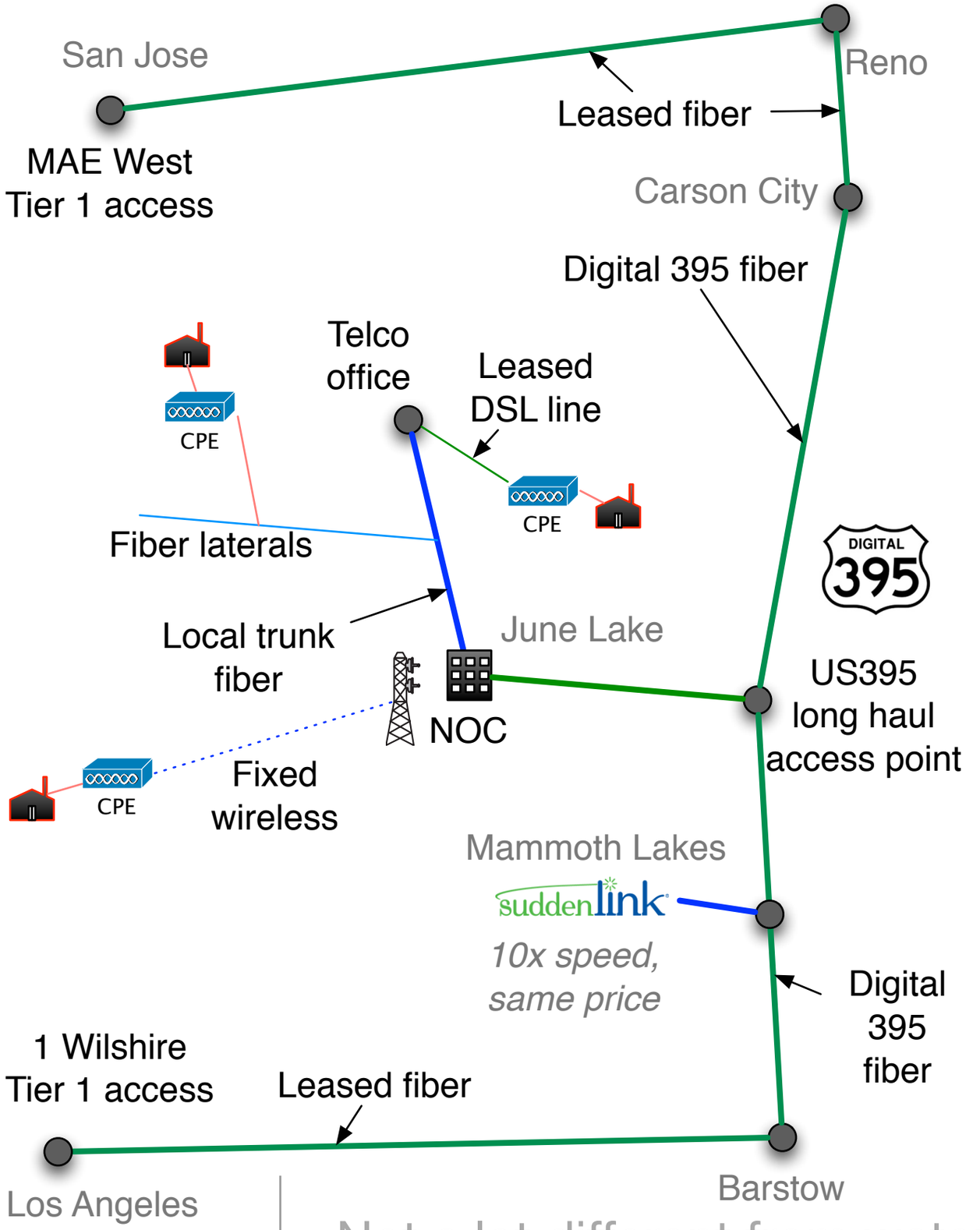
B Competing providers, both advertising maximum download speeds of at least 10 Mbps and maximum uploads speeds of 6 Mbps.

C Competing providers, one advertising max down/up speeds of at least 10/6 Mbps and the remainder meeting CPUC's minimum 6 down/1.5 up standard.

D At least one provider advertising speeds that meet the CPUC's minimum standards of 6 Mbps down and 1.5 Mbps up.

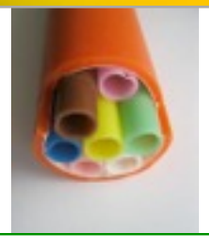
F At least one provider offers service, but no service is available that meets the CPUC's minimum standard of 6 Mbps down and 1.5 Mbps up (underserved). Or no service at all (unserved).

- Tier 1 Internet connection
  - Bandwidth
- Long haul fiber
  - Maybe several providers
- Long haul access point
- Middle mile fiber
- Central office/NOC
- Local trunk distribution fiber
- Lateral fiber
- Customer drop
- Customer premise equipment



Broadband value chain

Not a lot different from water, electricity

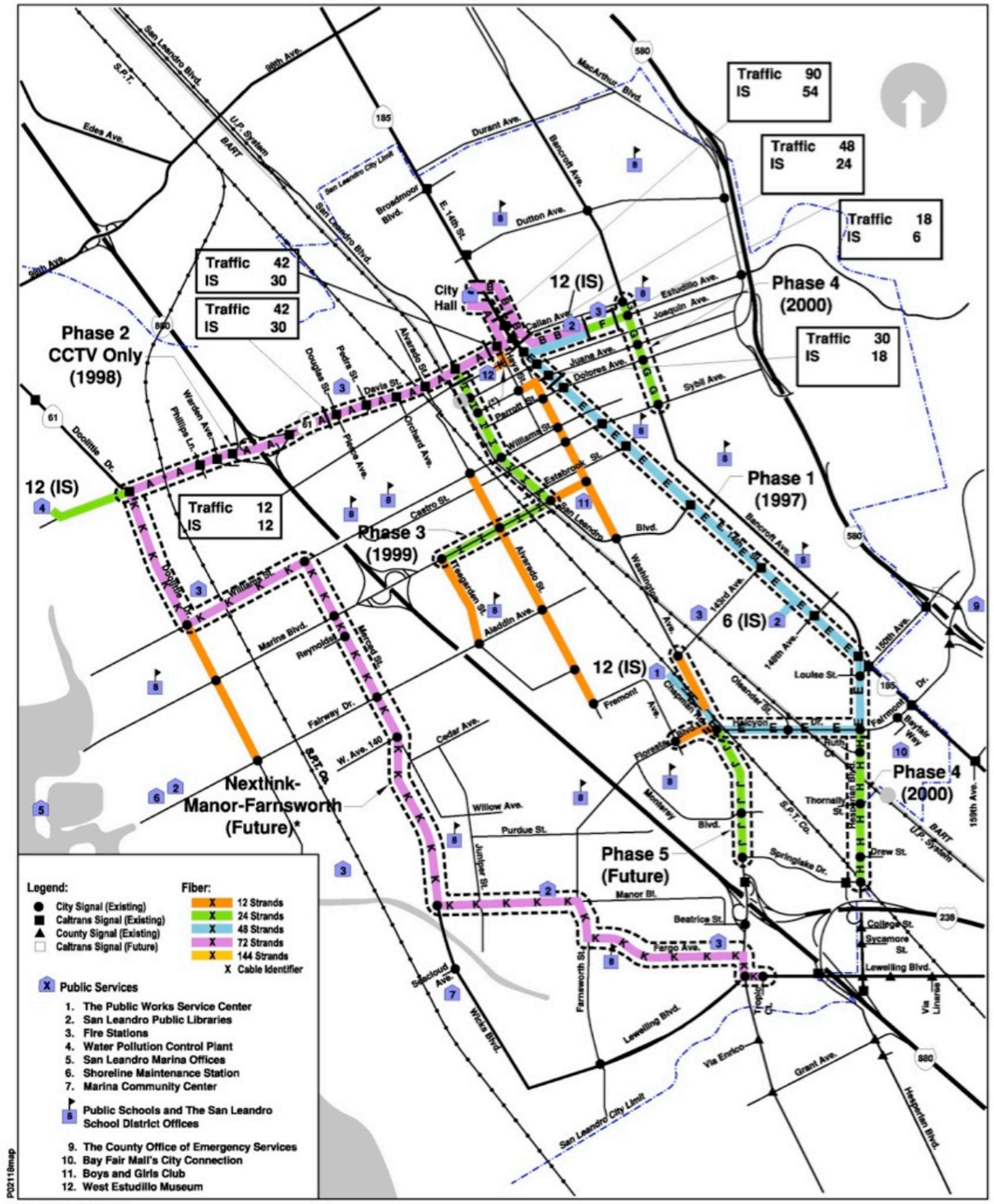
Layer		Revenue	Margin	Competition	Water Analogy
Internet		$1K/ mo and up	Low <10-20%	High	Water
Ethernet/ electronics		Not common	Medium	Make vs. buy	Pump
Fiber optic cable		Local loop $1-5K/mo	Medium	Few to none	Pipe
Conduit		20¢-$2/ft/year	High 100%+	None	Trench/ Right of way

Broadband value chain

The higher up the chain, the greater the competition and the lower the margins

Communities turn conduit into gold

- Lit San Leandro is an 11 mile fiber system through commercial & industrial areas, built with city conduit, $2 million in private capital.
- Palo Alto netting more than $2 million a year with dark fiber on city poles and conduit.
- Watsonville saving millions of dollars.



- Broadband requirements for new development, renovations
- Prioritizing broadband as a planning criterion
- Commercial/industrial vs. residential
- Anticipating and accommodating future needs

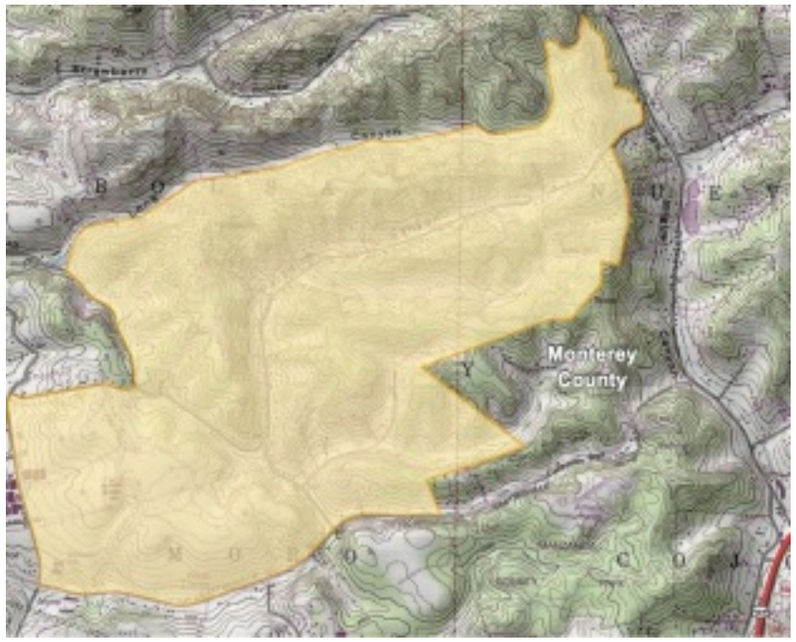
- Broadband conduit in CIP, public works, transportation projects
- Open trench policies
- Right of way and encroachment policies
- Conduit, pole, site leasing
- GIS integration

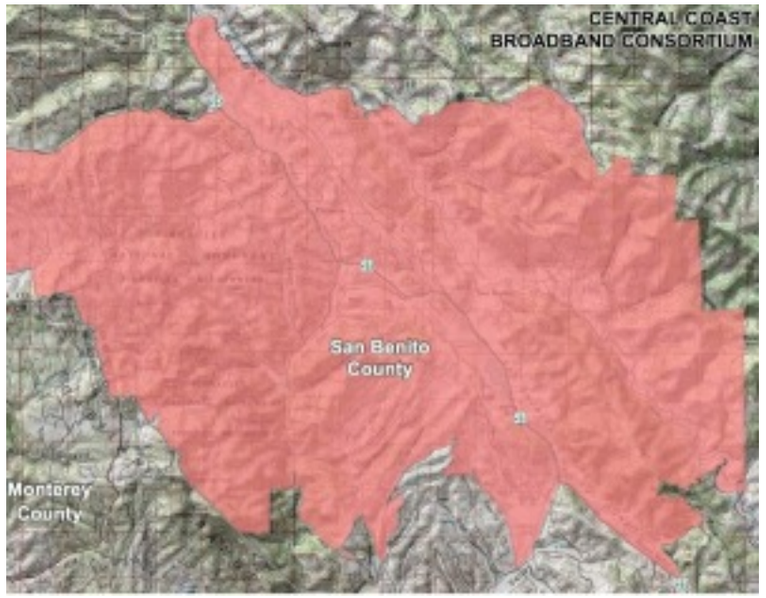
- Telecommuting
- Public services and digital inclusion
- Digital literacy and workforce development
- Systems interoperability, open data programs

- Wireless site, towers and antenna policies
- Environmental and aesthetic issues

Core policies, practices identified and evaluated

Goal is to make broadband a routine policy consideration and planning element





Five last mile projects for three counties

Surfnet in Santa Cruz & Monterey, Pinnacles Telephone in San Benito, Etheric wireless region-wide

Taft community broadband planning workshop

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