# Benicia Industrial Broadband Project Assessment

2 July 2013

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# A tale of two cities

## San Leandro & King City

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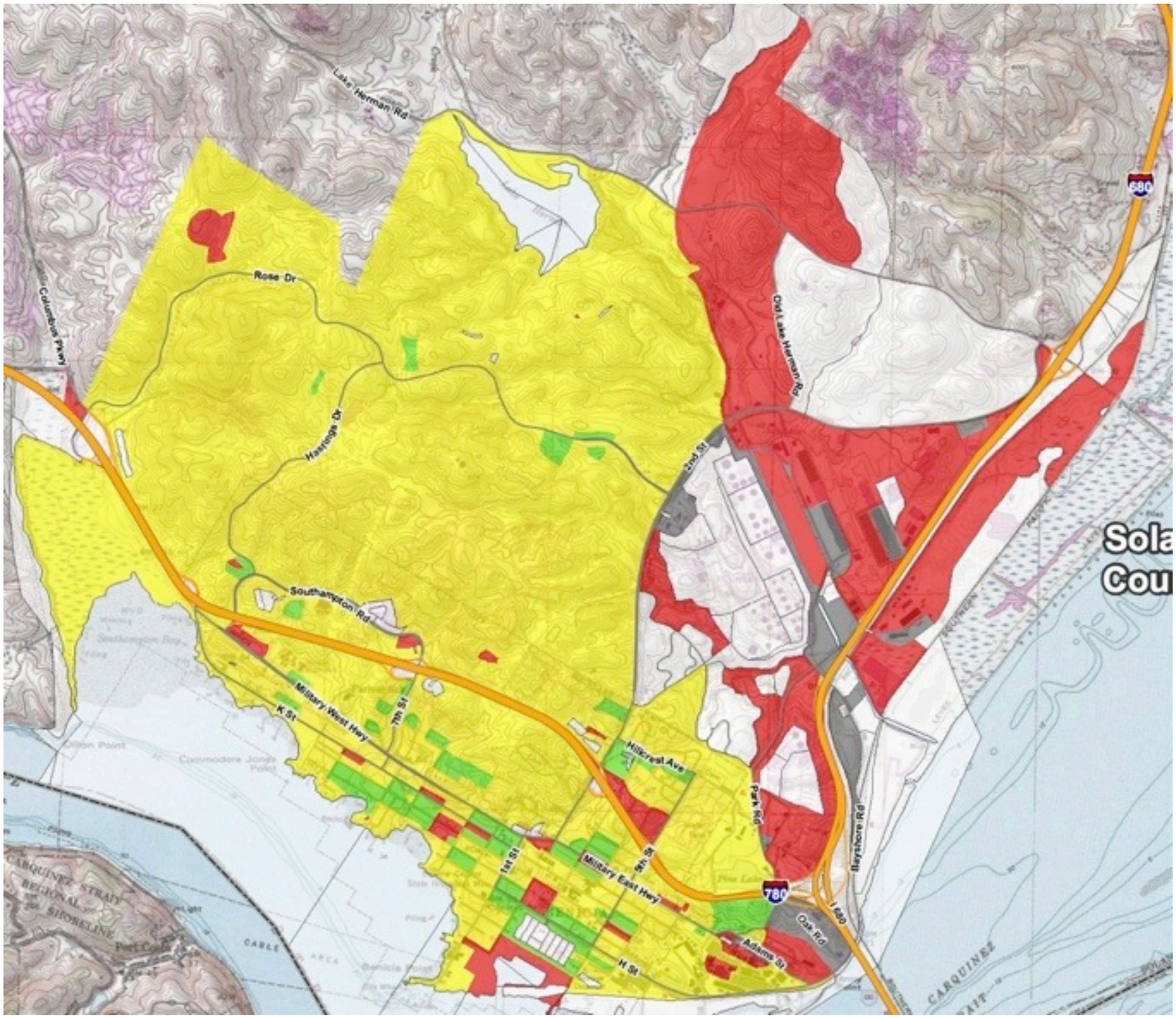
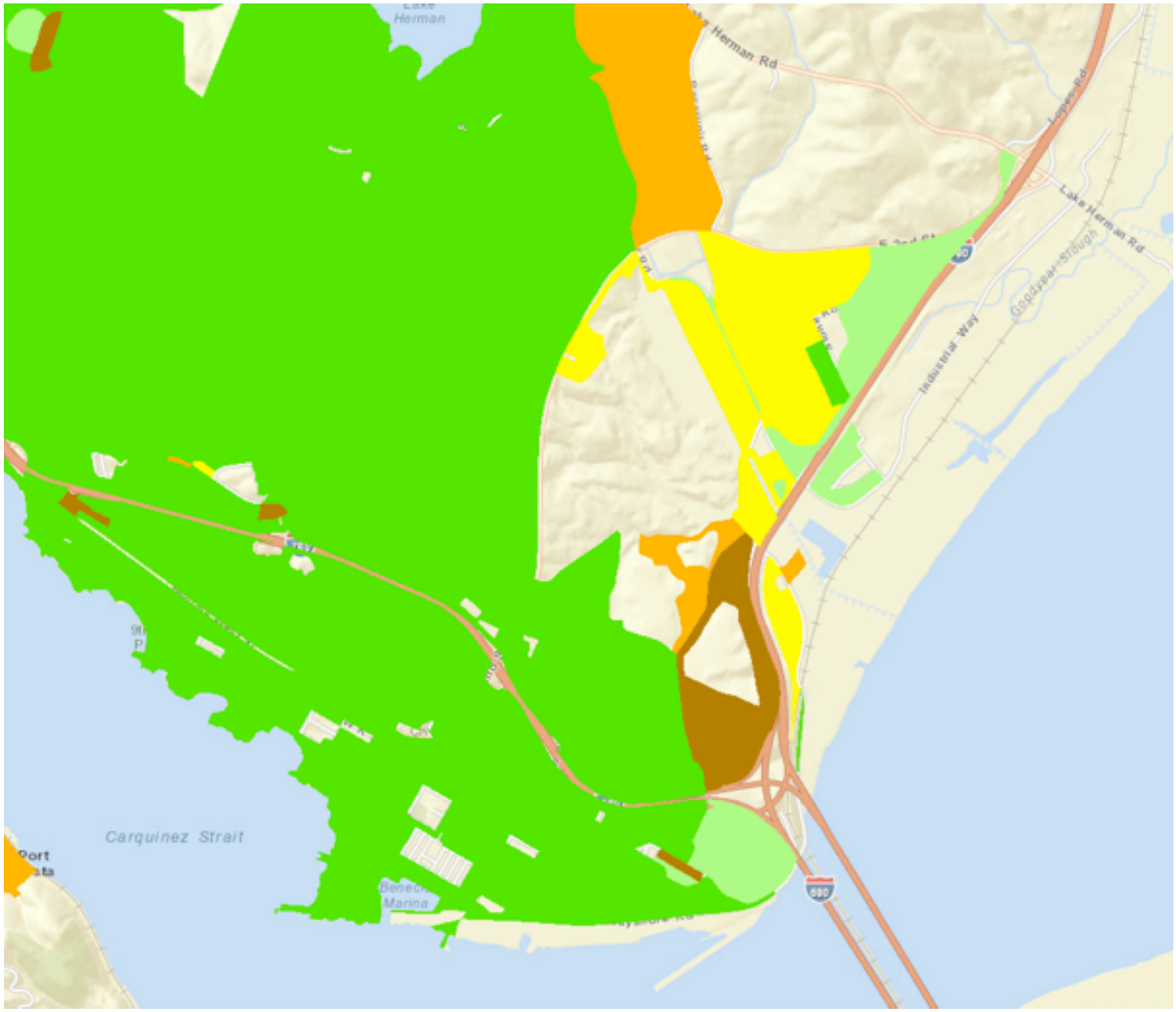



# Regionally, Benicia's overall broadband grade is "C"

But the industrial park rates "D's" and "F's"





# Core AT&T infrastructure is substandard

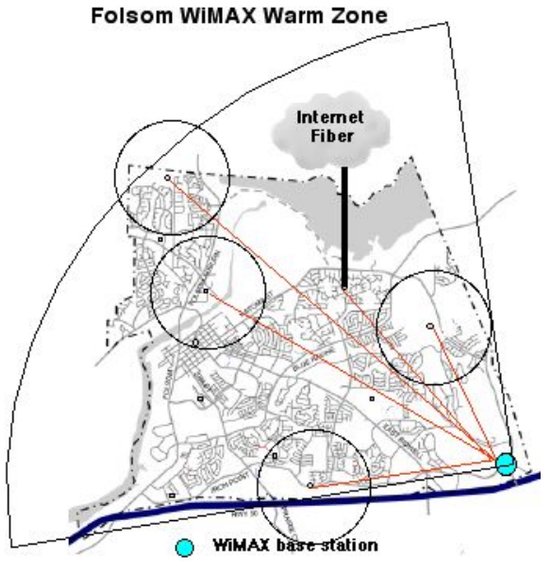
But major fiber optic lines run through the area

# Businesses need commercial and industrial grade broadband

- Necessary long-haul fiber routes run through Benicia.
- Commercial grade similar to residential service, but with higher service standards.
- Industrial grade means controlling quality: dark fiber, Tier 1 exchanges, engineered links.

San Leandro

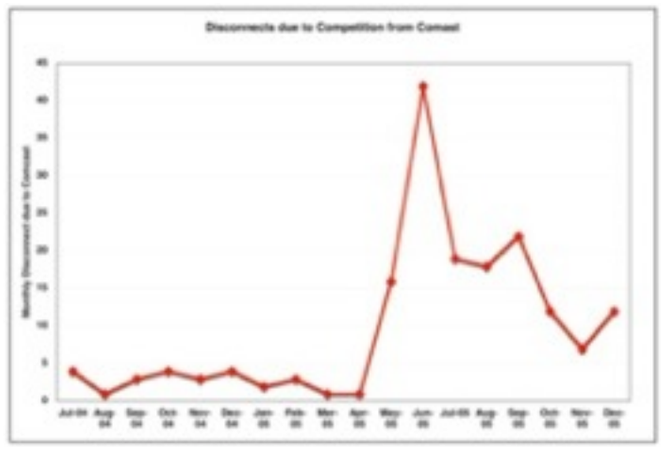
Palo Alto




Folsom

Central coast counties

Lompoc



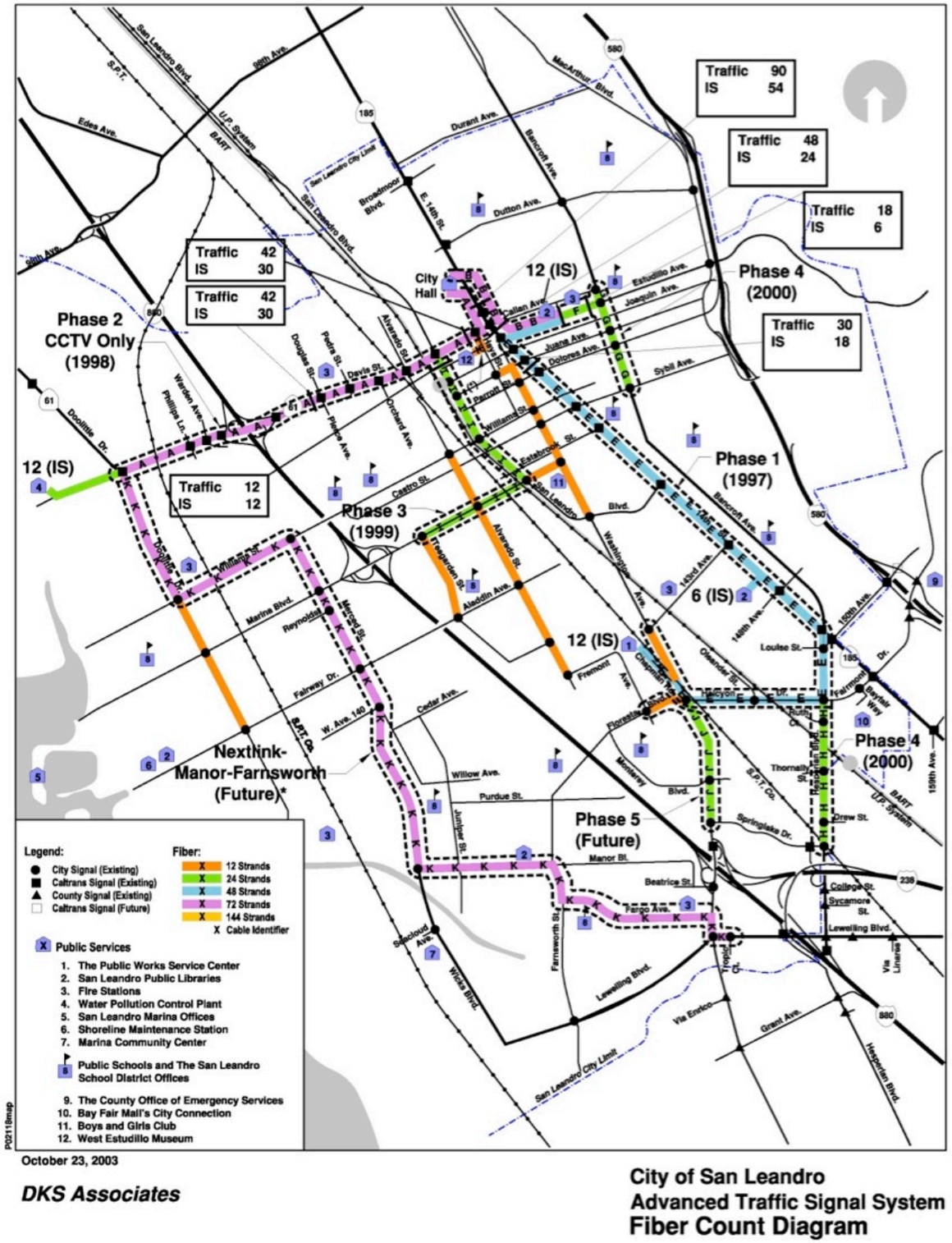

Alameda

# City and county initiatives have solved these problems

Variety of public and private models, but not all have worked

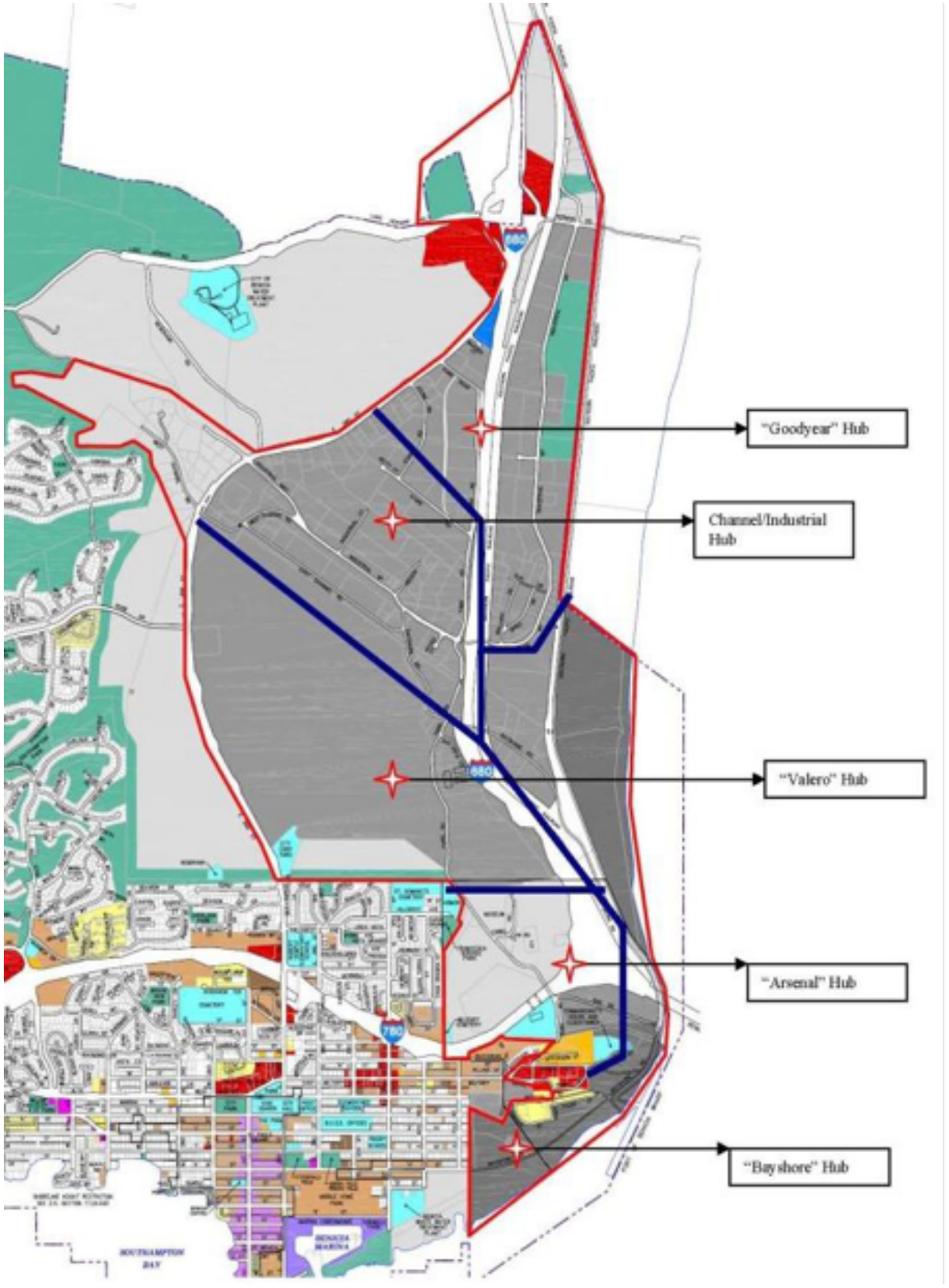
# Communities turn conduit into gold

- 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.



# Recommendations

- Issue an RFP asking for private sector solutions.
- Put City funding on the table.
- Technology neutral, based on high performance standards.
- Let proposers design systems.
- Remain open to ownership & partnership models, but minimal city role preferred.



# Questions?

Roman ductworks used for fiber optic lines

# Backup slides

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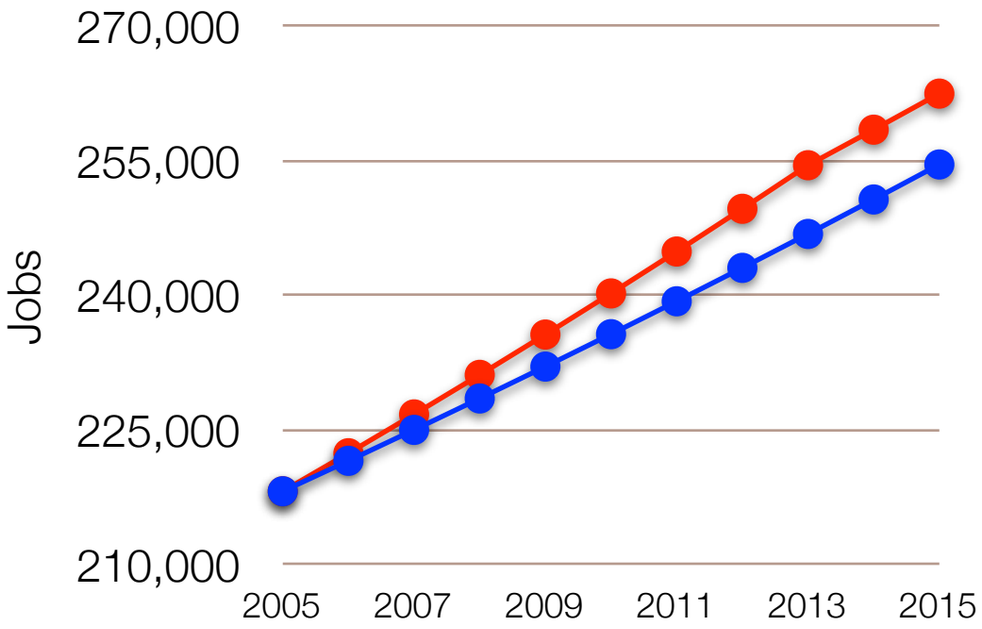
## Broadband's Effect on San Joaquin County Employment




Source: Sacramento Regional Research Institute

*Almost 50K job-years created by improved broadband access*

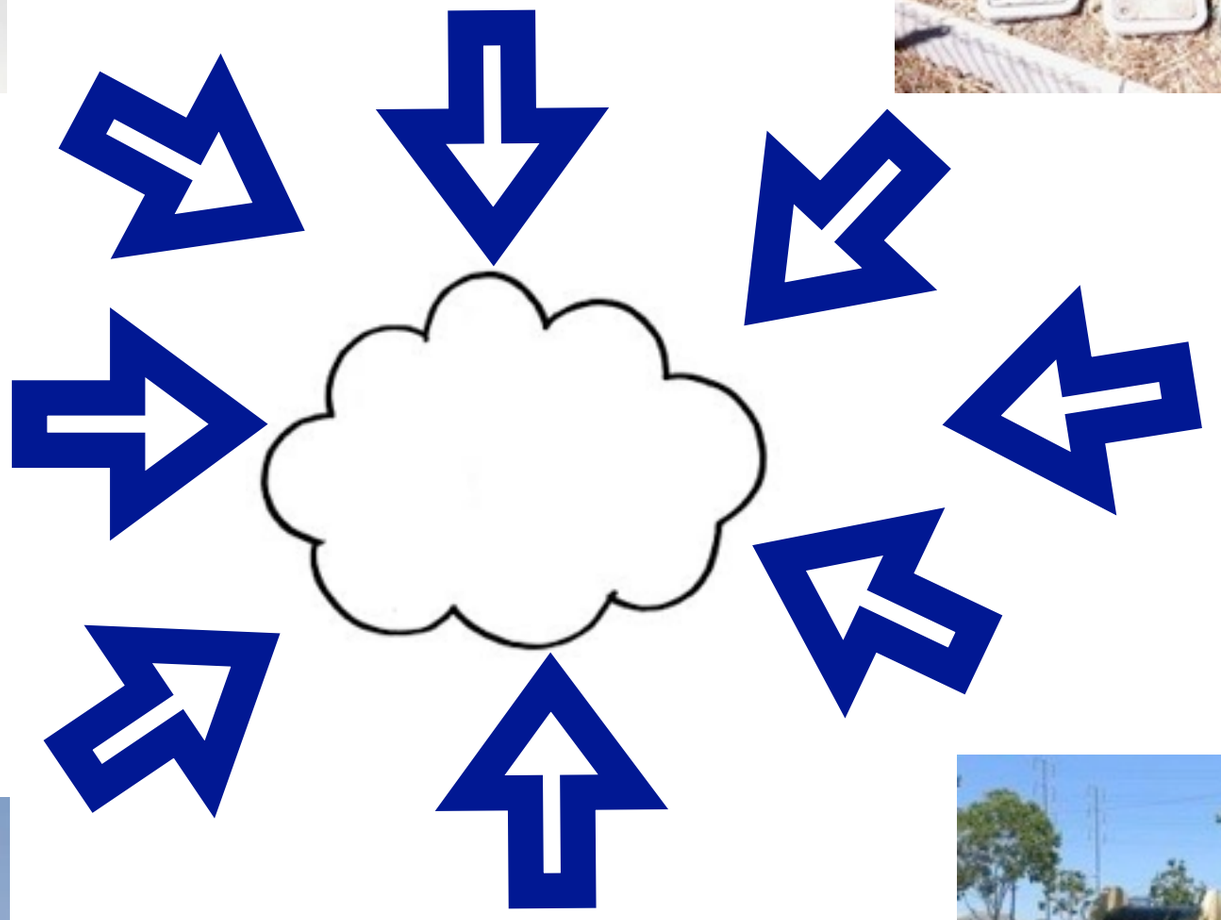
Top U.S. Cities
Average Measured Connection Speed

| 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


# Broadband is digging and rigging

It’s not rocket science

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| 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


- 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

- Municipal fiber projects in San Leandro, Palo Alto, Benicia.
- 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.

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# Planning, management and business development consulting for community broadband

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