



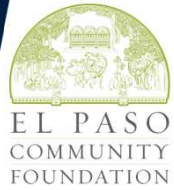
**THE UNIVERSITY OF TEXAS AT EL PASO**



**MIKE LOYA CENTER**  
FOR INNOVATION AND COMMERCE

Municipal Broadband Feasibility Study Findings  
as presented to  
El Paso County Commissioner's Court

April 2022



# Municipal Broadband Study Feasibility Study Mike Loya Center for Innovation and Commerce (MLCIC) Deliverables



## Task 1: Broadband Costs

*Complete*

**Task Description:** Taking as a baseline the market research findings and needs from the Hunt Institute, the team will find and compare benchmarks and create an analysis of estimated costs for the expansion of broadband.

## Task 2: Business Model and Sustainability Report

*Complete*

**Task Description:** Initial assessment of a business model and sustainability recommendation, based on the estimated costs analysis and market assessment for Broadband Services.

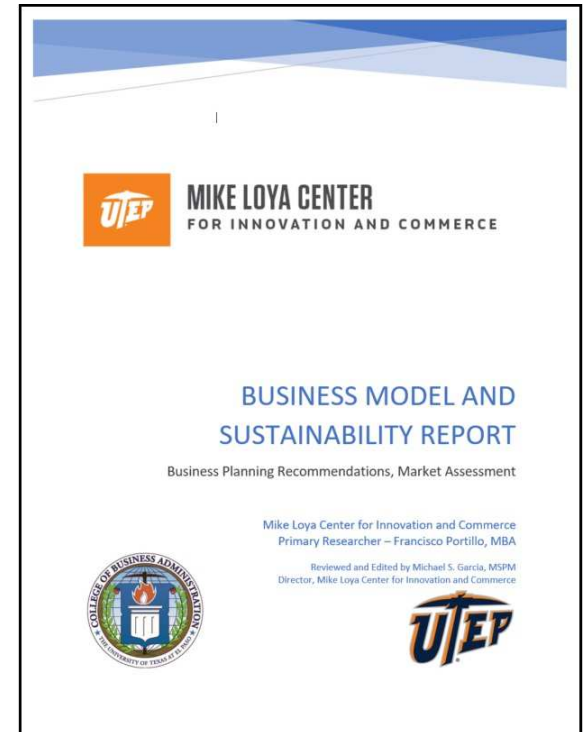
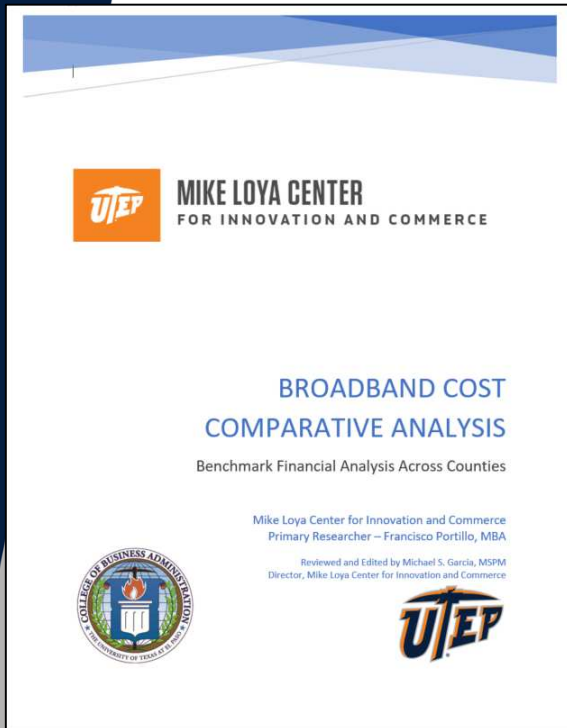
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**Revised and Edited by:**

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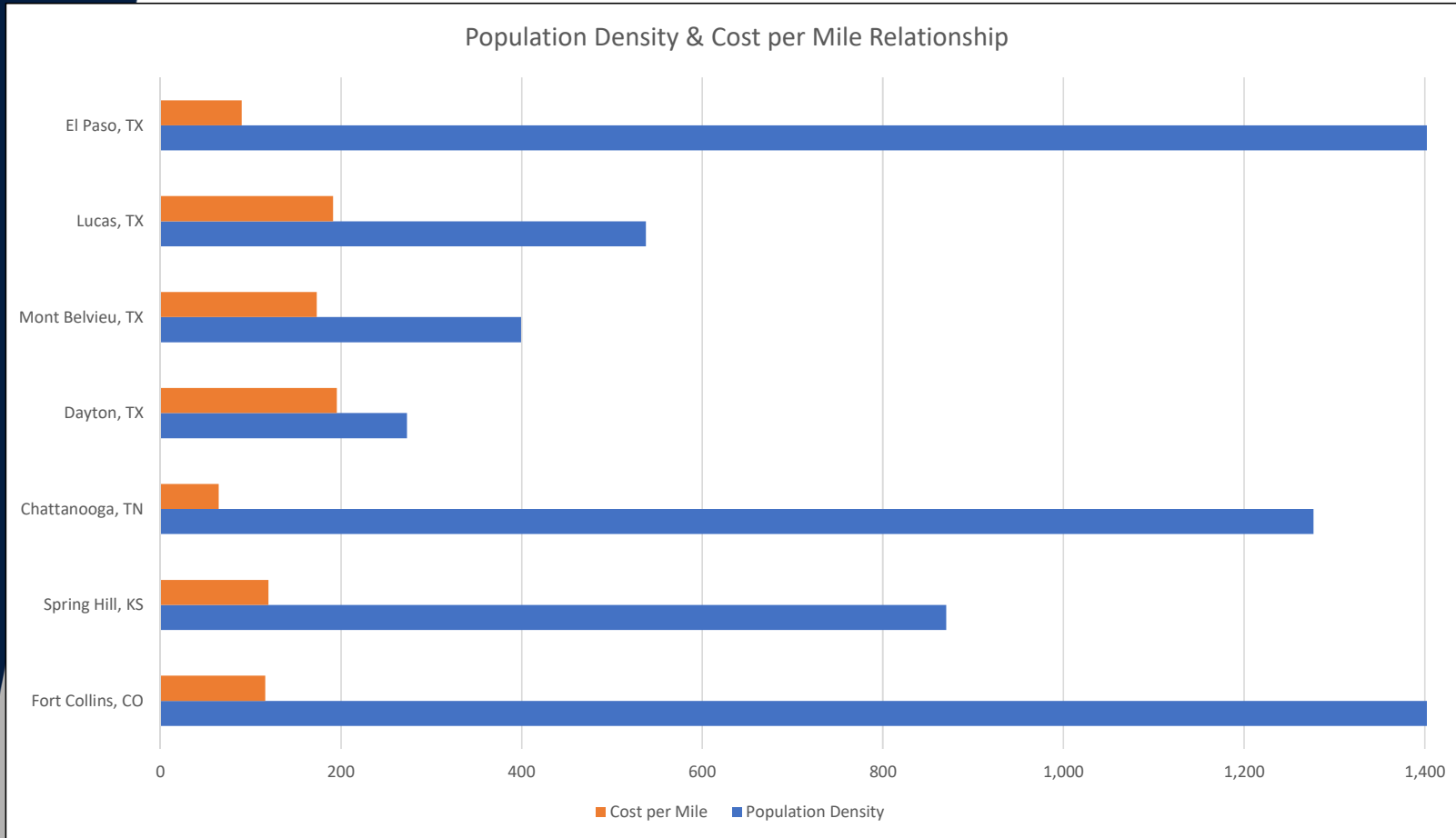
## Broadband Comparative Cost Analysis – Where Did We Look and Why?

Location	Land Area in Square Miles	Population	Households	Population Density	Median Household	Per Capita Income
El Paso, TX	260	839,238	268,310	3,228	\$46,871	\$21,683
Fort Collins, CO	57.06	174,871	70,429	3,036	\$62,132	\$34,482
Spring Hill, KS	8.42	7,326	2,158	870	\$80,357	\$29,507
Santa Monica, CA	8.42	92,987	50,912	11,043	\$96,570	\$75,481
Chattanooga, TN	143.2	182,799	75,940	1,277	\$45,527	\$30,592
Dayton, TX	30.7	8,389	3,024	273	\$52,179	\$29,123
Mont Belvieu, TX	16.46	6,574	2,199	399	\$94,560	\$46,518
Lucas, TX	15.91	8,553	2,228	409.9	\$160,278	\$67,708

- Recent Successful Prior Efforts
- Well Documented in the Public Domain
- Similar Demographics -with focus on smaller rural areas – Canutillo, Anthony, Socorro, Clint
- In-state examples
- Open to external inquiry

# Broadband Comparative Cost Analysis

## Population Density – Perhaps the Most Important Demographic...



El Paso County can expect *lower infrastructure costs due increased number of passings per mile* constructed through more densely populated areas. More passings mean more connections per mile. Similarly, cities with less population density may need to build more miles of infrastructure to achieve the same broadband expansion success.



## Broadband Comparative Cost Analysis - Legal Challenges and Policy Solutions

**Mont Belvieu, TX** – Successful challenge of Chapter 1205 of Texas Government Code. Set the precedent in Texas that the Internet is not a "telecommunications provider" as defined by the Texas Code, a Municipal ISP is therefore not prohibited.

**Chattanooga, TN** - April 2008, unsuccessful Comcast legal challenge against Chattanooga Electric Power Board claiming illegal subsidy of municipal fiber buildout with ratepayer funds.

### Successful "Dig-Once" Rights-of-Way Management Policies:

**Boston, MA** – In 1994, Boston was one of the first cities to put forth a mandate to require all telecommunications carriers to install public underground conduits in any trenching at the same time on a shared-cost basis.

**San Francisco, CA** – Established a *Communication Infrastructure in Excavation Projects* ordinance to ensure that fiber and conduit were included in construction projects and multiple excavations were minimized when feasible.

**Sandy, OR** – Enforced an ordinance requiring all new development to install underground fiber along with other utilities. The code adaption expanded the existing policy, adding broadband fiber to the list of public facilities.

**San Benito, CA** – Dig Once policy is now part of its *Complete Streets* initiative, including a provision for a full range of fiber infrastructure distribution, above and below ground.

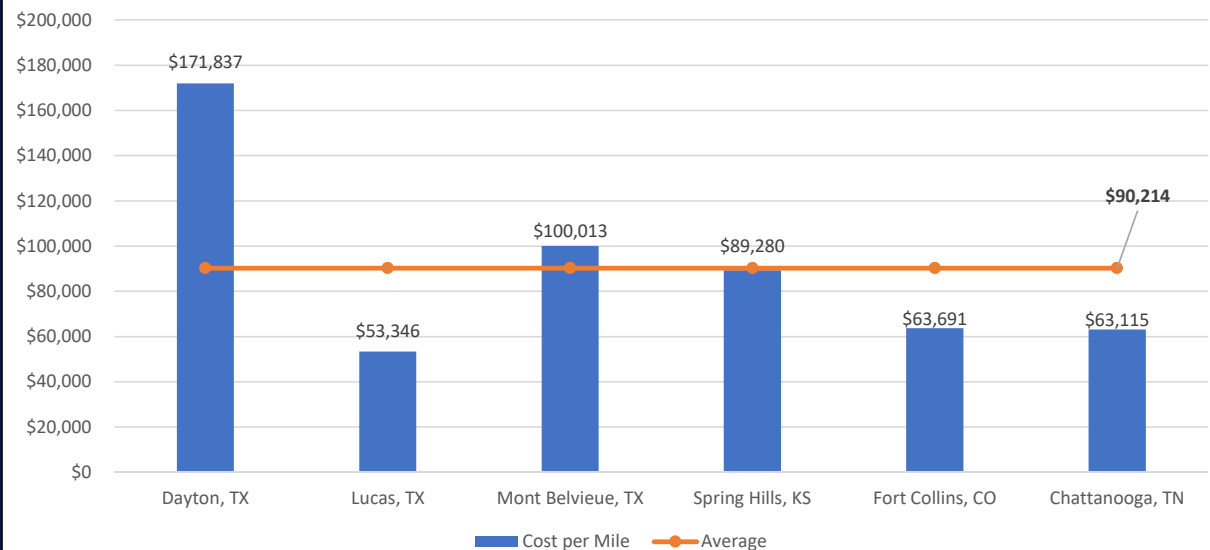
### Dig Once Model Legislation:

<https://www.duraline.com/about-us/news/dig-once-model-legislation/>



## Broadband Comparative Cost Analysis Final Numbers...

Adjusted Average Cost per Mile



Comparative Cost of Living Indices

Location	COLI	Percent Difference
El Paso, TX	81.4	Base Index
Dayton, TX	91.3	12.2% more expensive
Lucas, TX	140.1	72.1% more expensive
Mont Belvieu, TX	115.8	42.3% more expensive
Spring Hills, KS	102.2	25.6% more expensive
Fort Collins, CO	118.3	45.3% more expensive
Chattanooga, TN	83.8	2.9% more expensive

Cost of Basic Internet Service

Location	Subscriber	Monthly Price
Fort Collins, CO	Residential	\$59.95
Spring Hills, KS	Residential	\$69.00
Dayton, TX	Residential	TBD
Mont Belvieu, TX	Residential	\$75.00
Chattanooga, TN	Residential	\$57.99
Lucas, TX	Residential	\$115.00
Santa Monica, CA	Residential	\$69.00
<b>Total Average Price</b>		<b>\$74.32</b>



## Broadband Comparative Cost Analysis Final Numbers...

### Average Cost per Passing

Location	Cost per Passing
Fort Collins, CO	\$984
Spring Hills, KS	\$1,700
Dayton, TX	\$2,825.41
Mont Belvieu, TX	\$2,251.67
Chattanooga, TN	\$1,099
Lucas, TX	\$4,230.18
Santa Monica, CA	\$12,326
<b>Total Average Price</b>	<b>\$2,181.71</b>

### Average Build to Operate Time

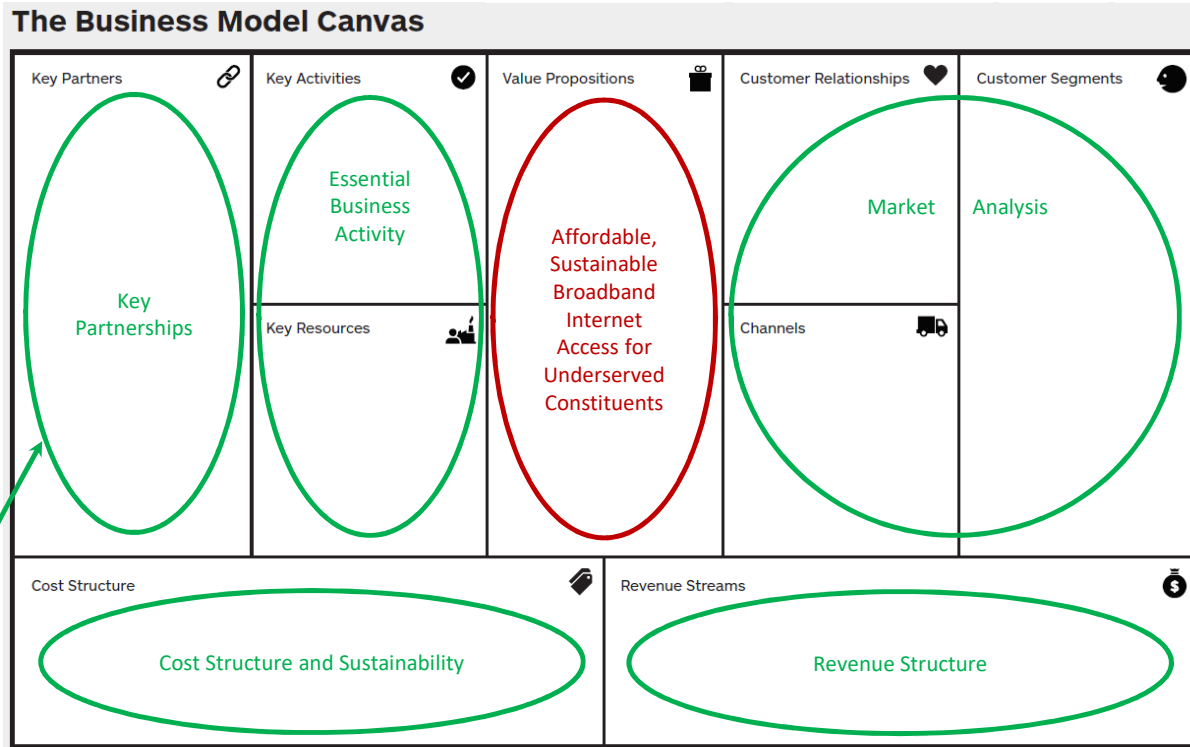
Location	Build to Operate Time in Years
Fort Collins, CO	5
Spring Hills, KS	4
Dayton, TX	2
Mont Belvieu, TX	2
Chattanooga, TN	-
Lucas, TX	2
Santa Monica, CA	3
<b>Average</b>	<b>3.0</b>

### Average Initial Investment

Location	Capital Investment
Fort Collins, CO	\$142,000,000
Spring Hills, KS	-
Dayton, TX	\$13,700,000.00
Mont Belvieu, TX	\$14,000,000.00
Chattanooga, TN	\$222,000,000
Lucas, TX	\$23,910,000.00
Santa Monica, CA	\$530,000
<b>Total Average Capital Investment</b>	<b>\$83,122,000.00</b>

*Santa Monica was excluded as an outlier, - they used an incremental approach to broadband expansion resulting in a very small initial investment.*

# Business Model and Sustainability Report



DO NOTHING



POLICY



PUBLIC-PRIVATE-PARTNERSHIP(P3)



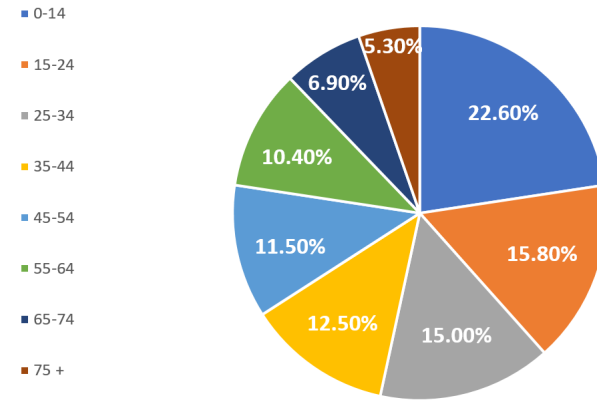
CITY-OWNED



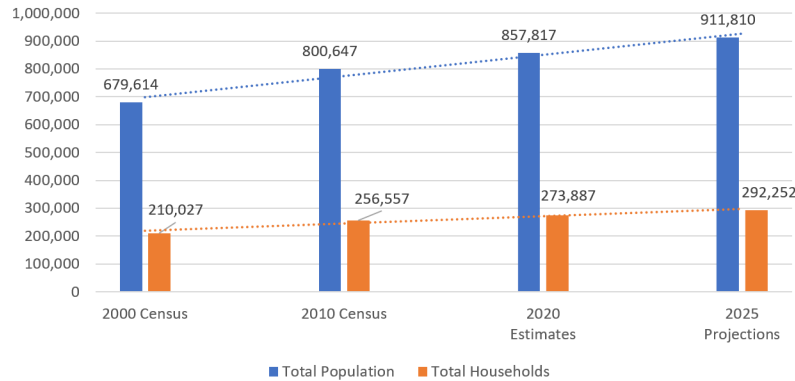
# Business Model and Sustainability Report – Market Profile

ISP	Connection	Speed	Price
AT&T	Fiber	1,000mbps	\$35.00 per month
Spectrum	Cable	940mbps	\$49.99 per month
VIASAT	Satellite	100mbps	\$50.00 per month
Windstream	Satellite	50mbps	\$60.00 per month
HughesNet	Satellite	25mbps	\$49.99 per month
<b>Average Price</b>			<b>\$49.00</b>

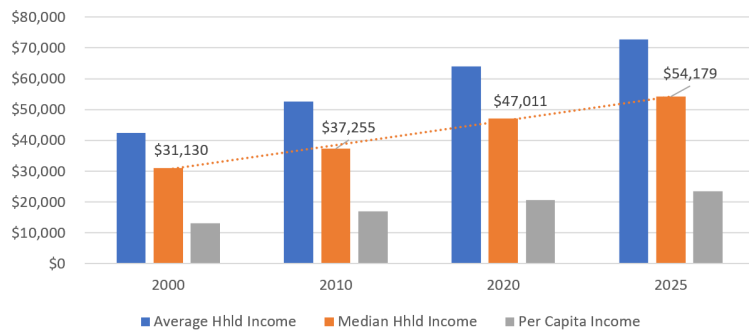
Population by Age 2020



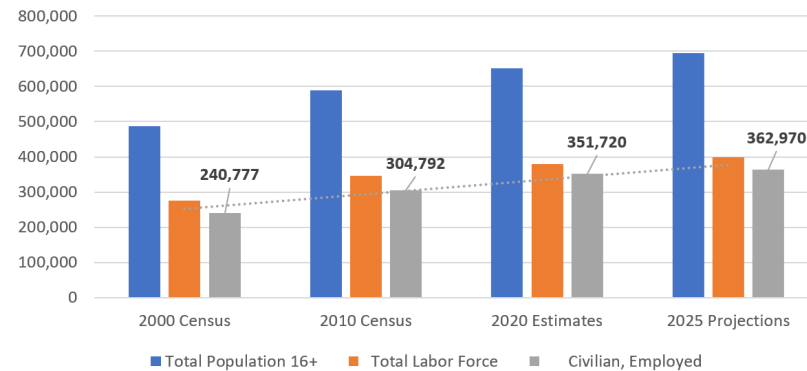
Population Increase 2000-2025



Income 2000-2025



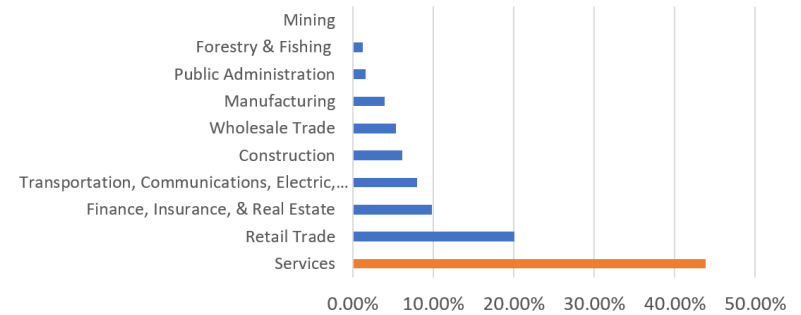
Labor Force 2000-2025



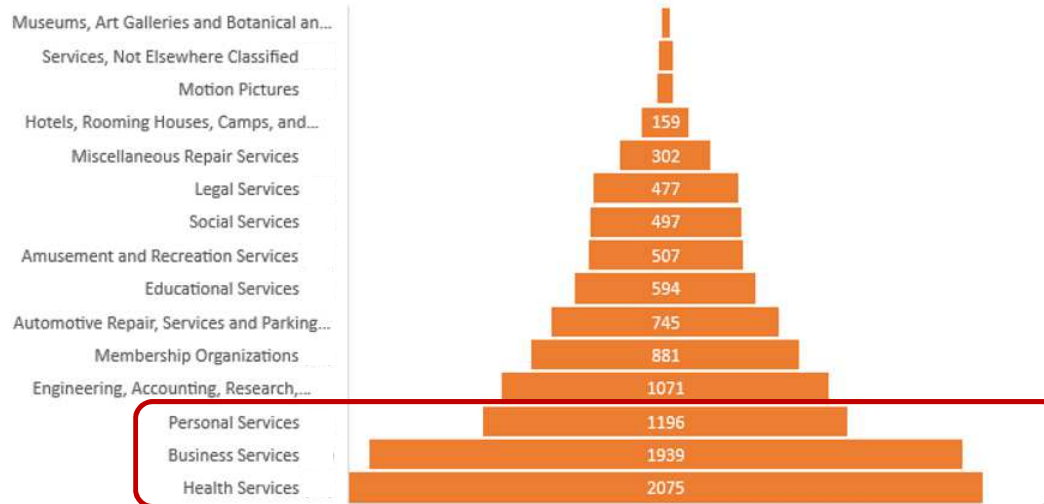
# Business Model and Sustainability Report – Market Profile

Standard Industrial Classification	Q4 2020 Establishments
Services	43.85%
Retail Trade	20.07%
Finance, Insurance, & Real Estate	9.81%
Transportation, Communications, Electric, Gas, & Sanitary Services	7.95%
Construction	6.13%
Wholesale Trade	5.33%
Manufacturing	3.93%
Public Administration	1.56%
Forestry & Fishing	1.26%
Mining	0.10%

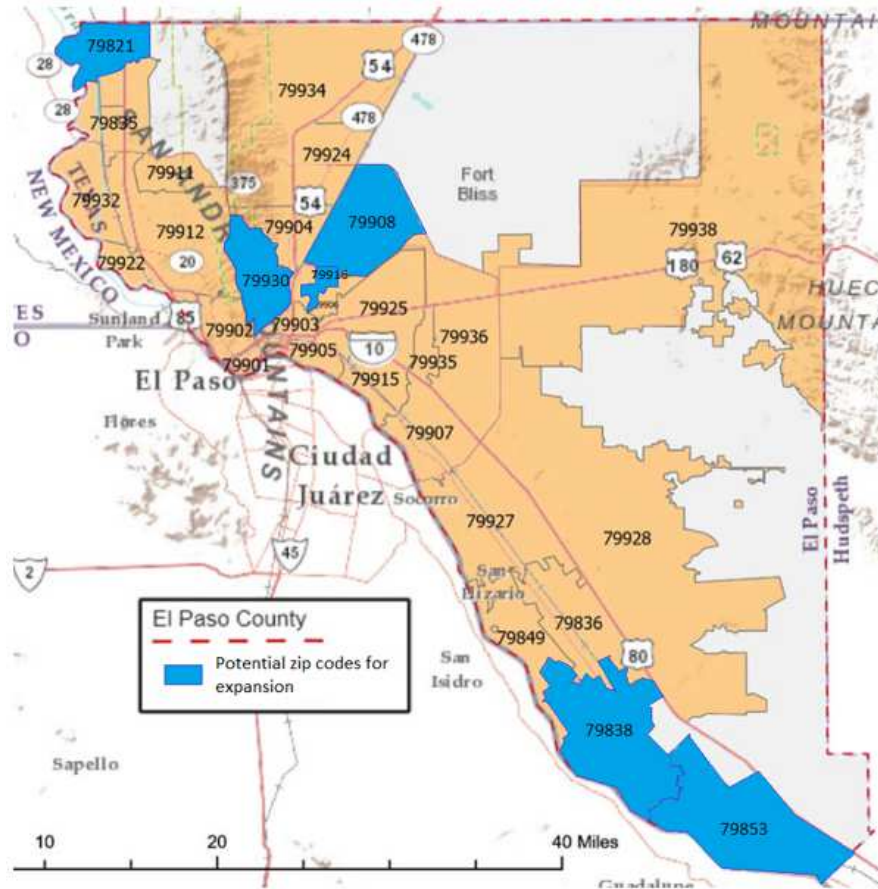
Q4 2020 Establishments



Services Sub Categories



## Business Model and Sustainability Report Initial Geography/Demography of Consideration



Zip Code	Estimated Total Premises	Internet Coverage	Miles
79908	3100	Low	20.26
79853	3100	Low	73.40
79916	3100	Low	15.06
79821	10100	Low	67.93
79838	10100	Low	93.84
79930	10450	Low	142.27

- Initial assumptive goal of providing service to **20,000** underserved households and business premises.
- One course of action would be to focus on two low-coverage zip codes constituting numbers of premises in this assumptive range, for example:
  - Zip code 79930 with 142.27 miles covering approximately 10,450 premises and zip code 79838 with 93.84 miles are covering approximately 10,100 premises.
  - Resulting in a total of 20,550 premises across 236.11 miles of new infrastructure construction

Source: Hunt Institute using Federal Communication Commission data. ????????

## Business Model and Sustainability Report – Costs

Passing Cost	
Network Construction	\$21,240,000
Average Cost per Mile	\$90,000
Miles	236
Premises	20,000

**Average Cost per Passing \$1,062**

Drop Cost	Average per Drop
Equipment	\$140
Materials	\$196
Labor	\$420

**Average Drop Cost \$756**

Customer Service Operating Expense Alt.



Capital Requirements	
Network Construction	\$21,240,000
Average Cost per Mile	\$90,000
Miles	236
Premises	20,000
Drop Cost per Premise	\$1,062
Total Drop Cost	\$21,240,000

**Total Cost \$42,480,000**

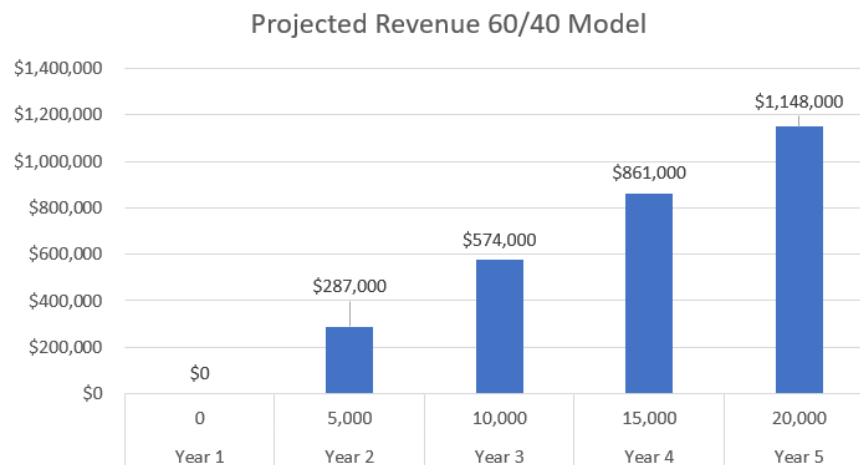


# Business Model and Sustainability Report

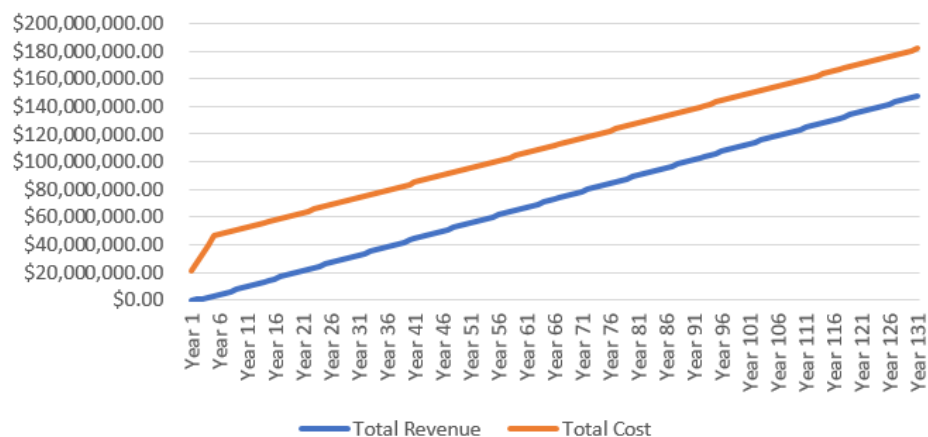
## Revenue and Sustainability – Pure Municipal

The most optimistic revenue model assumes 60% of residential customers will choose the standard option of \$49.00 a month, and 40% of residential customers will choose the premium speed package option at \$70.00 a month. This projection most closely resembles more realistic markets based on current price averages and consumer preferences. In this model, customer retention is critical to maintaining constant revenue year to year, with an increased uptake rate of 25% each year for the first five years:

	Year 1	Year 2	Year 3	Year 4	Year 5
Residential Basic Pack	0	3,000	6,000	9,000	12,000
Residential Premium Pack	0	2,000	4,000	6,000	8,000
<b>Revenue</b>	<b>\$0</b>	<b>\$287,000</b>	<b>\$574,000</b>	<b>\$861,000</b>	<b>\$1,148,000</b>



Total Cost vs Total Revenue



Even assuming no maintenance cost, no increase in premises or workforce, a 100% uptake and retention rate and using current dollars, we can predict that a purely municipal model based solely on internet services is not feasible.



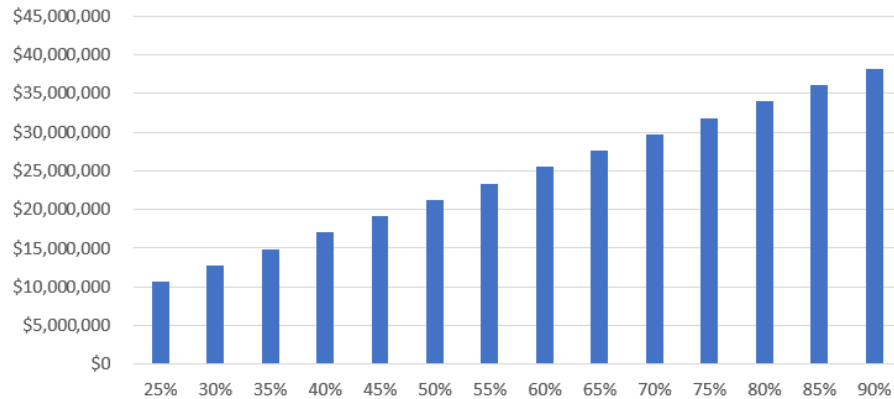
# Business Model and Sustainability Report

## Revenue and Sustainability – Public-Private Partnership

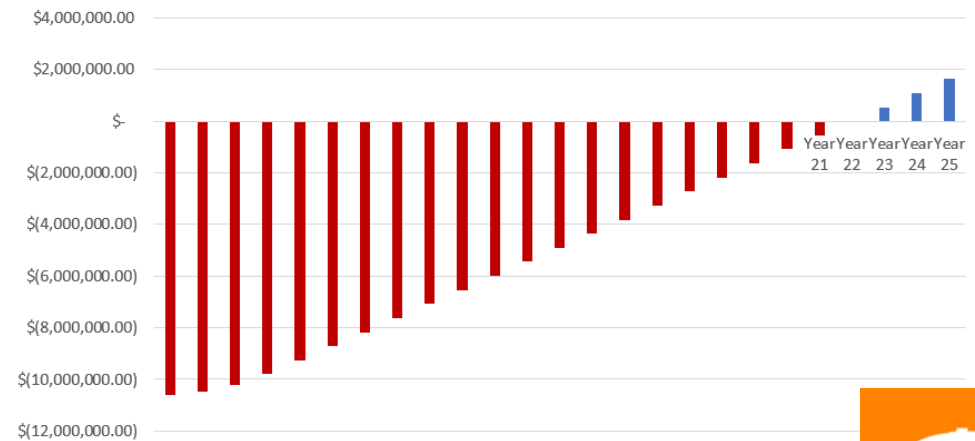
Capital Requirements	
Network Construction	\$21,240,000
Average Cost per Mile	\$90,000
Miles	236
Premises	20,000
Drop Cost per Premises	\$1,062
<b>Total Drop Cost</b>	<b>\$21,240,000</b>
<b>Total Cost</b>	<b>\$42,480,000</b>

Percent per Subscriber	Year 1	Year 2	Year 3	Year 4	Year 5
Residential Basic Pack	\$0	3,000	6,000	9,000	12,000
45%	0	\$ 66,150.00	\$ 132,300.00	\$ 198,450.00	\$ 264,600.00
Residential Premium Pack	0	2,000	4,000	6,000	8,000
50%	\$0	\$ 70,000.00	\$ 140,000.00	\$ 210,000.00	\$ 280,000.00
<b>Revenue</b>	<b>\$0</b>	<b>\$ 136,150.00</b>	<b>\$ 272,300.00</b>	<b>\$ 408,450.00</b>	<b>\$ 544,600.00</b>

Percent Cost of Investment



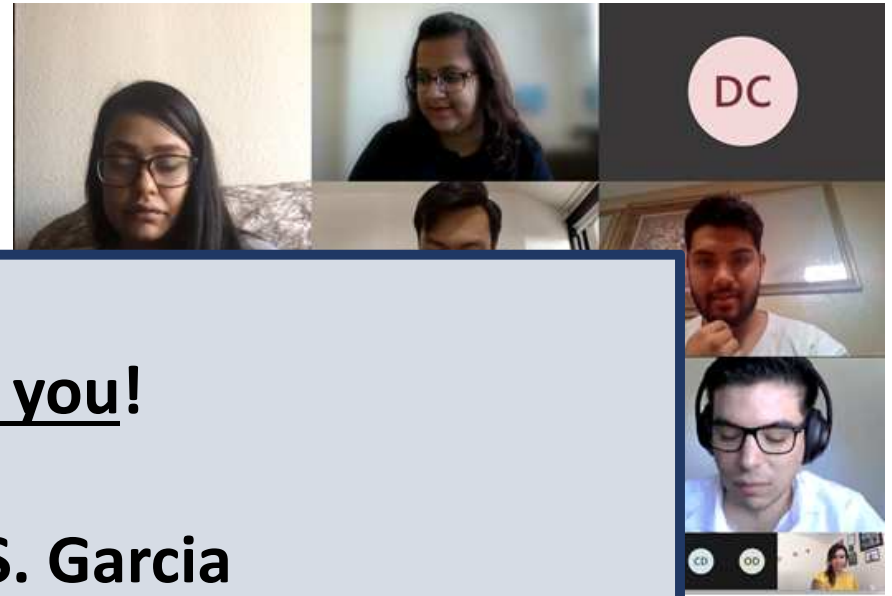
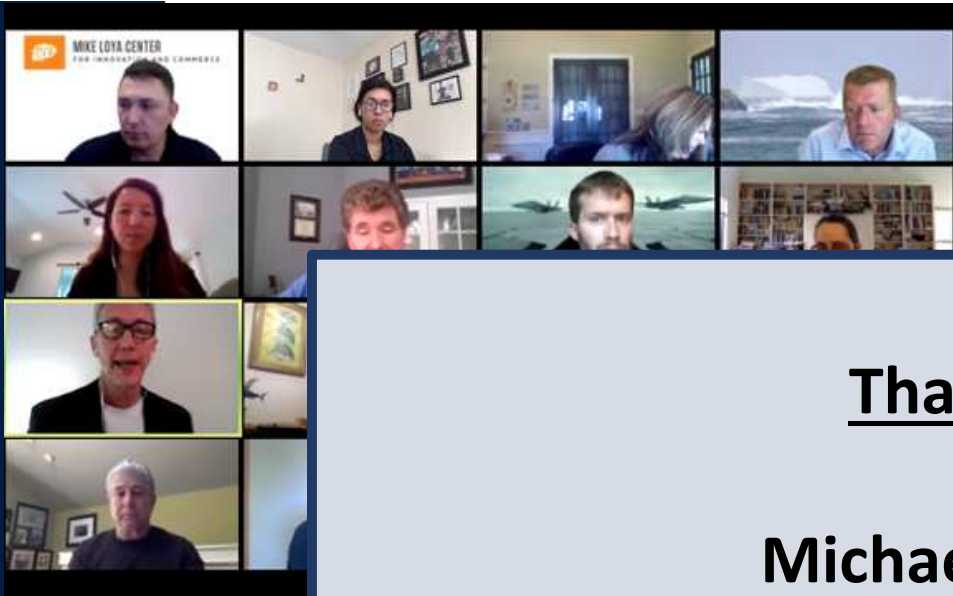
Break-Even Projection



# Summary of Recommendations

- A 100% municipally owned and operated ISP is not sustainable and not recommended. Expected revenue would never exceed high investment, maintenance and operating costs.
- Recommend significant County investment in broadband infrastructure development through a public/private partnership with existing communications service provider(s), leveraging existing fiber-based infrastructure that may already exist within those providers.
- Recommend maximum utilization of widely available broadband infrastructure grant funding to minimize long-term financial obligations and tax burden on the community. Examples:
  - [American Rescue Plan \(Emergency Broadband Benefit program\)](#)
  - [INVEST in America Act / Infrastructure Investment and Jobs Act](#)
  - [Broadband Equity, Access and Deployment \(BEAD\) Program](#)
  - [Affordable Connectivity Program](#)
  - [Digital Equity Act](#)
  - [Tribal Broadband Connectivity Program](#)
  - [Middle Mile Grant Program](#)
- Recommend broad-based RFP seeking to assemble a consortium of public/private partners with significant established fiber-based infrastructure/capability.
- Recommend establishing a “Regional Broadband Authority” – a public consortium of Government, Business, and Community leaders who have the vested authority to bring together related but disparate efforts into a single, unified and universally agreed upon path for long-term, regional broadband expansion.
- Recommend rapid development and implementation of “broadband infrastructure friendly” public policy.
- Recommend care in establishing municipal ownership of infrastructure – ownership implies maintenance responsibility, which may approach 20% of initial investment cost, for the useful life of the asset.
- Recommend care in counting cost savings that may be implied by “the County giving itself free broadband service” from a municipal ISP – such service will have to serve a large number of people and expansive physical facilities consuming huge numbers of labor hours and material that will have to be paid for by someone – who will that be?  
Private partner rate payers? City/County tax payers? Nothing is free...

The FCC is preparing to revise its Federal broadband coverage maps. Recommend placing significant focus and resources into assuring those maps are true, correct, and not “fudged” in favor of ISPs.



Thank you!

**Michael S. Garcia**

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