Broadband Master Plan & Digital Infrastructure Design

City of Lathrop

Agenda

- Background & Goals

- Scope of Work

- Asset Assessment

- Market Analysis

- Need Indicators

- Conceptual Network Design

- Construction Costs Estimate

- Financial Analysis

- 7 Key Recommendations

City of Lathrop, CA

Background

- In December 2022, the City of Lathrop applied for the Local Agency Technical Assistance (LATA) program Grant from the CPUC.

- On July 7, 2023, the City was awarded the full requested amount of $497,915.

- The City entered into a contract with Entrust, signed by the City Manager on July 31, 2023, and ratified by the City Council on August 14, 2023 with the acceptance of the Grant. Entrust was engaged to assist staff in developing a Broadband Master Plan and Digital Infrastructure Design, positioning the City to apply for the Last Mile Grant Funding, which had a deadline of September 29, 2023.

- On September 28, 2023, the City submitted an application to the California Public Utilities Commission (CPUC) for $11,704,239 for Phase 1.

Goals

- Targeting improved City connectivity for delivery of public services

- Expanding existing City fiber & conduit

- Promote economic development

- Enhance community access & affordability

- Increase internet provider competition

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Scope of Work

- Asset Inventory
  - 39.9 miles of conduit
    - 13.9 miles of fiber

- Market Assessment
- Needs Assessment
  - Survey
  - Stakeholder focus groups
  - Digital resource tool
- Gap Analysis
- Conceptual Network Design
- Phased Implementation Plan

- Business Model Evaluation
- Partner RFP Development & Evaluation
- Partner Terms & Negotiations
- Network Design Engineering
  - 147,128 feet of city-wide fiber
  - 30% High Level Design (HLD)
  - 60% Low Level Design (LLD)
  - 90% Final Design & Bid Package
    - Bill of Materials (BOM)
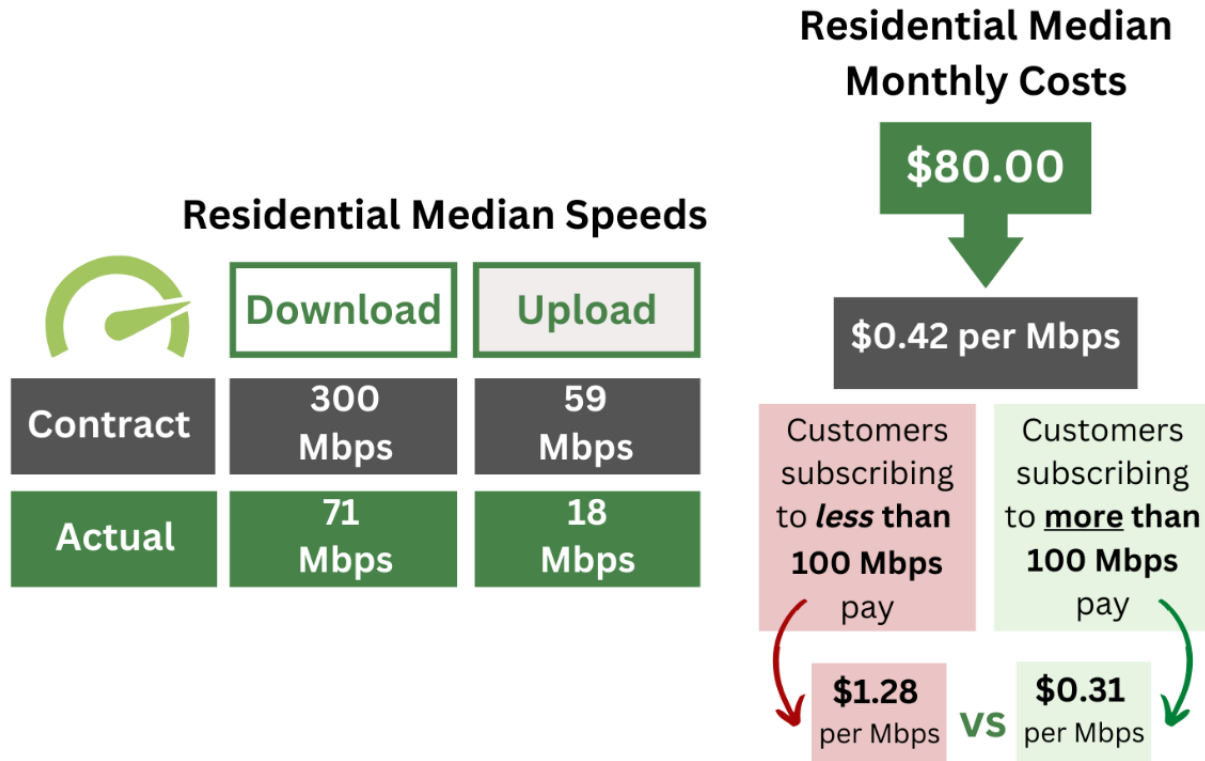   - Public Engineer (PE) Stamps
    - Permitting

Market Analysis

* - Fiber services <u>only</u> available on west side of Interstate 5

ISP	Network	Max Download Speed	Max Upload Speed	Promotional Term	Promotional Monthly Rate
Comcast / Xfinity	Cable	75 Mbps	10 Mbps	1 year	$ 20
		200 Mbps	10 Mbps	1 year	$ 30
		400 Mbps	25 Mbps	2 years	$ 50
		800 Mbps	25 Mbps	2 years	$ 60
		1 Gbps	35 Mbps	2 years	$ 60
		1.2 Gbps	35 Mbps	2 years	$ 70
		2 Gbps	35 Mbps	2 years	$ 120
AT&T	DSL	758 Kbps – 75 Mbps	500 Kbps - 5 Mbps	1 year	$ 55
	Fiber*	300 Mbps	300 Mbps	2 years	$ 35
		500 Mbps	500 Mbps	2 years	$ 45
		1 Gbps	1 Gbps	2 years	$ 80
		2 Gbps	2 Gbps	2 years	$ 150
		5 Gbps	5 Gbps	2 years	$ 250
Frontier	DSL	758 Kpbs – 75 Mbps	500 Kpbs - 5 Mbps	1 year	$ 65
Verizon	Wireless	50 Mbps	5 Mbps	None	$ 25
		300 Mbps	50 Mbps	None	$ 60
T-Mobile	Wireless	182 Mbps	35 Mbps	None	$ 50

Need Indicators

Community Survey

Residential Median Speeds

	Download	Upload
Contract	300 Mbps	59 Mbps
Actual	71 Mbps	18 Mbps

Residential Median Monthly Costs

$80.00

↓

$0.42 per Mbps

Customers subscribing to *less* than 100 Mbps pay → $1.28 per Mbps

VS

Customers subscribing to <u>more</u> than 100 Mbps pay → $0.31 per Mbps

* - Businesses pay average of $265/month, or $3.57 per MB

Census Data

- % of Households No Internet access <u>higher</u> than national average
  - East of I-5 between Lathrop Rd & Louise Ave
- Areas correspond to HUD low- to moderate-income census blocks

ENTRUST SOLUTIONS GROUP

City of Lathrop, CA

Conceptual Network Design

Phase 1 – City Sites & Grant Priorities

- 24.7 miles
- 12 Tier 1 City Sites
- 700+ grant-eligible CPUC "unserved" locations
- 2,040 resident & business passings

Phase 2 – Core Public Facilities

- 7.4 miles
- 63 City/public facilities
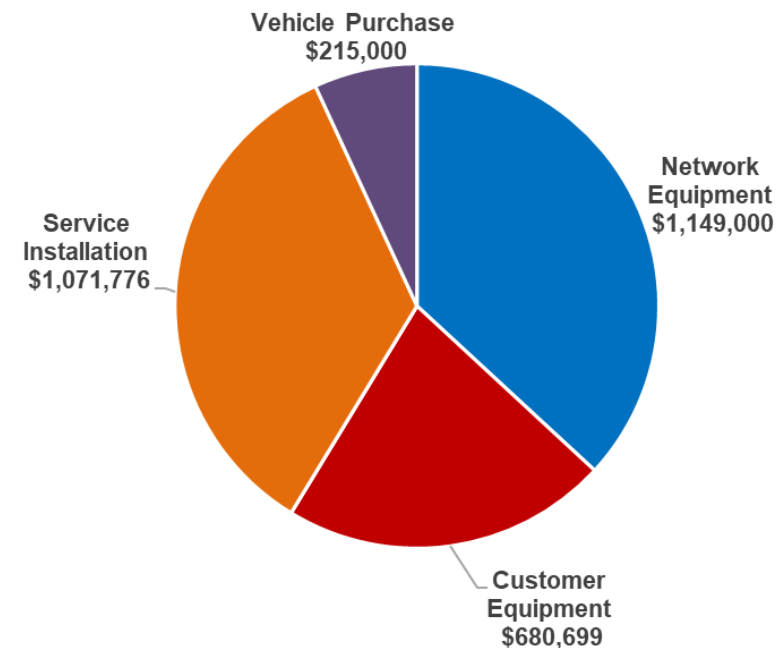- 547 passings

Phase 3 – Community Anchors

- 7.5 miles
- 54 public sites & institutional anchors
- 1,076 passings

Construction Cost Estimates

	Length (LF)	$/LF	Estimated Cost
Phase 1			
New Fiber in Existing Conduit	31,502	$ 30	$ 945,072
New Underground Backbone	49,267	$ 125	$ 6,158,345
New Aerial Backbone	54,967	$ 60	$ 3,298,048
Service Drops/Laterals	5,148	$ 80	$ 411,840
PHASE 1 TOTAL	*140,885*		*$ 10,813,304*
Phase 2			
New Fiber in Existing Conduit	4,615	$ 30	$ 138,450
New Underground Backbone	34,270	$ 125	$ 4,283,739
Service Drops/Laterals	13,052	$ 80	$ 1,044,140
PHASE 2 TOTAL	*51,937*		*$ 5,466,329*
Phase 3			
New Fiber in Existing Conduit	3,802	$ 30	$ 114,060
New Underground Backbone	35,944	$ 125	$ 4,493,045
Service Drops/Laterals	16,188	$ 80	$ 1,295,035
PHASE 3 TOTAL	*55,934*		*$ 5,902,140*
TOTAL - ALL PHASES	**248,756**		**$ 22,181,773**

Financial Analysis

- Commercializing the City's network will require significant additional funds
  - Start-up capital (CAPEX) separate from network backbone construction
  - Operational expenses (OPEX)
  - ISP partner can leverage economy of scale and existing staff to **reduce OPEX**
- Existing Network + Phases 1-3
  - 3,406 residential passings
  - 257 business passings
  - Assume standard 30% take rate
  - Start-up CAPEX: $3.1 M
  - Annual OPEX: $2.2 M

Vehicle Purchase $215,000
Network Equipment $1,149,000
Service Installation $1,071,776
Customer Equipment $680,699

9/9/2024

City of Lathrop, CA

7 Key Recommendations

1) **Expand the City fiber network** to improve public services connectivity and expand community broadband access.

2) Solicit & negotiate a **public-private partnership** that creates an economy of scale in Lathrop.

3) Geo-code the City's existing fiber and conduit network to fully **utilize, monetize, and leverage** City assets.

4) Formalize existing City processes to maximize **CIP and utility coordination** and memorialize dedication of new public assets in developer agreements.

7 Key Recommendations

5) **Bridge the Digital Divide** between the old and new Lathrop by centralizing digital resources.

6) Pursue **state and federal broadband grants** to address at-need areas of the City.

7) Leverage the City's inventory of **street light poles to expand wireless coverage**, speeds, and service.

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