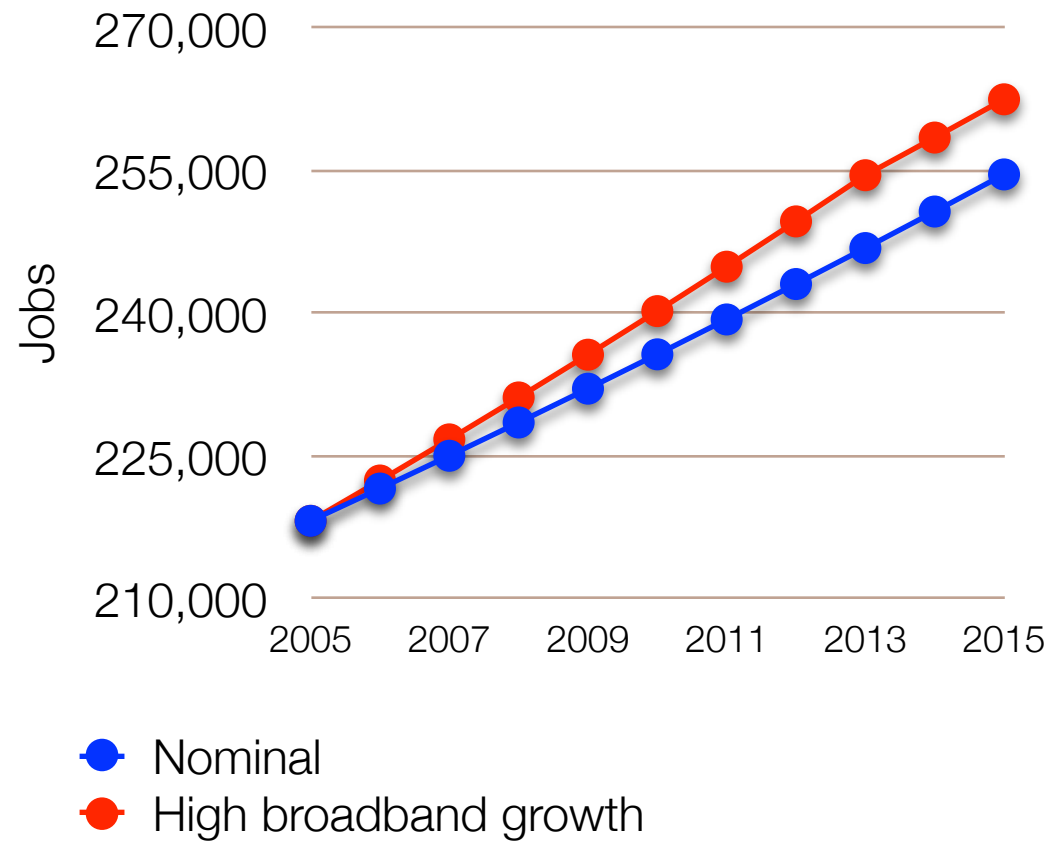


The business of broadband

30 October 2013



Broadband's Effect on San Joaquin County Employment



Source: Sacramento Regional Research Institute

Almost 50K job-years created by improved broadband access

Top U.S. Cities Average Measured Connection Speed

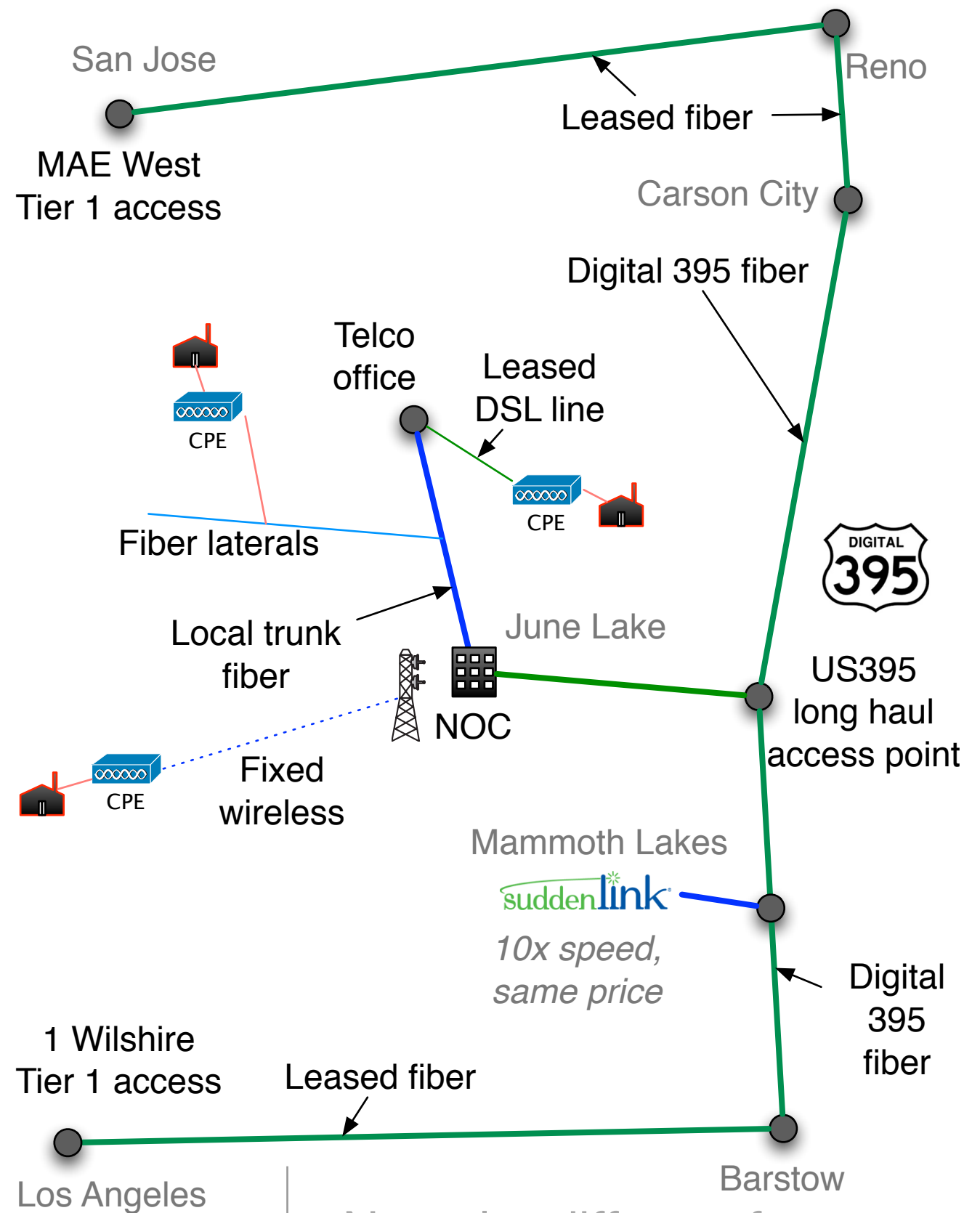
Rank	City	2Q11 Ave. Mbps
1	San Jose, CA	13.7
2	Fredericksburg, VA	8.5
3	Monterey Park, CA	8.2
4	Fremont, CA	8.2
5	Staten Island, NY	7.6
6	Columbia, MD	7.5
7	Jersey City, NJ	7.5
8	Riverside, CA	7.5
9	Oakland, CA	7.5
10	Fairfield, CA	7.3

Source: Akamai

Broadband attracts
business, drives growth

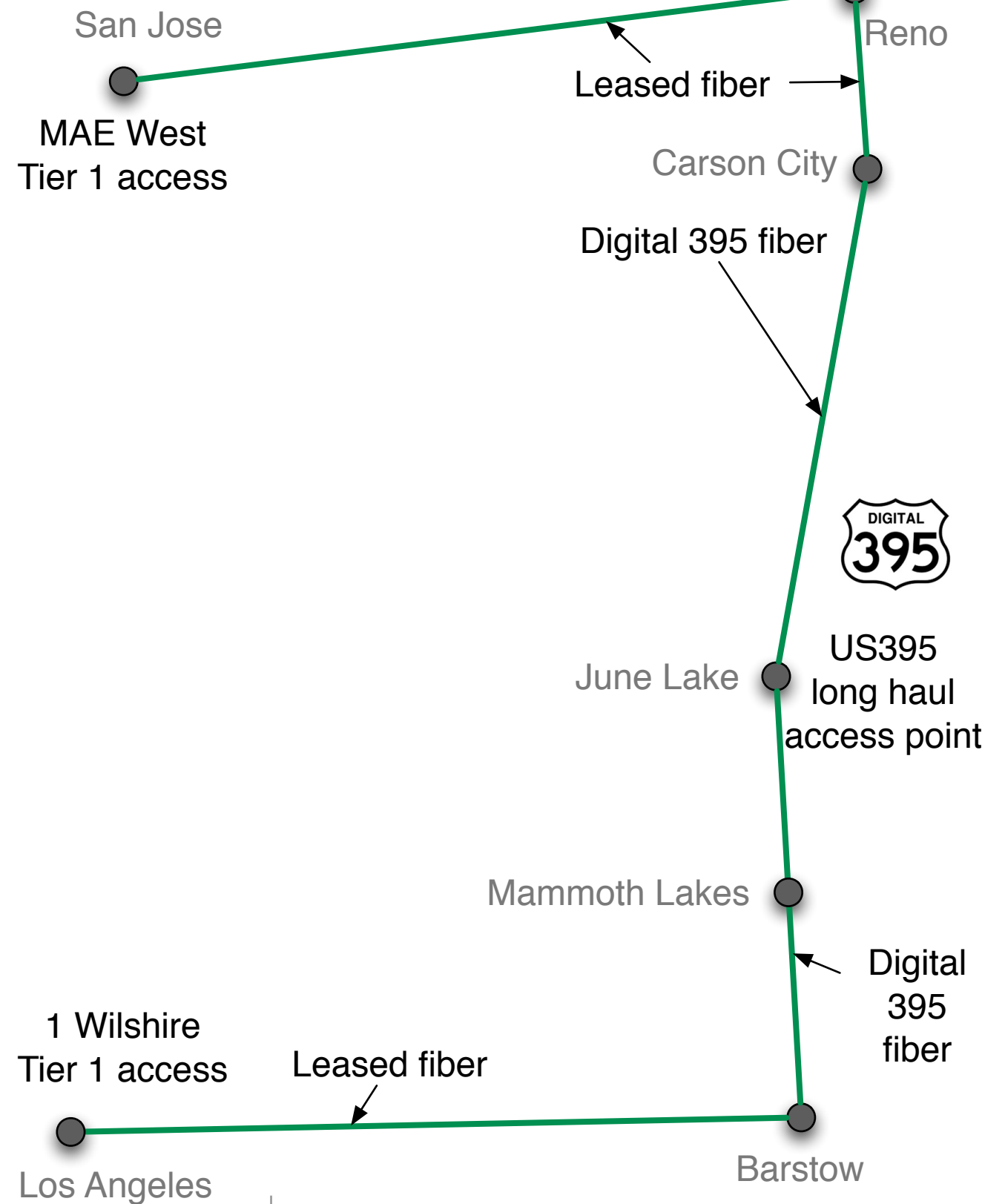
Bandwidth is a basic
requirement for business
location decisions

- 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



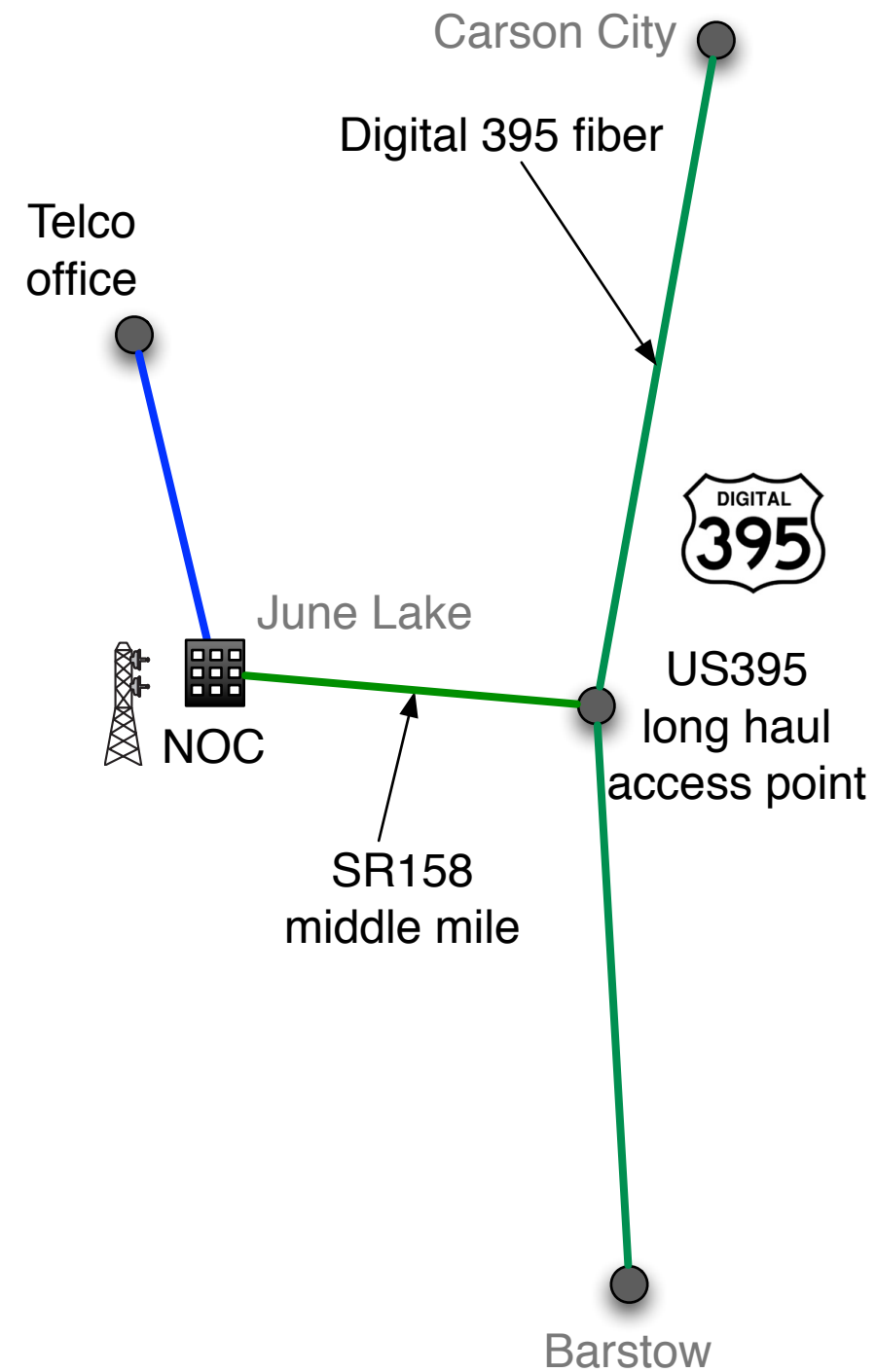
Broadband value chain

Not a lot different from water, electricity



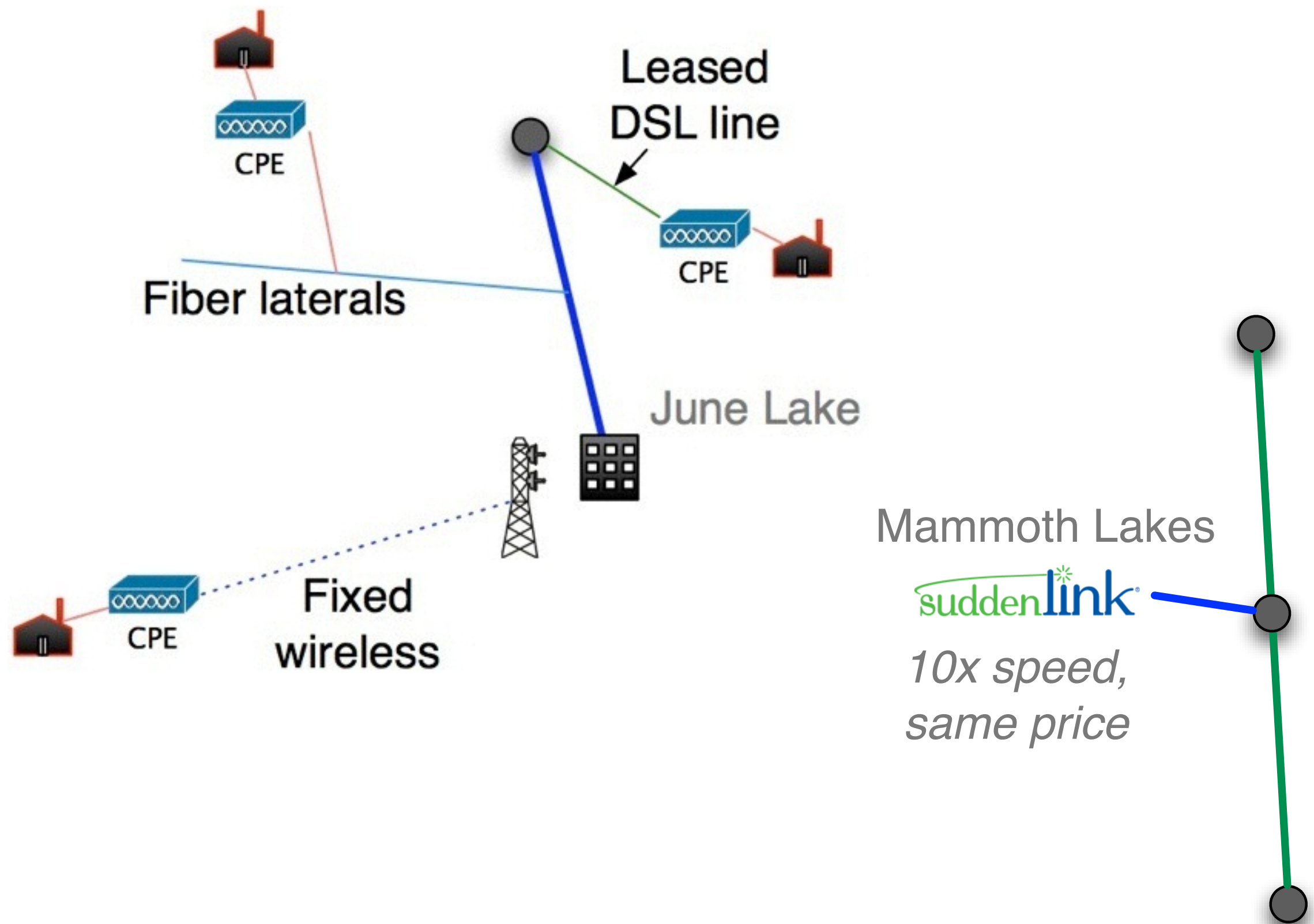
The Internet is made
from other people's stuff

You have to pay for fiber lines,
access and bandwidth



It doesn't just wander
into town

Someone has to build the
middle mile



Last mile determined by
cost & value of customer

Even when subsidized, ROI
might not support capex

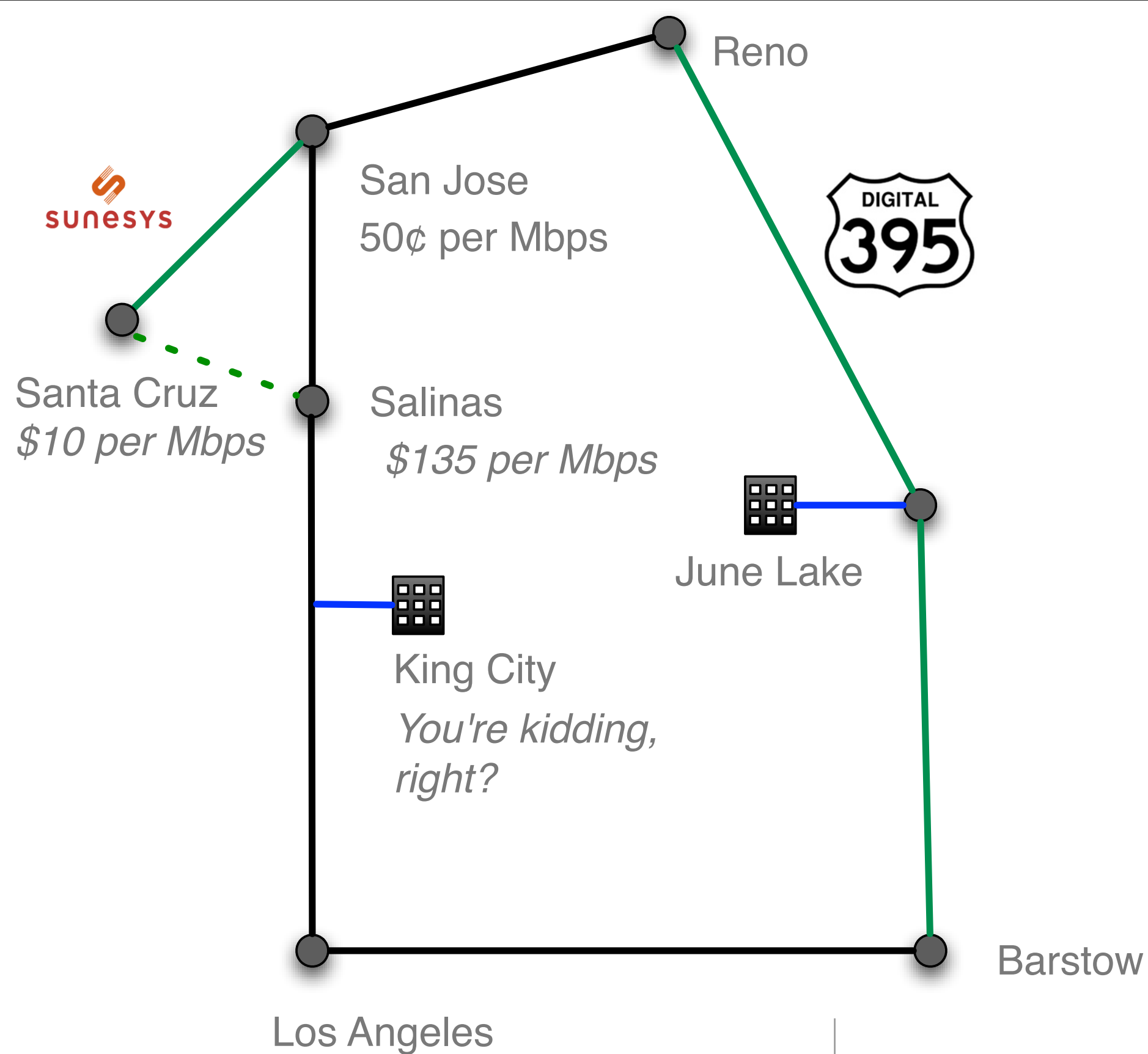
{Geek}

*is the new
Sexy*



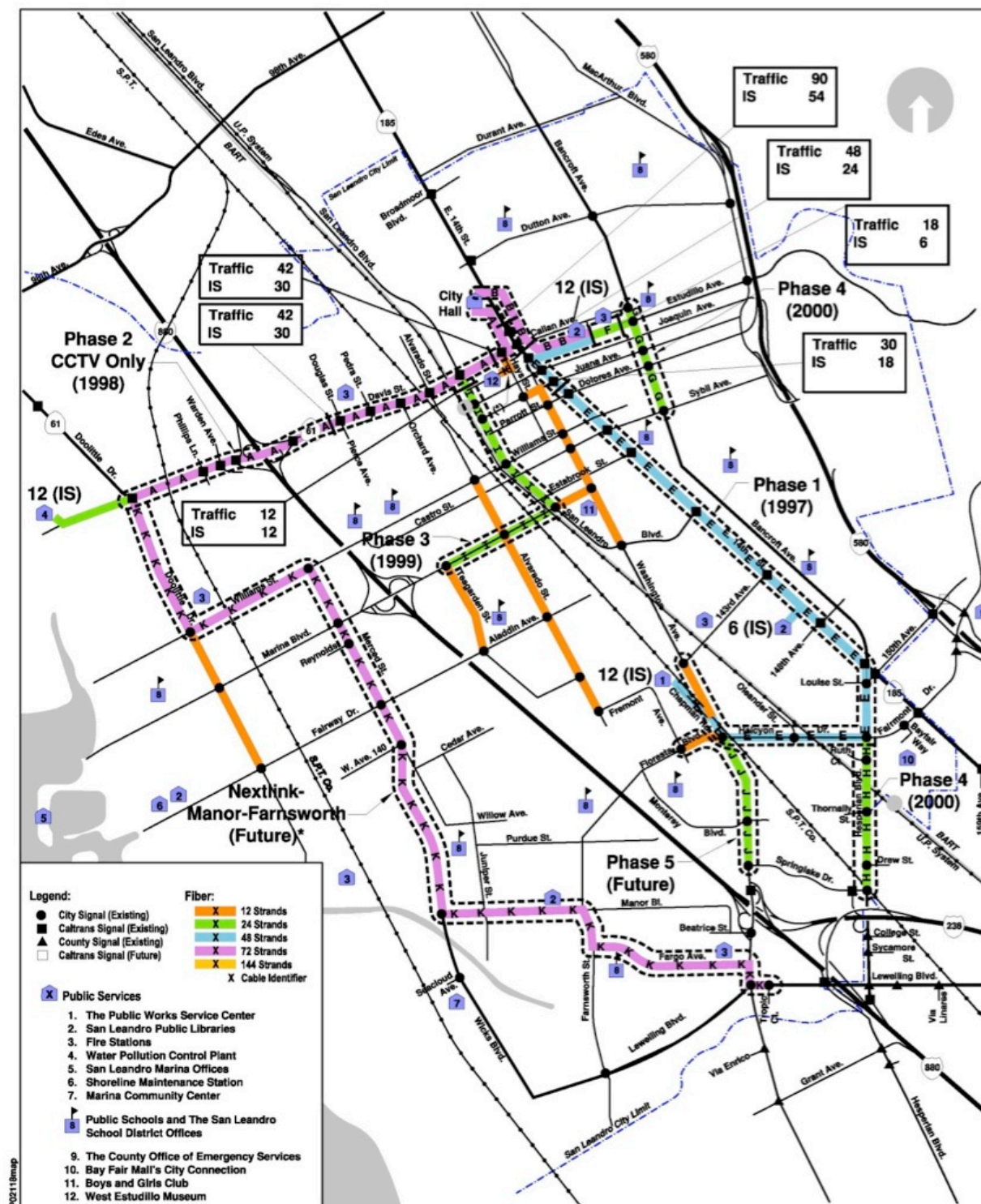
A tale of two cities

San Leandro & King City



Distance & location matter

You mean the Internet isn't free?



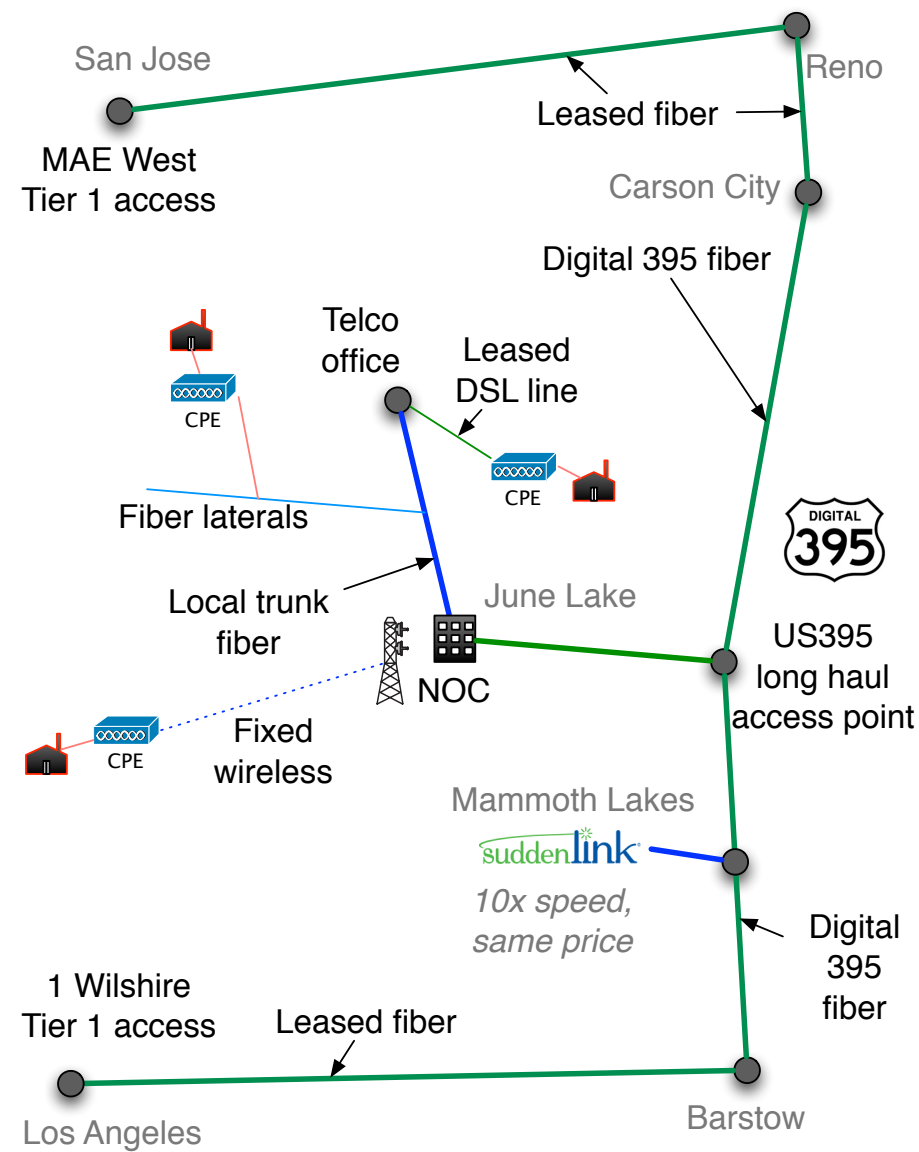
October 23, 2003

DKS Associates

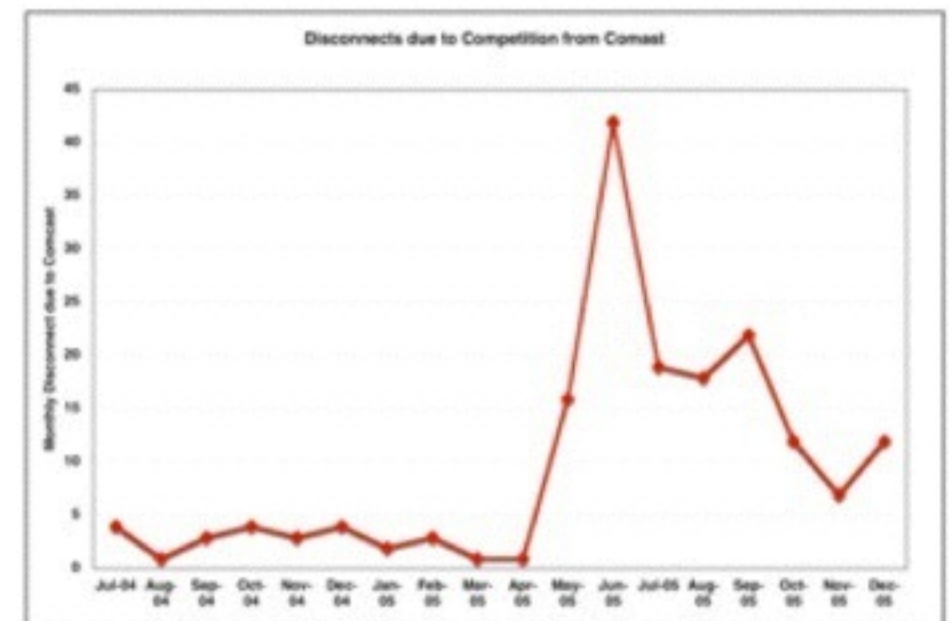
City of San Leandro
Advanced Traffic Signal System
Fiber Count Diagram

Lit San Leandro

\$2 million private fiber build in city conduits, Watsonville has similar plans



And then the competition shows up...



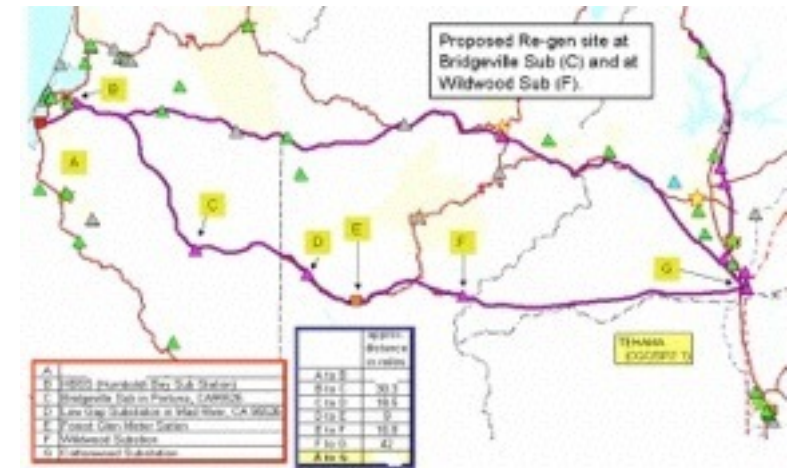
Local ventures can take on incumbents



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



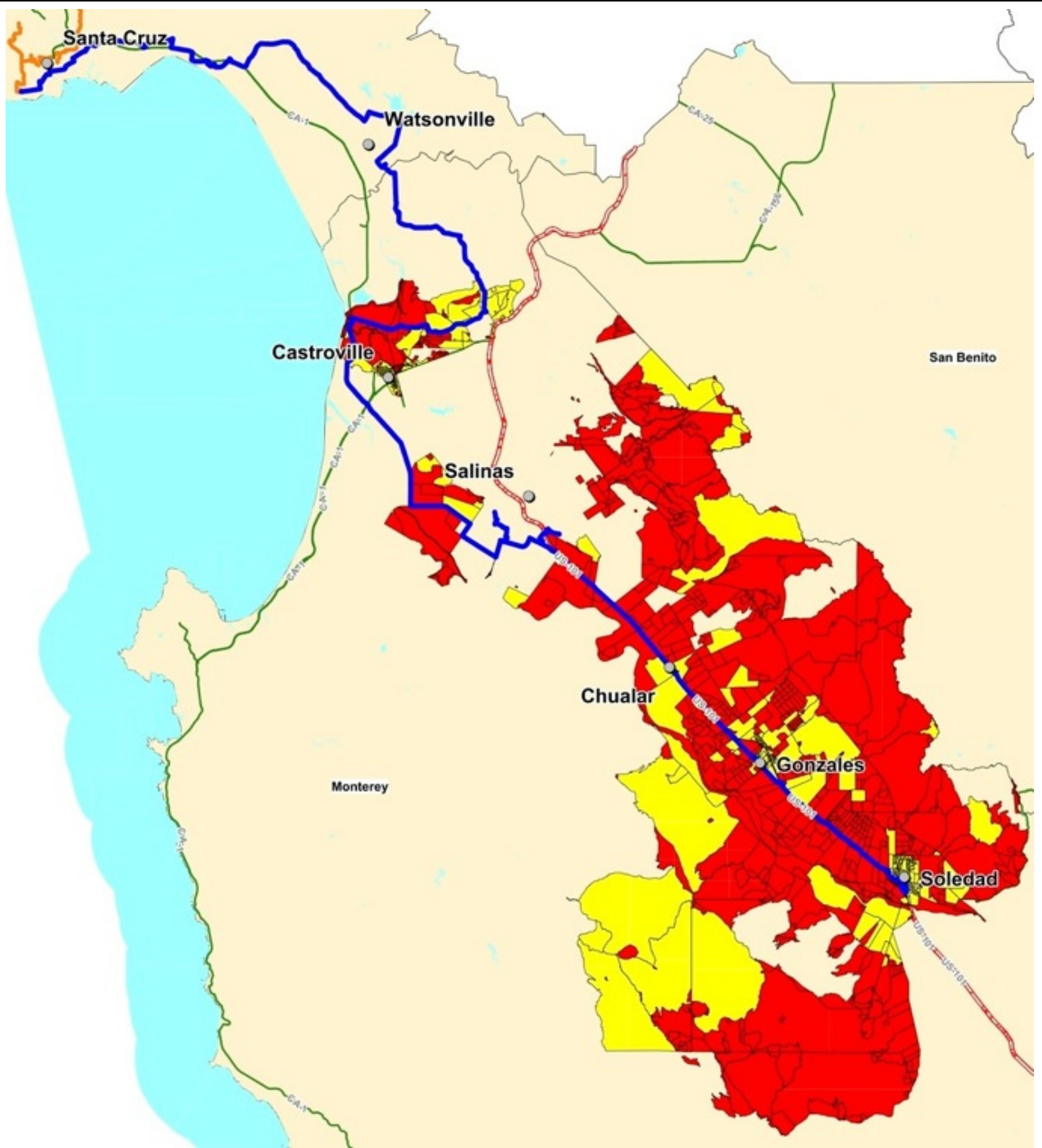
Private communities evaluate, partner on fiber systems

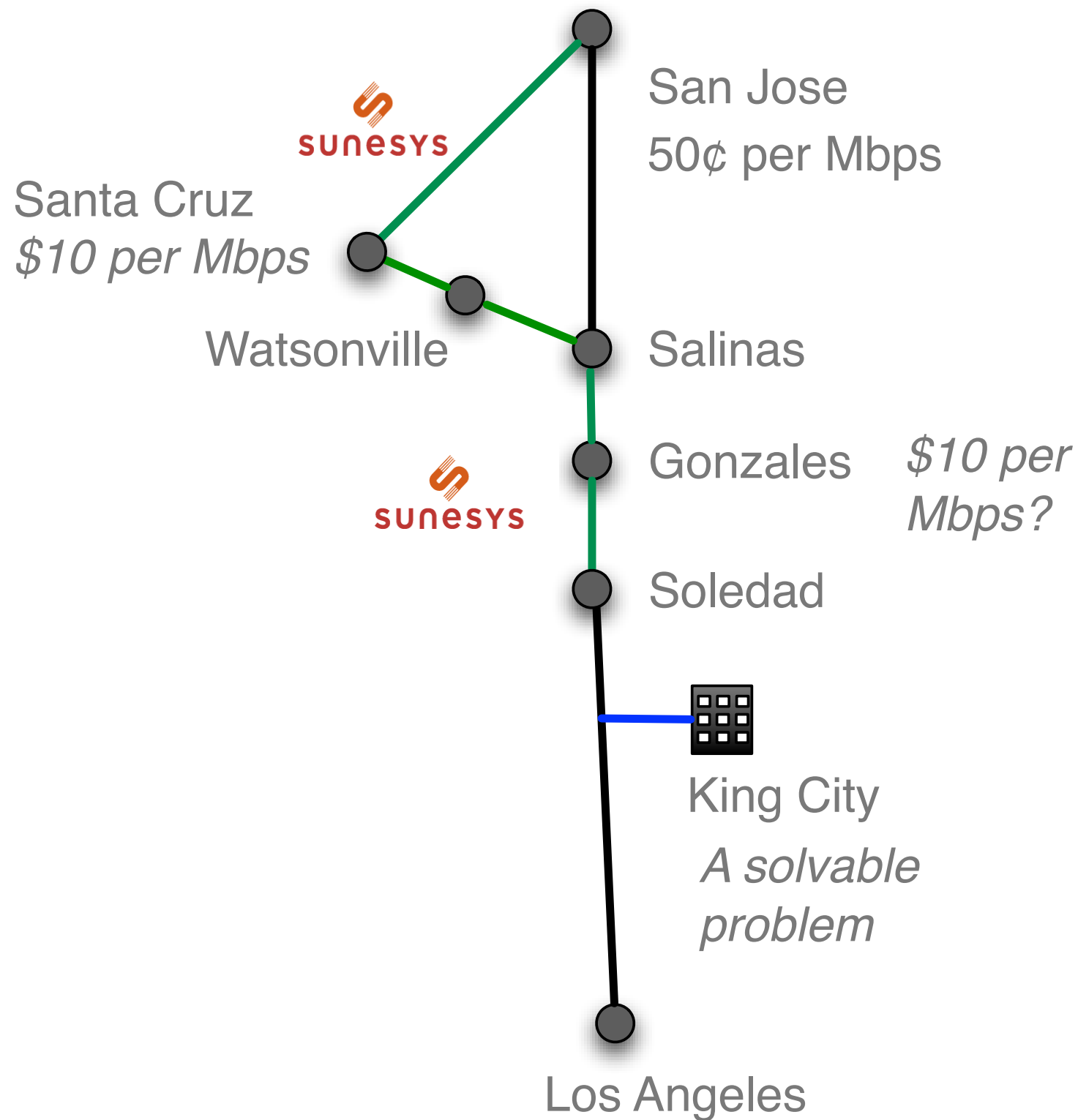
Even so, communities are developing broadband

Willing to invest in infrastructure & partner with private companies

Sunesys-led middle mile project

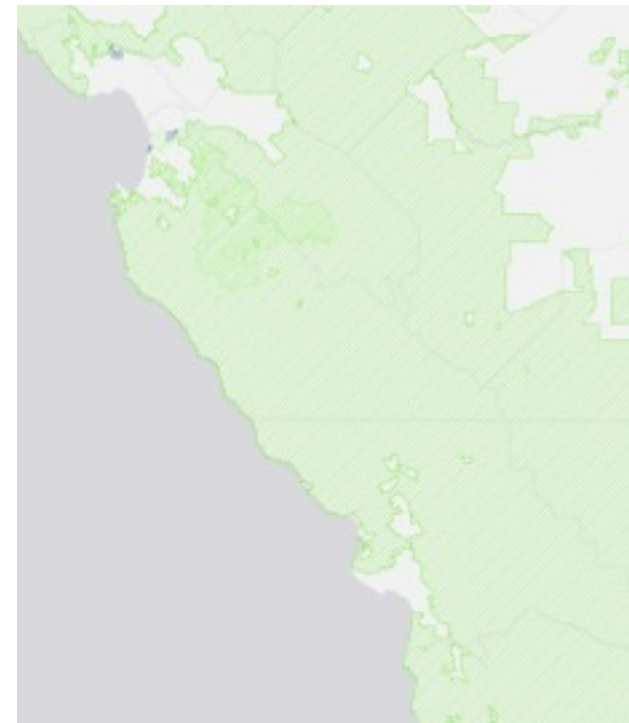
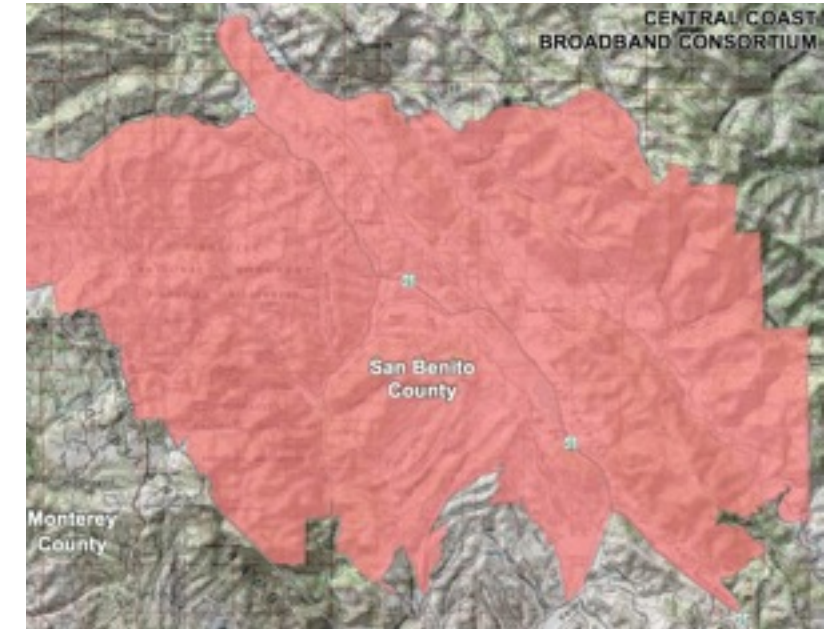
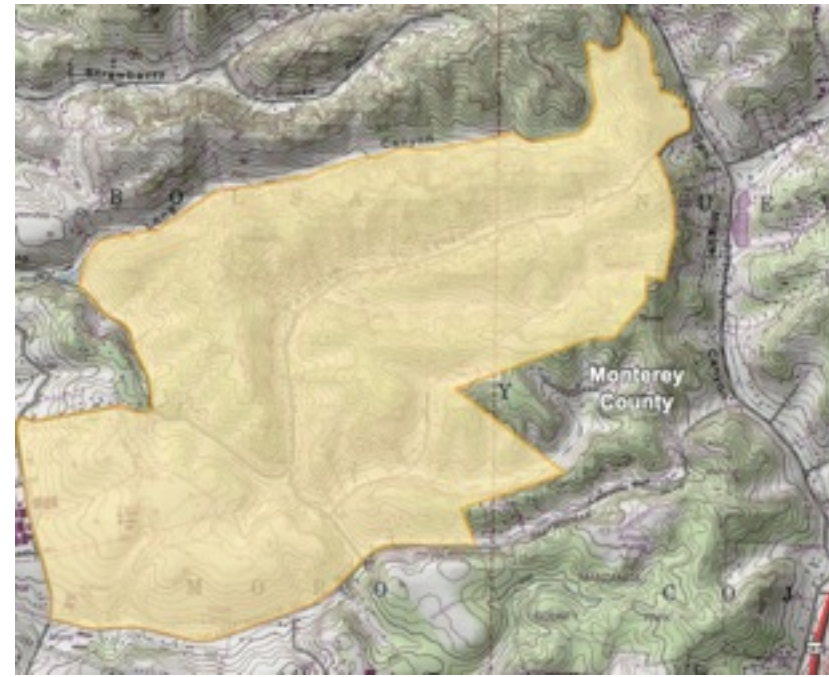
Industrial grade 91-
mile fiber route:
Santa Cruz -
Watsonville -
Castroville - Salinas -
Chualar - Gonzales -
Soledad





Accessible middle mile
fiber lowers costs

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



Five last mile projects for
three counties

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

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www.TellusVenture.com



- Municipal fiber projects in San Leandro, Palo Alto, Benicia, Salinas, Oakland.
 - Municipal wireless projects in Los Angeles, Oakland, Folsom, Lompoc.
 - Broadband policy development in Watsonville, Alameda, Morgan Hill
 - Community broadband system planning and implementation at The Villages in San Jose, Rancho Murieta near Sacramento, Corona.
 - Private ISP planning & funding in Monterey, Santa Cruz, San Benito, Nevada Counties.
-



Planning, management and business development
consulting for community broadband