



## City of Palo Alto Utilities Advisory Commission Staff Report

(ID # 14582)

**UAC MEETING**

August 03, 2022

☒ Received Before Meeting

Staff: Dave Yuan

Consultant: John Honker

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**Meeting Date: 8/3/2022**

**Report Type: VII. NEW BUSINESS**

**Title: Discussion of Preliminary Internet Survey Results and Financial Business Models for Palo Alto Fiber**

**From: Director of Utilities**

**Lead Department: Utilities**

This item is for discussion and no action is requested. Staff will present preliminary results and findings of the internet survey and financial forecasts of three business models (insource, hybrid, outsource) and financial plan. Staff seeks input from the Utilities Advisory Commission (UAC) in preparation of the joint Council/UAC study session scheduled on September 19, 2022.

On June 23, 2022, the City launched the internet services market research survey and Palo Alto Fiber deposit program. The internet survey seeks responses from Palo Alto residents and businesses to learn more about their internet preferences and service needs. The data received through the survey will give guidance to the City Council when they determine next steps for the Palo Alto Fiber project and determining service details like pricing and speeds. The new deposit program is a means to demonstrate the community's strong support for seeing the Palo Alto Fiber internet services project through to fruition. As with any City project, community input is essential to ensuring the City Council knows where the community stands. By submitting a \$50 deposit for the Palo Alto Fiber project, residents and businesses are demonstrating strong support for their neighborhood and district obtaining locally controlled fiber internet services. As of July 13, 2022, the City has received 2,350 survey responses and 498 deposits. The survey will be available through the end of July to gain as much community responses as possible. The City Council and Utilities Advisory Commission will host a joint study session on September 19, 2022 to review the survey results and FFTP financial models.

The Business Case evaluates three City-operated ISP models. The City can provide ISP with (1) 100% in-house staffing; (2) hybrid of insource (i.e. 70%) and outsource (i.e. 30%) (3) outsource all functions to multiple strategic vendors. Some broadband functions are core competencies and can be easily managed by the City, while other functions are new and can be outsourced where the City doesn't have the expertise in-house. Subsequently, outsourced functions have the potential to slowly be brought in-house through hiring and as City staff becomes more comfortable with the day-to-day operations of the fiber network. Magellan has identified specific advantages and disadvantages for each model which will be discussed at the meeting.

- Insource  
Pros: Total control; quality of service; institutional knowledge  
Cons: Highest labor costs; higher learning curve
- Hybrid of Insource and Outsource  
Pros: Flexible start-up and scalability  
Cons: High labor costs; higher contract costs; contract risks
- Outsource  
Pros: Lower labor costs; experienced vendors  
Cons: Risk of lower service levels; no institutional knowledge; contract risks

**Attachments:**

- Attachment A: Presentation

Staff: Dave Yuan

Consultant: John Honker

## Utilities Advisory Commission

### Palo Alto Fiber Update – Preliminary Internet Survey Results and Financial Business Models

August 3, 2022



# AGENDA

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- **Project Update**
- **Preliminary Survey Update**
- **Business Models**
  - **Insource**
  - **Hybrid**
  - **Outsource**
- **Preliminary Pro Forma Financials**
- **UAC Feedback for Joint Council Study Session**

# Project Update



Planning Area	Focus (Checkmark means complete)
<b>Business Operations</b>	<ul style="list-style-type: none"> <li>✓ Management</li> <li>✓ Customer Service</li> <li>✓ Billing &amp; Finance</li> <li>✓ Sales &amp; Marketing</li> <li>✓ Market Analysis &amp; Competitive Assessment</li> <li>✓ Technology Change &amp; Obsolescence</li> <li>✓ Network Operations</li> <li>✓ Tech Support</li> <li>✓ Engineering</li> </ul>
<b>Regulatory Review</b>	<ul style="list-style-type: none"> <li>• State Agencies: CPUC</li> <li>• Federal Agencies: FCC, USAC</li> <li>• Compliance &amp; Reporting Requirements</li> </ul>
<b>Governance/Operational Models Models</b>	<ul style="list-style-type: none"> <li>✓ Organizational Structure</li> <li>✓ Policies, Procurement, Rate Setting and Management Decision Guidelines</li> </ul>
<b>Preliminary Pro Forma Financials</b>	<ul style="list-style-type: none"> <li>✓ Capital Plan</li> <li>✓ Staffing Plan</li> <li>✓ Rate Sheets and Packages</li> <li>✓ Income Statement</li> <li>✓ Borrowing Schedules</li> </ul>
<b>Final Pro Forma Financials</b>	<ul style="list-style-type: none"> <li>• Update Capital Plan Based on Final Engineering Design</li> <li>• Update Take Rates and Income Statement Based on Survey Results</li> <li>• Provide Final Set of Financials with Sensitivity Analysis</li> </ul>
<b>Fiber Engineering Design</b>	<ul style="list-style-type: none"> <li>✓ 90% Design Complete</li> <li>• 100% Final Construction Prints in Aug-Sept</li> </ul>







# PRELIMINARY SURVEY UPDATE



Total Surveys Emails	21,925
Surveys Complete 7/13	2,350 10.7% Response Rate
Surveys Complete 7/20	3,177 14.5% Response Rate
\$50 Deposits Received 7/20	672

# PRELIMINARY SURVEY UPDATE

How much do you pay each month for your internet services, not including other services such as television or telephone?

Value		Percent	Count
\$20 - \$40 Per Month		7.9%	222
\$41 - \$60 Per Month		28.0%	790
\$61 - \$80 Per Month		28.3%	797
\$81 - \$100 Per Month		19.3%	544
\$101 - \$120 Per Month		8.7%	246
More Than \$120		7.8%	221
<b>Totals</b>			<b>2,820</b>

# PRELIMINARY SURVEY UPDATE







What company provides your internet service at home?

Value		Percent	Count
Comcast/Xfinity		67.2%	1,916
AT&T		24.0%	685
Sonic		5.3%	152
Etheric		0.2%	5
Unsure		0.4%	10
Other - Write In		3.0%	85
Totals			2,853








# PRELIMINARY SURVEY UPDATE

Do you purchase other services with your home internet services?

Value		Percent	Count
Cable Television		28.8%	795
Home telephone service		25.8%	712
Other - Write In		7.8%	214
None of the above, I only subscribe to internet through my provider		54.7%	1,510






# PRELIMINARY SURVEY UPDATE

If you use cable television at home, would you consider switching to an internet streaming service like Netflix or Hulu over the next year?

Value		Percent	Count
Yes, I would cancel cable television and use just internet streaming		17.2%	446
I already subscribe to internet streaming and don't have cable television		53.9%	1,394
No, I would keep cable television and add internet streaming		11.8%	305
No, I would keep cable television, I'm not interested in internet streaming		2.7%	70
I'm not sure, I need more information about internet streaming		14.4%	372
<b>Totals</b>			2,587

# PRELIMINARY SURVEY UPDATE




Please rate your overall satisfaction level with your home internet service.

Value		Percent	Count
Very dissatisfied		7.3%	181
Somewhat dissatisfied		22.3%	552
Neither satisfied nor dissatisfied		12.8%	316
Somewhat satisfied		38.2%	945
Very satisfied		19.4%	480
<b>Totals</b>			<b>2,474</b>

# PRELIMINARY SURVEY UPDATE



If the City of Palo Alto were to offer high-speed internet services to your home, please select the top 3 reasons why you would switch from your current provider.

Item	Overall Rank	Rank Distribution	Score	Number of Rankings
Lower price	1		4,255	1,827
Faster speed	2		3,957	1,798
Higher reliability	3		3,450	1,779

# COMPETITIVE ANALYSIS

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**Final survey results will provide inputs to competitive analysis and threats, to be completed end of July; survey and deposits will remain open for ongoing engagement.**

- **What speeds should be provided?**
- **What features are most important?**
- **What do competitors charge today/future?**
- **What should Palo Alto charge?**
- **How elastic is the market?**
  - *What impact do pricing changes have on take rates?*
  - *What is the expected take rate at the optimal price?*

# STAFFING/VENDOR RESOURCES



**Determine best mix of  
existing resources, new  
hires and strategic vendors  
for Palo Alto Fiber**

Existing Resources	New Hires	Strategic Vendors
Finance & Accounting	Sales & Marketing	Tech Support
General Management	Operations Management	Overnight Customer Service
Billing	Field Services	Network Design
Customer Service	Customer Service	Construction
Legal	Service Quality Control	Construction Management & Inspections

# STAFFING ESTIMATES FOR BUSINESS MODELS



## Comparison of FTEs required for Outsource, Hybrid, Insource Models

### Year 6 In-House Staffing Estimates

Total FTE	Outsource	Hybrid	Insource
Assistant Director	1.00	1.00	1.00
Engineering & Operations Manager	1.00	1.00	1.00
Sales & Marketing Manager	1.00	1.00	1.00
Account Manager	1.00	1.00	1.00
Revenue & Accounting Manager	1.00	1.00	1.00
NOC Technicians	-	2.00	4.00
Customer Service Rep	-	2.00	3.00
Installation & Service Tech	-	2.00	3.00
Network Engineer	-	1.00	3.00
Customer Service Supervisor	-	1.00	2.00
Maintenance & Repair Tech	-	1.00	2.00
Billing Tech	-	1.00	1.00
Network Designer	-	1.00	1.00
Field Services Manager	-	1.00	1.00
<b>Total FTE</b>	<b>5.00</b>	<b>17.00</b>	<b>25.00</b>

One approach is to outsource functions during the first several years, then bring inhouse. Ramp down vendor contracts as insourcing occurs.

# SUMMARY OF STAFFING MODELS



Palo Alto Staffing Costs	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Insourced	\$1.93M	\$3.96M	\$4.92M	\$5.22M	\$5.35M	\$5.86M	\$6.01M	\$6.16M	\$6.31M	\$6.47M	\$52.18M
Hybrid	\$1.93M	\$3.34M	\$3.73M	\$3.82M	\$3.92M	\$4.02M	\$4.12M	\$4.22M	\$4.33M	\$4.43M	\$37.86M
Fully Outsourced	\$0.77M	\$1.26M	\$1.29M	\$1.32M	\$1.35M	\$1.39M	\$1.42M	\$1.46M	\$1.49M	\$1.53M	\$13.26M
Palo Alto FTEs											
Insourced	7	19	23	24	25	25	25	25	25	25	25
Hybrid	7	15	17	17	17	17	17	17	17	17	17
Fully Outsourced	3	5	5	5	5	5	5	5	5	5	5
Vendor Costs											
Insourced	\$0.00M	\$0.02M	\$0.09M	\$0.23M	\$0.32M	\$0.37M	\$0.37M	\$0.37M	\$0.38M	\$0.38M	\$2.51M
Hybrid	\$0.00M	\$0.09M	\$0.43M	\$1.13M	\$1.60M	\$1.83M	\$1.85M	\$1.86M	\$1.88M	\$1.89M	\$12.55M
Fully Outsourced	\$0.00M	\$0.18M	\$0.87M	\$2.26M	\$3.19M	\$3.66M	\$3.69M	\$3.72M	\$3.75M	\$3.78M	\$25.11M
Total Costs											
Insourced	\$1.93M	\$3.97M	\$5.01M	\$5.44M	\$5.67M	\$6.23M	\$6.38M	\$6.53M	\$6.69M	\$6.85M	\$54.70M
Hybrid	\$1.93M	\$3.43M	\$4.16M	\$4.95M	\$5.52M	\$5.85M	\$5.96M	\$6.08M	\$6.20M	\$6.32M	\$50.41M
Fully Outsourced	\$0.77M	\$1.44M	\$2.15M	\$3.58M	\$4.54M	\$5.05M	\$5.11M	\$5.18M	\$5.24M	\$5.31M	\$38.37M



# KEY TAKEAWAYS

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- **Consider the balance of quality/value versus risk/control**
- **Selection and retention of staff/vendor**
- **Risk mitigation may require multiple options**
- **Vendor management is critical**
- **Flexibility to adapt to changing market conditions**
- **Speed to market and scalability vital for success**

# FINANCIAL PLAN

Will change  
based on take  
rates, final  
design and rates



Costs	Original Estimates 2021	Late 2021 Current Estimates
Fiber Backbone	\$22.28M	\$25.62M
Fiber To The Home	\$85.97M	\$98.87M
Cost Savings if Built Together	-\$4.48M	-\$8.73M
Working Capital Set Aside	\$12.50M	\$12.50M
<b>Total Costs</b>	<b>\$116.27M</b>	<b>\$128.26M</b>

Funding	Original Estimates 2021	Current Estimates
Existing Fiber Fund	\$32.50M	\$32.50M
Contribution from Electric to Fiber Backbone	\$10.00M	\$10.00M
<b>Total Available Funding</b>	<b>\$42.50M</b>	<b>\$42.50M</b>

<b>Total New Funding Required</b>	<b>\$73.77M</b>	<b>\$85.76M</b>
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# SAMPLE PRICING BANDS



	Service Package	Estimated Monthly Rate
<b>Residential</b>	Internet Platinum - 10 Gbps	TBD
	Internet Platinum - 2 Gbps	\$95 - \$150
	Internet Gold - 1 Gbps	\$80 - \$95
	Internet Standard - 600 Mbps	\$60 - \$80
	Internet Basic - 200 Mbps	\$40 - \$60
<b>Commercial</b>	Premier Internet - 1 Gbps (Includes Dedicated Packages)	\$500 - \$1000
	Premium Internet - 500 Mbps	\$300 - \$500
	Select Internet - 250 Mbps	\$200 - 250
	Standard Internet - 100 Mbps	\$100 - \$150
	Basic Internet - 50 Mbps	\$60 - \$80
*Estimates based on market pricing as of 6/1/2022		

# FINANCIAL PLAN - INSOURCE

Will change  
based on take  
rates, final  
design and rates



	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Homes & Businesses With Access	7,499	15,036	22,611	30,223	30,374	30,526	30,679	30,832	30,986	31,141
Customers		481	2,410	6,278	8,870	10,172	10,254	10,336	10,419	10,502
<b>Take Rate</b>	<b>0%</b>	<b>3%</b>	<b>11%</b>	<b>21%</b>	<b>29%</b>	<b>33%</b>	<b>33%</b>	<b>34%</b>	<b>34%</b>	<b>34%</b>

Revenues	\$1.70M	\$2.01M	\$3.49M	\$7.11M	\$11.32M	\$14.10M	\$15.35M	\$15.83M	\$16.33M	\$16.85M
Cost of Providing Services	\$0.43M	\$2.90M	\$3.90M	\$4.30M	\$4.49M	\$5.04M	\$5.15M	\$5.27M	\$5.39M	\$5.52M
Gross Profit	\$1.27M	-\$0.87M	-\$0.33M	\$3.03M	\$7.16M	\$9.46M	\$10.62M	\$11.00M	\$11.39M	\$11.79M
<b>Gross Margin</b>	<b>75%</b>	<b>-43%</b>	<b>-10%</b>	<b>43%</b>	<b>63%</b>	<b>67%</b>	<b>69%</b>	<b>69%</b>	<b>70%</b>	<b>70%</b>
Sales, General & Administrative Expenses	\$1.05M	\$2.47M	\$2.61M	\$2.77M	\$2.94M	\$3.01M	\$3.09M	\$3.17M	\$3.25M	\$3.33M
Depreciation & Amortization	\$1.27M	\$2.24M	\$3.25M	\$4.44M	\$4.69M	\$4.81M	\$4.99M	\$5.26M	\$5.27M	\$5.27M
Net Income	-\$1.05M	-\$6.70M	-\$8.24M	-\$7.15M	-\$4.45M	-\$2.45M	-\$1.55M	-\$1.45M	-\$1.06M	-\$0.66M
<b>Cash Balance in Fund</b>	<b>\$32.72M</b>	<b>\$27.92M</b>	<b>\$22.30M</b>	<b>\$18.64M</b>	<b>\$17.55M</b>	<b>\$18.48M</b>	<b>\$18.60M</b>	<b>\$17.67M</b>	<b>\$20.07M</b>	<b>\$22.80M</b>

# FINANCIAL PLAN - OUTSOURCE

Will change  
based on take  
rates, final  
design and rates



	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Homes & Businesses With Access	7,500	15,036	22,611	30,223	30,374	30,526	30,679	30,832	30,986	31,141
Customers		481	2,410	6,278	8,870	10,172	10,254	10,336	10,419	10,502
<b>Take Rate</b>	<b>0%</b>	<b>3%</b>	<b>11%</b>	<b>21%</b>	<b>29%</b>	<b>33%</b>	<b>33%</b>	<b>34%</b>	<b>34%</b>	<b>34%</b>

Revenues	\$1.70M	\$2.03M	\$3.57M	\$7.33M	\$11.66M	\$14.50M	\$15.77M	\$16.27M	\$16.78M	\$17.31M
Cost of Providing Services	\$0.00M	\$0.77M	\$1.81M	\$3.91M	\$5.31M	\$6.04M	\$6.10M	\$6.15M	\$6.21M	\$6.26M
Gross Profit	\$1.70M	\$1.26M	\$1.76M	\$3.42M	\$6.34M	\$8.46M	\$9.67M	\$10.12M	\$10.58M	\$11.05M
<b>Gross Margin</b>	<b>0%</b>	<b>62%</b>	<b>49%</b>	<b>47%</b>	<b>54%</b>	<b>58%</b>	<b>61%</b>	<b>62%</b>	<b>63%</b>	<b>64%</b>
Sales, General & Administrative Expenses	\$0.90M	\$2.15M	\$2.28M	\$2.43M	\$2.59M	\$2.66M	\$2.73M	\$2.80M	\$2.87M	\$2.95M
Depreciation & Amortization	\$1.27M	\$2.24M	\$3.25M	\$4.44M	\$4.69M	\$4.81M	\$4.99M	\$5.26M	\$5.27M	\$5.27M
Net Income	-\$0.47M	-\$3.98M	-\$5.30M	-\$5.67M	-\$3.92M	-\$1.93M	-\$0.89M	-\$0.72M	-\$0.28M	\$0.19M
<b>Cash Balance in Fund</b>	<b>\$18.30M</b>	<b>\$31.15M</b>	<b>\$28.32M</b>	<b>\$25.93M</b>	<b>\$21.78M</b>	<b>\$21.36M</b>	<b>\$21.96M</b>	<b>\$21.57M</b>	<b>\$24.60M</b>	<b>\$28.02M</b>

# FINANCIAL PLAN - COMPARISON

Will change  
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rates, final  
design and rates



## Comparison of Outsource vs Insource

Net Income	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Outsource	-\$0.47M	-\$3.98M	-\$5.30M	-\$5.67M	-\$3.92M	-\$1.93M	-\$0.89M	-\$0.72M	-\$0.28M	\$0.19M
Insource	-\$1.05M	-\$6.70M	-\$8.24M	-\$7.15M	-\$4.45M	-\$2.45M	-\$1.55M	-\$1.45M	-\$1.06M	-\$0.66M

Cash Balance in Fund	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Outsource	\$18.30M	\$31.15M	\$28.32M	\$25.93M	\$21.78M	\$21.36M	\$21.96M	\$21.57M	\$24.60M	\$28.02M
Insource	\$32.72M	\$27.92M	\$22.30M	\$18.64M	\$17.55M	\$18.48M	\$18.60M	\$17.67M	\$20.07M	\$22.80M

# SENSITIVITY ANALYSIS – TAKE RATES

Will change  
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Sensitivity Analysis - Balance of Fund at Different Take Rates Over 10 Years

— 22% Break-Even — 30% — 32% — 40% — 50%

CURRENT  
BUSINESS CASE

\$17,500,000  
Contribution  
from Fiber Fund  
in 2023

\$15,000,000  
Contribution  
from Fiber Fund  
in 2024

Cash declines in  
the first years of  
operations, as  
expenses are  
higher than  
revenues

Cash grows with  
revenues as take  
rate increases,  
more customers  
connected

Impact of take  
rate on cash felt  
in later years of  
the project.

\$0

	Take Rate	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
— 22% Break-Even	22%	\$18.30	\$30.94	\$27.60	\$24.06	\$18.20	\$15.48	\$12.41	\$8.22	\$7.31	\$6.67	\$6.30
— 30%	30%	\$18.30	\$30.95	\$27.73	\$24.58	\$19.48	\$17.83	\$16.53	\$14.19	\$15.22	\$16.59	\$18.32
— 32%	32%	\$18.30	\$30.95	\$27.75	\$24.82	\$19.94	\$18.79	\$18.65	\$17.54	\$19.83	\$22.52	\$25.63
— 40%	40%	\$18.30	\$30.96	\$28.00	\$26.18	\$21.72	\$22.38	\$22.85	\$22.36	\$25.32	\$28.70	\$32.53
— 50%	50%	\$18.30	\$30.96	\$28.04	\$26.03	\$21.13	\$21.75	\$24.79	\$26.98	\$32.72	\$39.02	\$45.88

# FINANCIAL TAKE AWAYS

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Will change  
based on take  
rates, final  
design and rates



- **City's existing fiber fund provides significant value**
  - Insource, outsource and hybrid models all viable
  - Cushion of cash in case issues occur
  - Lowers long-term debt service in perpetuity
  - More flexibility in pricing and costs
  - Without it, feasibility would be more challenging
- **Other considerations**
  - Cash balance/reserves
  - Price increases, inflation
  - Debt repayment schedule



# UAC Feedback Q&A