

**El Dorado County:**  
**Broadband or Backwater?**  
**Nothing happens unless**  
**first a dream...**

--Carl Sandburg

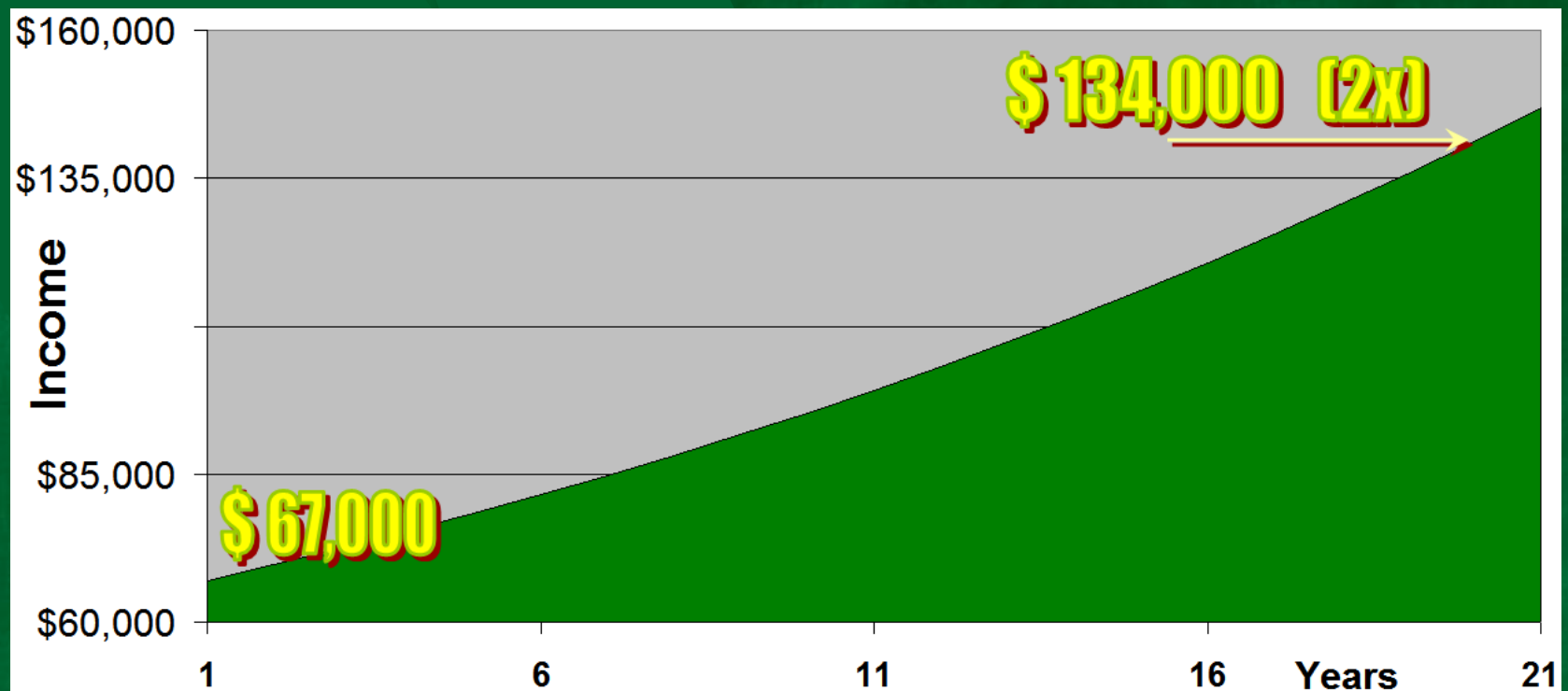
*EDC Board of Supervisors*  
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# Intention: Double EDC Income

- **Broadband Yields 4%/year Growth**
  - Supported by numerous studies
- **EDC Household Income Potential**



# Principle: Move Bits, Not Bodies

- **Field Working (Low speed)**
  - Cell phones, radios, “smart” phones
- **Home Work (Moderate speed)**
  - eMail, Internet access, file transfers
- **Telecommuting (High speed)**
  - Webinars, shared desktop, secure access
- **Telepresence (Very High speed)**
  - “PicturePhone”, two-way television
  - Telemedicine (live monitors, robotics)

# Telepresence



# Roads As Analogy

## ➤ Paved Roads in EDC

1910	0 mi	
1948	328 mi	0.86 mi/yr
2010	2,395 mi	33.34 mi/yr

## ➤ Why? Capital Investment

- We base roads on *rights* (*not* ROI/BE)
- Benefits accrue to citizens and County

## ➤ EDC Falls Behind Without Investment

- Status: Permanent Backwater
- EDC future decided by TelCos, not citizens

# Roads & Broadband: The Parallels



# The Keyboard As Our “Crank”

- 20 Years Before The First Macintosh...
- 22 Years Before Windows 1.0...
- ...Doug Englebart's First Mouse (1963)



# Now, For a Glimpse of 2020

## ➤ Bandwidth Needs Will Grow, Incessantly





# Where Roadway Analogy Fails

- **Private TelCos/ISPs Are ROI/BE-Driven**
  - The Mantra: “Shareholder Return”
- **Population Density Drives Deployment**
  - Which would a Public Company pick?
    - \$20 MM to serve 100,000 in West Sacramento
    - or
    - \$20 MM to serve 1,000 in El Dorado County
- **Even IF “El Dorado County” Got The Nod**
  - There are 2,000 more rural counties!

# What's It Worth To Us?

- **Double Household Income**
  - Constant dollars, same population
- **Increase Tax Revenue by  $\pm$ \$250 MM/yr**
  - Constant dollars, same population
- **More *Diversity* of Income**
  - Lower unemployment
- **More Workforce Stays in-County**
  - Stop exporting 40% labor force every day
  - Improves neighborhoods & families

# The Current Situation

- **~20% of Residents Have Today's BB**
  - AT&T, Comcast, small ISPs/WISPs
  - Vendors eager to reach more customers...
    - ...if they could economically reach them
- **Sparse Population Density Off US50**
  - Average, less than 2 adults/acre  
(and that excludes the National Forest!)
  - Virtually **NO** incentive for risk capital
- **Benefits Require Investment**
  - How *do* we bridge our “capital gap?”



# How It Works #2: “Last Mile”

- **Urban: Telco to Residence**
  - Common copper wire
  - Distances: 100’ to 10 miles



# How It Works #2: “Middle Mile”

## ➤ Urban: Telco to Residence

- Common copper wire
- Distances: 100’ to 10 miles



## ➤ Rural: “Long Haul” to Neighborhood

- Fiber Optic cables buried in County roads
  - Convert back to copper at each intersection
- Distances: 100’ to 10,000 miles

## ➤ Requires Public Funding

- A universal rural problem

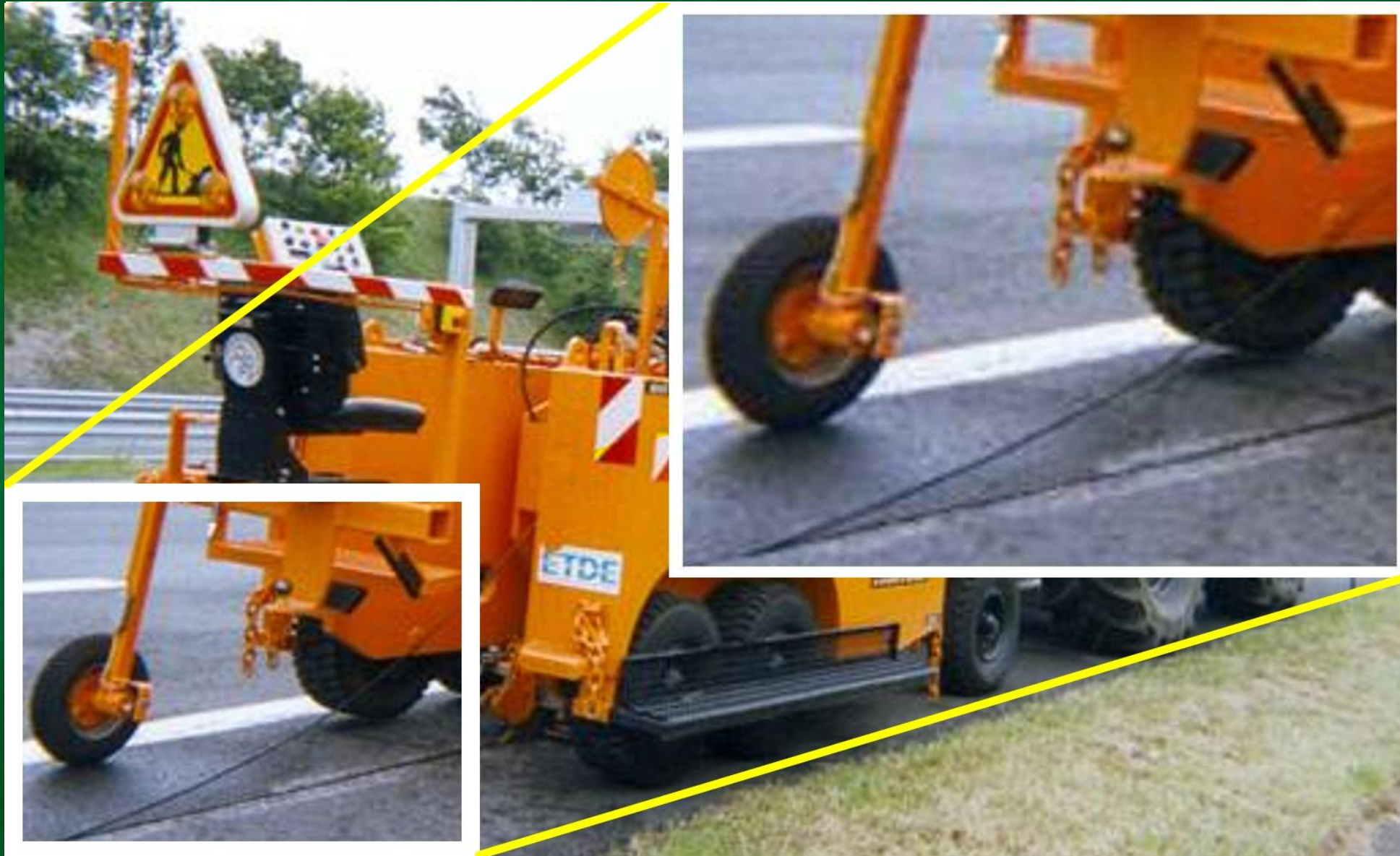
**Needs Public Solution**



# How It Works #2: Microtrenching



# How It Works #2: Microtrenching





# How It Works #3: “Last Yard”

## ➤ From Intersection to Doorstep

- Local connections at the road
- Goal: 100 *Million* bits/second
  - Residence (Internet, TV, Phone)
  - Business (Commercial users)
    - New data-intensive businesses



## ➤ Solutions Unique To Each Neighborhood

- Flats, valleys and canyons
- Provided by private business partners
- Wired and/or wireless local distribution

**Private Vendors**

# Who Would Pay, and For What?

- **“Long Haul”**: Available Today, Low Cost
- **“Middle Mile”**: Infrastructure Capital Costs
  - Inadequate Return-on-Capital for TelCos
  - ISPs *would* pay for customer access
  - Loans convert future cash flow to capital
- **“Last Yard” Capital Costs**
  - TelCos, ISPs, WISPs own their gear...
    - ...and run their own “local loop”
- **Clear Public/Private Partnership Need**

# Rural Broadband as Partnership

- **Broadband Infrastructure Costs Money**
  - Roughly \$350 MM for “Middle Mile”
    - Infrastructure  $\approx$  \$200 MM (in  $\approx$  \$15M phases)
    - Operations, 20 years  $\approx$  \$150 MM
    - Commercial Lending/Funding, or Grants
- **Broadband ROI/BE Longer Than 20 Years**
  - TelCos’ ROI needs inhibit rural investment
    - Universal Service Fund (USF) might help
- **Federal Grants *Might* Be Available**
  - Political climate not favorable in near term

# What Are Partner's Resources?

- **Public Institutions (e.g., County)**
  - Right-of-way
  - Citizens needing Broadband (customers)
- **Private Entities**
  - Deliver services for revenue
    - Installation, Technical Support, Billing
    - Customization of services to market
  - Pay for use of infrastructure from revenues
    - Converts future cash flow to debt service

# Partner's Unique Roles

- **Public: Leverage Lending Capacity**
  - Guarantee debt service with contracts
    - “If we build it they will come”

*versus*

“If you guarantee it, we will build it”

- **Private: Leverage Competition**
  - Nimble players lead with new technology
  - Large-scale TelCos & ISPs provide stability
  - Deliver ever-expanding range of services

# Next Steps

- 1. Get the Message Out to County**
- 2. Build “Advisory Council” of Citizens**
- 3. Recruit Founding Management Team**
- 4. Build Business Plan**
- 5. Obtain Grants/Loans for Pilot**

# 1. Get Message Out to County

- **Many Rural Citizens Don't Yet "Get It"**
  - With only slo-o-ow dial-up, how could they?
  - Primary uses: eMail, Browsing
- **Citizens Are Motive Force for Deployment**
  - "If you build it, they will come?" (not likely)
  - "Do you want to be richer?" (who says NO?)
- **Grant Funding for Education Available**
  - California Emerging Technology Fund (CETF)

## 2. Build Advisory Council

- **Identified in EVERY Successful Grant**
  - Grantors need to know money used well
  - Passionate evangelists for the concept
- **Participation In Two Tiers**
  - “General Interested Public”
    - Irrespective of qualifications, skills
  - “Leadership”
    - Technologists, Business Management
  - Next meeting: October 21<sup>st</sup>, 2010



# 3. Recruit Founding Team

- **EDC Is Home To Qualified, Retired CxOs**
  - Silicon Valley émigrés
    - “Eagles don’t flock;  
you have to find them one at a time.”
- **Key Positions: CEO, CTO, CMO, CFO**
- **Team Responsible For:**
  - Business Plan
  - Establish Funding for Pilot Project
- **No Team → No Capital → No Broadband**

# How You Can Help

**Let's focus, together, on creating new wealth for all citizens.**

- **Pass the “Broadband Support” Resolution**
- **Commit To Support Broadband**
  - Strategic: “Broadband for all in EDC”
  - Tactical: Encourage broad support
    - **Among citizens**
    - **Within EDC Departments and Agencies**

# What IS Our Highest Calling...

...if not enabling and creating  
new wealth for all citizens?

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