

DOCUMENTS IN THIS PACKET INCLUDE:

LETTERS FROM CITIZENS TO THE
UTILITIES ADVISORY COMMISSION

From: [Jeff Hoel](#)
To: [UAC: Council City](#)
Cc: [Hoel, Jeff \(external\)](#)
Subject: TRANSCRIPT & COMMENTS -- 04-06-22 UAC meeting -- Item VII.2 -- FTTP
Date: Friday, April 15, 2022 5:48:08 PM

CAUTION: This email originated from outside of the organization. Be cautious of opening attachments and clicking on links.

Commissioners and Council members,

At its 04-06-22 meeting, UAC considered an Item VII.2 about FTTP.

Agenda -- with staff report, including presentation slides, at PDF pages 25-42 (i.e., packet pg. 22-38)
<https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2022/04-06-2022/04-06-2022-agenda-and-packet.pdf>

Video (0:14:43-1:42:14)
<https://midpenmedia.org/utilities-advisory-commission-31-462022/>

Here (below the "#####" line) is a transcript of that item, with my comments (paragraphs in red beginning with "###").

First, some high-level comments:

1. The staff report was minimal, so UAC didn't have much to study before the meeting.
2. The item was a discussion item, so UAC couldn't vote on what advice to give Council.
3. I continue to support citywide municipal FTTP for Palo Alto.

Thanks.

Jeff

Jeff Hoel
731 Colorado Avenue
Palo Alto, CA 94303

#####

TRANSCRIPT: Item VII.2

0:14:43:

Chair Forssell: Next item is a "Discussion of the Status Update and Preliminary Financial Business Models for Palo Alto Fiber." And let's start by seeing if there are any members of the public wishing to speak on this topic.

0:15:03:

Kevin Enderby: Is there anyone from the public that would like to make a comment? Please raise your hand, or press *9. [pause] No speakers or hands raised. Thank you.

0:15:17:

Chair Forssell: All right. Then, looks like we do indeed have a staff presentation. So, let's go straight to that.

0:15:23:

Director Batchelor: **, Chair Forssell. Good evening. So, we are going to make a short presentation tonight. Dave Yuan, our Strategic Business Manager, and John Honker, from Magellan, will be giving a presentation tonight. So, I'm going to turn it over to Dave Yuan.

0:15:40:

David Yuan: Good evening, commissioners, and Council Member Cormack. I think we came here about a year ago, in April of 2021. At that time, we presented two business models for fiber to the premise. The first model was a City-owned ISP, or internet service provider. And the second model was a partnership model, for the City and a partner, with an ISP provider to provide the internet services. There are both advantages and disadvantages to both models. Under the City ISP model, the City would have total control of the service offering -- price would be higher under this model, because we would be on the hook for the full construction costs, and we also would have to hire staff to fulfill all the operations and the maintenance of the network.

To be clear, Yuan is talking about what it would cost the City to build the network, not what price subscribers would pay for network services.

Under the partnership model, we would reduce some of the -- save the City some costs, because the partner may contribute to some of the construction costs. And they also would provide staff to fulfill some of the core functions, both technical and operationally. However, then the City would have to relinquish some of the control of the service offering. Again, quality-of-service, pricing, and so forth. And we also would have to share revenues with the partner under that model. So, we came to the UAC, and the UAC recommended that we pursue only the ISP model, because if we wanted to keep control of the service and the offering, and also the pricing. And also, in the long term, I think, under the City model, we would be financially better off, because we wouldn't have to share revenues with the partner.

0:17:15:

So, tonight, we bring to you two ISP models -- City ISP models. One is 100 percent in-house staffing, where the City would be responsible for everything from the technical and operational side of it. And the second model is a half -- a hybrid, I guess -- half -- well, it wouldn't be half -- but a combination of insourcing and also finding some strategic partners to outsource some of the core functions, where we don't have in-house expertise right now. And also where we may need during full deployment. So, tonight, we have John Honker, from Magellan. He will be presenting both of these models to you. Let me turn it over to John.

0:17:56:

John Honker: Great. Thanks, Dave. And good evening, commissioners.

0:18:00

Slide 2 -- Agenda

It's a pleasure to be in front of you again this evening. And providing, really, a status update. And, really, this is more of an informational update about, really, the progress that's been happening behind the scenes, as Magellan and the City staff have been working through -- as Dave had mentioned -- the business models. Really starting to fine-tune those, and understand what the best mix of, you know, utilizing existing City resources, where we see opportunity, but also, you know, leveraging specific, you know, strategic vendors that can potentially take some of the heavy lift away from the City in the early days of the network. But then, also, work with the City, where they're more cost-effective in circumstances to manage certain parts of the network. So, David mentioned sort of this insource versus insource/outsource model. We'll be talking about that, and kind of bringing you up to speed on what we've found, as we've been looking at those two, and some of our, you know, core recommendations on that.

0:19:07

Just a quick agenda. We'll try to keep the presentation relatively short, tonight, because we want to open it up to Q&A. And please feel free to interrupt me at any time, as we're going through this, as well. But we'll talk a little bit about status update. On the -- If you remember, phases 2 and 4, which are the engineering design and the business planning, as well as the community engagement. We'll give you a quick update on that. And the progress complete. We'll talk about that business planning process, and the alternatives that we're working through, and the pros and cons of those. And we'll show you what those costs look like today, in today's world, for operating the network. And we're really focusing, at this point, in looking at the staffing plan. You know, we're pulling together full pro-forma financial plans for these different scenarios, which are in the process. But what's important tonight is to really focus more of your attention on, really, just the concepts of insourcing of some staff versus outsourcing staff. And using, potentially, a blended model that gives the City the best of both worlds. We'll also go through some of those numbers. And, most importantly, an updated -- what we call bill of materials. And the capital costs for fiber to the home. And then talk about the next steps.

0:20:34

Slide 3 -- Status Update

So, just a quick update on the three sort of components of the fiber expansion project currently. So, the engineering design for the fiber backbone and for fiber to the home is past 60 percent completion. We're moving on to what we're calling the 90 percent completion phase, where we are truing up all of the construction methods. You know, the sequencing of construction, and working with the City's team to determine the best ways to build, and build the quickest and most efficiently, with minimal community impact. On the business planning side, we're about 75 percent complete. We've really gone through a full analysis of staffing, a full analysis of insourced versus outsourced costs, as well as some -- a lot of those operational costs. AND we're diving into, really, governance structure now. And looking at things like, you know, how would a broadband utility be managed? You know, how would the board be governed? How would the departments be governed? And how would they operate? Specifically in the competitive environment, which is going to be different than, you know, the electric environment, or the City's -- the general sort of -- the General Fund. So, you know, in looking at those nuances between, you know, how the City does business today and, in a competitive market, how it will need to potentially adjust some of those controls, to be a little more flexible. And then, of course, the engagement and outreach. We can talk through that. We're about 50 percent complete with that. The survey is effectively almost ready. We have not set a specific date for launch. But we're looking at sort of that second week of May right now. But plenty of runway if we need to move those -- that date out a little bit further, if possible. So, --

0:22:33:

Slide 4 -- Business Planning

Chair Forssell: Mr. Honker, just a quick question. "Engineering design 60 percent complete." Does Magellan do the engineering design? Or does Magellan contract that out to another engineering firm?

0:22:45:

John Honker: No. We do all that in-house.

0:22:46:

Chair Forssell: OK.

0:22:46:

John Honker: Yup. So, we've got a team of about six engineers in our, you know, brick-and-mortar office, that are working on Palo Alto non-stop. And then, we have, in the field, for all the what we call constructability analysis, we have have a team of about four field engineers, who are walking all of the routes,

and really looking at conditions in the community. Looking at the poles. Assessing, you know, how the network can actually be constructed, really, one foot at a time. So, you've got a team of about ten, just dedicated to the Palo Alto project, just working through the engineering now, Chair Forssell.

0:23:27:

Chair Forssell: Thanks. Good to know.

0:23:31:

John Honker: So, on the business planning, again -- we talked a little bit about this, but where we've finished our analysis, really, and looking at these different business models -- really on the business operations. Management, Customer Service, Billing & Finance, Sales & Marketing, Network Operations, Tech Support, and Engineering. Right? How all of those core functions of the broadband network can be managed by the City. And then identifying both the internal resources -- new staff -- or, potentially, outsourced vendors to be able to manage each of those functions. We use -- You know, one of the key things that we looked at, as we dug into this, was, you know, Palo Alto's existing salary bands and your labor overhead. Right? Which are considered -- are high. We know that. There -- that's -- most munis in California are high. And similar to what we see in Palo Alto. But how does that then compare -- How does that work financially, as we bring these numbers together in the pro-formas? And looking at those, we did find opportunities where, you know, some strategic vendors can fulfill a role for a lower cost in Palo Alto. And we'll go through those in a few minutes.

0:24:55:

Regulatory review. So, we're actually going through all the state requirements and federal requirements that the City would need to meet becoming an ISP -- an Internet Service Provider. And we'll be getting together with Legal and HR this coming week, to review those requirements. And make sure there's a good plan going forward. Make sure your internal teams understand what those are, from each one of the state and federal agencies. And also what resources it's going to take to manage those, on an ongoing basis, for Palo Alto Fiber.

0:25:31:

The third item is a pretty important one. Right? The governance model around broadband. And I think this something we'll also tackle on the -- you know, starting on April 13th with this first meeting. You know, what does the actual management tier of Palo Alto Fiber look like? Like I mentioned before, we need to make sure that the -- um -- the business is agile enough to be able to move in a competitive environment. And that may mean making some changes to how the City typically does business around procurement, around policies, around salaries, around hiring. So, we're really working through those different, you know, business functions, to 1) determine how Palo Alto does it today, and 2) does that work in a broadband business, or does that potentially need to be adjusted? Some of the other items are Policies, Procurement, and Rate-Setting. Right? How do rates change? Right? is it a formal process? Are there more levers that can be pulled, at a quicker pace than the traditional rate-setting process that you have in, for example, utility -- the regulated electric utility? Broadband is not a regulated environment. So, there's more flexibility. But, you know, we still need to work through that, I think, with the City, to determine what the right governance model is.

0:27:01:

The preliminary pro-formas and financial plans is really the crux of the business planning that we're effectively complete with the first draft of your pro-forma financial plan. Right now, it's a draft. And the numbers are going to change over the next 30 days, depending on, really, a couple of things. 1) how the governance models enter into that, and financing enters into that. How will the City potentially finance this project? And what the best structure for that financing will look like, to match the financial requirements of Palo Alto Fiber. So, in the next meeting, we're going to be going through a more detailed review -- financial review of the full pro-formas. What we'll be showing you tonight is really a preliminary assessment of some of the areas in the pro-formas. And then, finally, the final pro-formas, where we'll have a fully-baked financial

model, that could be potentially taken to the markets to get funding, you know, whether that's bonding -- revenue bonding, or GO-bonds, or other forms of financing. COPs, etc.

0:28:17:

Slide 5 -- Business Planning (Part 2)

You know, and as we look at the business planning, -- Like I mentioned before, one of the key aspects of the business planning is trying to identify where you have existing resources. Right? So we don't necessarily have to have new hires in every department for broadband. And the existing resources that are out there today -- You have Finance and Accounting. Right? That -- There's some financing and accounting work that's going to have to happen to run the broadband business. Right? In terms of billing. In terms of account management. Keeping separate books from the electric utility. And, you know, the General Fund. And, as well as just general management. So, we do see some overlap there, where some of the City's existing resources -- both human and system resources -- can be utilized. For example, the billing system. Can we utilize the existing electric billing system for broadband? More than likely, there's some opportunities to do that. Will it still take some investment? Yeah. Typically, it does. But we see most utilities that are -- Or, most cities that are building -- utilizing some portion of their existing financing and accounting systems.

0:29:33:

So, Customer Service, we also worked through that with the CPAU team, to identify some existing customer service reps and supervisors that could be used to carry some of the broadband call load, as that's happening. And then some Legal as well. Where do you have new hires? Sales and Marketing is a brand new department. That's going to be something that is really core to Palo Alto Fiber. Right? As in any business, if we don't have a sales & marketing team, it's going to be difficult to be successful. We think that that needs to be an organic department, meaning that the City should hire for that, because it's so core to the organization, and everything that is going to be Palo Alto Fiber. Almost every broadband city -- or, a city that's offering broadband -- has their own internal sales & marketing department. Now -- and that doesn't have to be large. Typically, that's 2-3 people. You know, a sales & marketing manager, a commercial account manager, that handles mostly the larger business accounts, and then a residential account manager.

0:30:47:

Where else do we have new hires? We think an operations management ...

0:30:51:

Chair Forssell: You said it was OK to interrupt as we go. Can I interrupt quickly?

0:30:55:

John Honker: Please. Yeah. Absolutely.

0:30:56:

Chair Forssell: How is a commercial account manager for the fiber going to be different than what we already have for our existing fiber ring?

0:31:04:

John Honker: Sure. So, ...

0:31:05:

Chair Forssell: if that's a whole extra hire?

0:31:07:

John Honker: It's -- And it may not be. It -- This could be, actually -- It's a great point. Because you possibly could utilize existing resources for that. Or it could be -- You could actually, potentially, have a joint residential and commercial sales manager. Or sales account manager. Because, you know, what you guys have right now, for your sales in the Palo Alto Fiber business, is really like kind of a large account manager. Right? They're selling to mostly larger businesses. Dark fiber. Right? To, you know, Stanford. And to other entities that are out there. That -- It's a different kind of a sale. This is going to be more like a small and medium business service -- that you're providing internet service to.

0:31:51:

Chair Forssell: Got it.

0:31:51:

So it's a different function. It may be a full, but ...

0:31:55:

Chair Forssell: Got it.

0:31:58:

John Honker: But great question. Thank you. The other areas. Field Services. Again, field services really is tasked with managing the outside plant. Just like your electric linemen and your outside plant maintenance folks are managing the electric infrastructure, you're going to want to have folks managing the fiber infrastructure. There is a little bit of overlap there, but these are also dedicated resources. It's hard to get a lineman to be doing both fiber and electric at the same time, on two different critical infrastructures. So, we would expect some hiring there. Also, in Customer Service, because the typical, you know, load on a customer service agent from broadband is much higher than electric. So, for example, they take, you know, four times as many calls an hour than an electric CSR does, you're going to want to bolster your existing customer service pool with some new agents. And then, Service Quality Control. Really, as we look at, you know, the overall services being provided to the residents and the businesses, ensuring that you're meeting service level agreements. And also, that the network is delivering what it promised. And what Palo Alto Fiber's promised to the community. That's really a core function that is just pure quality control.

0:33:19:

Now, on the strategic vendor side, let's think about some of those commodity services. Right? Where there's a commodity service, such as tech support. Some of these can be outsourced. Right? And in these cases, tech support, overnight customer service, network design. These three are really technical services. And they are incremental in nature. They're variable in nature. Meaning that you can -- You don't need a fixed service all of the time. So, we can use, for example, a strategic vendor for overnight customer service. Right? For call overflow during the third shift, between 8 pm and 8 am, we can definitely bring in a vendor to be able to manage that. You know, at a much lower cost than Palo Alto can staff that currently. Network Design and Tech Support very similar. Technical services that can be potentially outsourced. Construction. We always, you know, recommend that construction is outsourced. Right? The large construction contract. Palo Alto wouldn't hire for its own construction needs. But also, Construction Management & Inspections. This is a really important part. As you're building what will be eventually a \$100 million network, you need eyes and ears on the ground, to make sure that construction vendor is doing what they're supposed to do. And the network is being built to the standards. Just as if you're building a new substation, or you're building new electric plant, someone needs to have eyes on the construction contractor, to make sure they're doing their job. And, you know, when those invoices come in, those are actually being charged for work that's been done. And it's been done, you know, with good craftsmanship, and good quality. So, these are all opportunities to outsource.

0:35:14:

Slide 6 -- Pros and Cons of Outsourcing

So, the pros and the cons of some of this outsourcing, we should think about this in terms of the end result to the customer. Right? The pros are, in most cases, are in achieving lower costs, where private-sector overheads may be lower than Palo Alto's existing overheads. Or where a vendor can share a pool of resources to provide services to Palo Alto. The con in that is, you know, a risk of -- You're losing some control. Right? You're contracting with a vendor. And the ven- -- there's very qualified vendors that do this every day. But, in some cases, you're losing some control, because it's not an internal function, you know, that you're managing day in and day out. We can mitigate some of those with strong service level agreements with the vendors. So, for example, let's talk about the tech support. Right? So, let's say we've outsourced some of the residential tech support. The more -- Let's say, the more technical -- the higher value, and the more technical aspects of customer service. Well, we would expect, you know, -- We would expect the customer to be contacted right away. We would expect that, you know, they would stay in contact. We would expect that you'd have resolution within 4 hours on general technical problems. So, there's going to be a certain level of service that has to be maintained with those vendors. And that can be built into the contract, so there's penalties for non-performance. But we always have to be managing those vendors. Right? Because that really will -- If we don't, it will impede service to the network, and to the customers, at the end of the day. So, we want to really look at what covenants we can put into our contracts with some strategic vendors, to be able to provide the same level of service that Palo Alto would be providing if it was providing -- you know, sourcing those staff members directly.

0:37:18:

Commissioner Johnston: Mr. Honker, can I interrupt for one second, and ask a question?

0:37:21:

John Honker: Yup. Please, Commissioner Johnston.

0:37:22:

Commissioner Johnston: So, have you kind of evaluated -- Well, you're evaluating the pros and cons of outsourcing. Are you also looking at kind of the speed with which the system can get up and running and be fully functional?

0:38:39:

John Honker: We are. So, that's one of the things that we do think is an oppor- -- actually, an opportunity on the front-end. And we see a lot of cities will do this, as they're building their networks. You know, rather than trying to insource everything from Day 1, you know, they'll use strategic vendors during the implementation phase, to build the network, to, you know, integrate, to data test customers, to bring on the first customers. Typically for the first year or two. You know. Because they've done it before. They've been through it. It's very -- I don't want to say it's cookie-cutter. But there's a lot of lessons learned along the way. That vendors who have done it understand it. Right? They know how to fix problems. And they know how to avoid a lot of the roadblocks. But that gets handed over to the City after a certain amount of time. Right? So, during the really critical phase, the first couple of years, where you have to ensure success, those vendors just provide a crutch, to help the City, as you're growing. Because, you know, you're going to be building this massive network. Right? Massive construction project. And, at the same time, you're going to be building and connecting customers, and making sure those customers are happy. Because you're not going to build the network all at once, and then connect customers. You'll be in construction, and you'll be connecting customers, you know, after the first, say, twelve months of the network's being built. So, as we're -- It becomes, really, a well- -- has to be a well-oiled machine. And those vendors kind of help grease the wheels, to make sure that happens.

0:39:15:

Commissioner Johnston: I think that makes a lot of sense to me. Because I think it's critical here that, you know, as we start to roll out the service, it's going to be very important that it be high-quality from Day 1. Or we're not going to get people to sign up. So, I think having experienced people -- presumably from outside vendors -- experienced people, to help get the whole ball rolling I think makes a lot of sense. And will

ultimately make the project more successful.

0:39:52:

Slide 7 -- Insource org chart

John Honker: Yup. We would definitely agree with that. And here's what that may look like, from an org chart perspective. So, this is really what the draft org chart looks like today for Palo Alto Fiber. We've spent a lot of time with Director Batchelor and Dave's team, working through this and identifying the resources that would be needed. So, I'm going to review this with you, just for a couple minutes, so you understand kind of the layers. And then we'll talk about how this org chart could change, you know, utilizing those strategic vendors that Commissioner Johnston was mentioning.

0:40:36:

So, at the top, we have an Assistant Director of Palo Alto Fiber, who's sort of an assistant GM for the fiber business. Under that resource, there's a tier of management: Sales & Marketing Manager. And, under that, like we were saying, Chair Forssell, is the Res & Biz Account Manager. (Residential and Business Account Manager.) So, that really is the sales team. That could grow over time a bit, but we think, you know, given the size of the network, we think that, you know, a two-person team would be sufficient to cover the Palo Alto market. The Engineering & Operations Manager. The -- really responsible for ensuring the network is built and maintained. And that services are provided, based on, you know, the quality that Palo Alto's going to guarantee. So, under that, we have network engineering and design. We have then the folks that are actually going to be operating and managing the system, and making sure service is delivered to residents and businesses. You have network engineers. And you have what we call network operations center techs, or technicians. Those are the folks behind the scene that are managing all of the equipment, and making sure services stay up. Within that operations team, we also keep the Customer Service Supervisor. And then, customer service reps. And there's some opportunity here where there are existing resources in the customers -- in the call center pool, that could be utilized for that tier 1 sort of account management, first-call resolution support. But we think three new reps are going to be necessary to be able to manage the volume of customers over time. And also, some of those higher-level, you know, internet-specific functions. Right? How to deal with internet customers, and how to troubleshoot issues.

0:42:44:

Separate from the Engineering & Operations, the Field Services Manager is really responsible for all outside plant operations and maintenance. Anything that's on the poles, in terms of fiber, or underground. Under that resource, we would have two maintenance techs and three installation and service techs, who are responsible for plant maintenance and also customer installations. And in that area, you'll probably have some additional outsourced vendors here. Just -- Almost every city that deploys broadband uses a vendor to supplement their internal staff for installations. But this is a very high-touch function. This is the tech that's actually going inside the house, working with the customer. Right? Putting the booties on, to make sure that the carpet doesn't get dirty. You know, helping them set up their new internet service. Troubleshooting their old internet service. Getting the remote controls working. So, it's a really high-touch function. Which is important, because you want to have some of those people in-house. They just need to be Palo Alto Fiber ambassadors. You want to have, you know, strong, strong representation there, inside the home. But there's also a number of firms out there that do this for a living. And they're very, very good at it. So, we think it's a combination of existing -- or, of some new some new hires -- like three installation and service techs -- and then some vendor -- um -- FTEs that will supplement what the hires are doing.

0:44:29:

And then, on financial side, we have the Revenue & Accounting Manager. And a billing tech, under that, just responsible for billing questions, pro-rates, discounts, managing the billing system effectively. And there's some opportunity to share resources with existing utilities. So, on this side, the goal would be to allocate 25 percent of these costs to the broadband side, and then keep the 75 percent of the costs on the electric side.

0:45:02:

So, this is really your fully insourced platform. We're looking at a total of about 24 full-time equivalents. 24 new hires. At the end of Year 5. And, again, that may -- could shift a little bit forward, or it could shift a little bit back, depending on how quickly the network is built. Right? The quicker it's built, the more customers we can get on, the faster these hires will have to come on board. If it's a slower roll-out, then, you know, maybe it buys us a year and a bit slower staffing plan.

0:45:37:

The outsourced version of this -- So, we'll focus down here, mainly, in the engineering & operations. Because this is where we see the most opportunity to reduce staff, if we're going to use strategic vendors.

0:45:49:

Slide 8 -- Outsource org chart.

So, you can see the green boxes, where we are adjusting the FTEs, and outsourcing some of these functions. So, we talked about network design. Your network operations center folks. And some of your customer service reps. So, we're able to basically pull about 5 people out of the engineering & operations division, and be able to outsource that. Or, actually, 6. And then, potentially, one out of revenue & accounting. And billing. So the opportunity we see is about -- you know, versus 24 in the insourced model, we're looking at about 17 in a hybrid model. One difference between these two also is, we can start with this model, potentially, and then migrate into a fully insourced model down the road. This is what Commissioner Johnston was mentioning before. You know, start with a strategic vendor where we have some, you know, insourced staff. But, you know, a lot of those functions are taken care of by a strategic vendor, as Palo Alto is learning the trade. And then, those new folks can be hired over time, to replace that vendor, after the first couple of years. Or, I think you also have the flexibility to just maintain that strategic vendor if they're doing a good job for you. Because, in most cases, if they can come in at a lower cost, and the quality is acceptable, you know, the savings is pretty significant. And I'll show you what that looks like in just a minute.

0:47:35:

Commissioner Smith: Sorry, John. Can I interrupt you there for a minute?

0:47:37:

John Honker: Sure thing, Commissioner Smith.

0:47:41:

Commissioner Smith: Can you help us interpret these two charts? I think what you're saying is, between insource and outsource, we're going to need 24 total people, ...

0:47:53:

John Honker: Correct.

0:47:53:

Commissioner Smith: ... in order to run the entire operation. But if we adopt more of an outsourcing model -- perhaps we'll adopt an outsourcing model in the initial years -- we can start with a lower population. I think that's what you're saying. But, in total, we're going to need 24 people.

0:48:15:

John Honker: Yeah. Effectively. So, in this -- In the outsource model, effectively, you know, we're not saying how many people that vendor's going to have, specifically. Because they're going to staff it a little bit differently. They're staffing more of a shared pool of resources, than dedicated individuals.

0:48:33:

Commissioner Smith: Yup.

0:48:33:

John Honker: But in terms of FTEs, you're exactly right. We're looking at, you know, 17 if we outsource -- 17 folks that are employed by Palo Alto Fiber, if we use these strategic vendors. If Palo Alto Fiber is going to hire it all, we're looking at 24.

0:48:54:

Commissioner Smith: Understood. And, as I look at the outsourced model, one of the changes is odd. The Customer Service Supervisor would NOT be necessary? That would be -- Who would -- Who would own customer service? If we followed the outsource --

0:49:17:

John Honker: So, this was -- As we understood, this would be shared with Electric. Meaning that the customer service supervisor would take ...

0:49:26:

Commissioner Smith: I see.

0:49:26:

John Honker: ... the management of the vendor. So, for example, that supervisor would manage your outsource customer service firm. And then, you would just have two internal CSRs, to complement what they're doing.

0:49:44:

Commissioner Smith: OK. Thank you.

0:49:46:

John Honker: And those numbers can change a little bit. Right? There's a lot of different variations. This is kind of just one iteration of it. But the idea would be, wherever you have an outsourcing opportunity, instead of that staff doing the work -- like the management staff above those resources -- that staff is now managing a contract. Right? With that vendor. So, for example, the Engineering & Operations Manager is managing an overall contract that's supplying customer service, network engineering, network design, and just general operations. Right? Managing the contract with that strategic vendor. Or, it could be more than one. It could be two vendors.

0:50:33:

Commissioner Smith: Noted. Thank you.

0:50:35:

Slide 9 -- Comparing Models

John Honker: Sure. So, as we looked at the difference -- This is kind of what we had developed as a comparison between the insourcing and outsourcing on the staff. And, again, we're going to focus mainly -- This is really the hardest part of the business planning, is really to assess the overall staffing costs in these different models. So, we wanted to first baseline the City's existing costs, by looking at, you know, -- um -- the salary band of a similar position. You know, what is an electric employee making today? What is the

comparable broadband employee going to make? And then, you know, load your overheads into the model. And this is really what our staffing for insourcing looks like, on an annualized basis, starting in 2023, and going for a ten-year stretch. So, you know, we're starting at around \$2 million, and growing to about \$7 million -- \$6.5 million after the first 5 years. And we consider that sort of the maturity year for the broadband business. Right? After a full 5 years of operation, your staffing costs -- You know, they're still going up, because there's a little bit of a cost-of-living increase happening annually. But they're not growing considerably during the sort of the implementation phase. So, we'll see see those leveling off after the first 5 years. And then growing at about 3 percent -- 4 percent a year.

0:52:10:

On the outsource side, we see the opportunity to reduce costs, to be about 20 perc- -- or, 15 to 20 percent, overall. So, the blue lines on the chart show the reduction. And then, in the table, you can see -- We start out at our same -- In 2023, we start out at our same internal costs, because you're going to need to hire the core people for the broadband business, to get the construction started. Right? But then, over time, this is going to diverge. Because, for example, in 2024, we're not hiring as many CSRs, or not technicians, or installers, that we are in -- if we were insourcing. So, there's about a half a million dollars savings in the first year of providing service. And then that continues, you know, year after year, as the network grows in maturity over time. And the way we looked at this was to take some existing contracts that cities are using out there and really break them down into the functions

0:53:23:

Slide 8 -- Outsourcing org chart -- again

that we were able to identify for outsourcing on this graph, and then really look at those, you know, in current dollars,

Slide 9 -- Comparing Models -- again

and then project those forward. So, you know, again, we think the opportunity is to potentially save some on the operating costs. Which is pretty substantial. Right? We're looking at -- You know, after the first 5 years, we're looking at about \$700,000 in savings, you know, growing to about \$800,000 in perpetuity after the 5-year term.

0:54:00:

Commissioner Johnston: Well, Mr. Honker, could I -- Again, a clarification on this chart. When you talk about the line that's the blue bar -- total staffing outsource -- are you -- does that assume that 100 percent of the staffing for the fiber utility is outsourced? Or is that just outsourcing those key functions that you, you know, had in the green boxes on the prior slide?

0:54:28:

Slide 8 -- Outsourcing org chart -- again

John Honker: It does -- Just outsourcing these key functions, that are in the green boxes.

0:54:31:

Commissioner Johnston: All right. Thank you.

0:54:34:

Slide 9 -- Comparing Models -- again

Chair Forssell: And, quick follow-up question. How are you accounting for the cost of the contractors and vendors? Is that already incl- -- Like, does the savings -- Is that net of having hired outsource contractors?

0:54:51:

John Honker: It is. Yeah. Chair Forssell. So, effectively, the -- This line here, in the total staffing outsourced includes all of the contractors -- or, let's say the strategic vendors -- So, it's effectively this chart. Right?

0:55:08:

Slide 8 -- Outsourcing org chart -- again

So, it's the City's 17 FTEs, plus the outsourced vendors, that are performing the functions that you see in the green boxes.

0:55:17:

Slide 9 -- Comparing Models -- again

That is -- that **

0:55:19:

Chair Forssell: I figured. I just had to double-check.

0:55:21:

John Honker: Yeah. No. It's a great question. Thank you. So, I think, you know, the savings is -- We see the savings as an opportunity. We really have to vet vendors, though, to determine overall quality levels, and make sure that top quality isn't compromised by outsourcing. So, as we get closer, here, you know, it's going to be important to really identify some of the vendors, if that's the route the City wants to go, and understand those capabilities, and make sure we do a good job of really doing our due diligence on them, to make sure they're capable.

0:56:04:

Chair Forssell: One other question, Mr. Honker. You mentioned that you had sort of estimated the cost savings by looking at existing contracts with other cities that are outsourcing to vendors. What cities are you referring to?

0:56:18:

John Honker: Yeah. So, we looked at -- The prime ones that are out there today, doing -- providing outsourcing -- are like the City of Chattanooga. So, Chattanooga EPB is providing outsourced services on a per-subscriber basis. So, meaning, as -- every month, if you want to take -- if you want to utilize outsourced - - or, you want to utilize Chattanooga for customer service, they charge you \$10 a sub. Or \$8 a subscriber. So, those -- we looked at three cities that are doing that today, and averaged those costs year by year. And that's, again, based on the total number of subscribers. So, ...

0:57:01:

Chair Forssell: Sorry. Is Chattanooga the city that's the customer? Or is Chattanooga a vendor, and three cities are using Chattanooga as a vendor?

0:57:11:

John Honker: Exactly. So, Chattanooga is the vendor.

0:57:15:

Chair Forssell: So, who are the cities that are contracting with Chattanooga? That's my question.

0:57:17:

John Honker: So, BrightRidge -- Johnson City, Tennessee -- is contracting with them currently. Newport, Tennessee, is also contracting with them. And there's one more -- I'll have to get the name of. But there were three different cities that we looked at, when they were -- that they were currently **.

0:57:35:

Chair Forssell: Are cities in Tennessee, using a Tennessee-based vendor, a good comp for Palo Alto?

0:57:42:

John Honker: Well, we put a contingency on there. So, for example, Chattanooga's pricing is about \$10 per subscriber for all of the services. We increased that by 30 percent, to account for any of the incre- -- potential increases in California. Again, for those services, if they were providing them out of -- you know, the East Coast -- or anywhere else outside of, let's say, Palo Alto -- you know, there's no direct cost increase. But we realized that you may want to also utilize a vendor that's closer to Palo Alto. They're just aren't a lot of cities that are doing that right now in California, or on the West Coast. So -- We also looked at two sort of comparable ven- -- city vendors that were utilizing Chattanooga. And they were -- I mean, they're all sort of in the East Coast area. So, there's not a significant amount of comps for this type of service. It's not been a - - you know, it's not a -- there aren't a lot of different cities. So, we may also want to look at some of the private vendors that are doing this, in the California area, to just compare their costs as well.

0:58:58:

Chair Forssell: Yeah. I'm worried it -- I'm worried there might be a nasty surprise if Palo Alto tried to contract. And, I guess, some of the functions can be done remotely. But you mentioned customer service, or installation reps putting on booties. And I don't think you can pay Tennessee prices for some of those functions.

0:59:16:

John Honker: Oh, yeah. This is -- So, Chair Forssell, And that's actually a function that would be done locally. So, for example, the folks that are in the home are -- would be a local vendor. And those have been priced as part of the construction contract, in, you know, California rates. The services that we're looking at here are really mostly virtualized.

0:59:38:

Chair Forssell: I see.

0:59:38:

John Honker: So, yeah. Most of these are services. This is almost all back office.

0:59:44:

Chair Forssell: OK.

0:59:45:

John Honker: Which, you know, it could happen in Palo Alto. Or it could happen halfway across the country.

0:59:50:

Chair Forssell: Got it. OK.

0:59:59:

Slide 10 -- Preliminary Build Schedule

John Honker: So, just moving on from the -- sort of the staffing piece of this, we're also working through the build schedule for the fiber to the home network. And this is what that build schedule will -- could look like. You know, on a 5-year basis. So, one thing that's really important, as we start developing the final proformas, is, of course, the take rate. Which will be teased out of the survey. But also, the build schedule. Right? How many customers we can pass. Or, we can -- they can have access -- in how much time. Right? And we looked at potentially a 3-5 year build schedule. Again, it will depend on the final construction sequencing. You know, one of your -- One of the important goals of this would be to get as many customers connected as quickly as possible. Because that's going to start generating revenue, and help sustain the financial requirements of the network. So, as we're working through the last parts of the engineering design, you know, what we want to be looking at is, how do we front-load construction in areas -- You know, still keeping some of the -- trying to equalize construction across different areas of the City, so we're not just building in one concentrated area. We think that's important for you, just to have sort of equity in how the construction's happening. But we also want to really focus on looking at aerial construction first, because it's much faster than underground. In Palo Alto's case, we're thinking at least 2-3 times the mileage can be completed in aerial construction, versus underground construction, in the same time. So, if we look at this plan here, we will be looking at potentially connecting, you know, about 26,000 residential customers at the end of the fourth year. We averaged the 3-5 years. And about 4,000 business customers. So, in your City, you've got about 30,000 total premises -- residential and business -- that would be connected over the four-year period. And that's going to grow a little bit, as, just, there's a little bit of additional growth in the City. But it's, you know, hitting that 26,000 residential and 4,000 businesses kind of the mature number. That's the last year of construction.

1:02:34:

You know, when we forecasted the take rate, we were very conservative. Right? Because we wanted to wait until the survey came out to understand final const- -- final take rates. But this is what it would look like on an annualized basis, with a growing take rate, up to 32 percent. And this actually pretty conservative, because we're reaching that take -- that 32 percent take rate after 5 years. We don't add anything in the first year of construction. We're assuming that that is all just, you know, pure construction, no customer connections. And then you'll start to grow, you know, slowly -- 3 percent take rate in the first year, 10 percent in the second year, up to 19 percent -- Now these are cumulative numbers. 19 percent in the third year. 27 percent. And then 32 [percent]. So, the big years of adding customers would be Years 2, 3, and 4 -- to the network. Which -- You can see down here what it looks in terms of how many customers we're connecting per day. And this is how we come up with the needs of the FTEs that are managing the network. So, for example, ** ...

1:03:47:

Commissioner Smith: Sorry, John. Could I interrupt you for a minute?

1:03:50:

John Honker: Surely.

1:03:52:

Commissioner Smith: These are -- This is -- as I -- They're assumptions. I get that. These are assumptions, that are building the model. And I assume that the reason we were so conservative in this is that if we could make the model essentially break even, or profitable, with very conservative assumptions like this -- Is that the thought process?

1:04:16:

John Honker: That's the idea. Yeah.

1:04:18:

Commissioner Smith: OK.

1:04:19:

John Honker: Yeah. The goal is to really -- Let's ratchet down all of our assumptions to the bare minimum.

1:04:24:

Commissioner Smith: Right.

1:04:24:

John Honker: If the model works on that basis alone, ...

1:04:29:

Commissioner Smith: Then it should work.

1:04:29:

John Honker: Exactly. Exactly. What's -- And I think the way we really want to do this is -- you know, for us, it would be valuable to do a low, medium, and a high. Or, let's say, a break-even, a medium, and a high. So, ...

1:04:43:

Commissioner Smith: Yeah.

1:04:43:

John Honker: ... this would be effectively be your break-even model.

1:04:46:

Commissioner Smith: OK. I -- I agree. And I absolutely appreciate that. And I agree with you that doing a -
- You could call it low, medium, high. You could call it best-case, worst-

1:05:00:

John Honker: Yeah.

1:05:00:

Commissioner Smith: case, ideal-case.

I don't think Commissioner Smith's renaming of cases clarifies anything. (Wouldn't the "best-case" be the "ideal-case"?)

The one question that I had -- and this is related to your underlying assumptions. On the "residential customers passed" in Year 1 -- We say 6,500 residential customers are passed in Year 1, and we're not going to turn on a single one. Is there -- In your engineering, have you discovered that the fiber that is currently in place -- would it support any residential customers today? If we simply started offering residential customers today?

A crisp answer would have been that the existing dark fiber network doesn't "pass" any customers today.

1:05:37:

John Honker: It would be -- It would be a bit challenging to do. But I think what we can do -- and this is sort of the -- once we get to the 90 percent design, it's all about phasing construction. So, I think what we've looked at, Commissioner Smith, is -- You know, if we want to get 6,000 customers connected -- or at least be able to start hooking them up -- Right? -- in the first year, let's look for our opportunities to build right around the -- right around the existing fiber.

This doesn't make sense to me. If he had said let's connect the huts to the central office using existing dark fiber, so we can have functional huts ASAP, that would have made sense.

And right around the facilities. Right? Because if we can build right around the huts -- the shelters -- Right? - that we all looked at, you know, a few months ago,

Huts were discussed at UAC's 10-06-21 meeting, but nobody knew where they would be, or how many there would be.

then we can start connecting those customers right away.

In order to connect a premises, there has to be a deployed fiber path from the premises to a hut, and from that hut to the central office. That's not necessarily related to how close the premises is to the hut.

And, you know, accelerate this whole timeline. So, I mean, if we can really do that in Year 1 -- Even if you have just a few customers -- Right? -- in Year 1 -- and you're beta testing, you're going to get a surge in the second year, as you continue that construction. So, that's really going to be the next phase of the engineering -- is to say, how quickly could we connect customers, given what we've got today? And, you know, bringing the new construction in as quickly as possible.

1:06:51:

Commissioner Smith: I would applaud that effort. And, similar to our discussion about having a low, medium, and high -- or best-case, worst-case, ideal-case -- we'd also -- it would be worthwhile, I think, to do that "soft opening" case -- that beta case. Identify those customers that were adjacent to the shelter -- adjacent to the POP -- that you COULD turn up in a relatively quick period of time. But turn them up with the notice and understanding that, look, service level agreements are not going to be in place for the next few years.

This sounds unduly pessimistic.

You know, we're going to have outages. And you just need to be aware that we're using your home, and your premise, as a test case. And we ask you to test it WITH us, and test the service WITH us. But get those customers up.

1:07:42:

John Honker: Yeah.

1:07:42:

Commissioner Smith: And get them up and operating. Again, to increase the viability of the product (one), but also -- just getting to your point -- getting the neighbors excited.

1:07:54:

John Honker: Yeah. Well, -- And a big part of this is just the optics. The optics of -- You know, if you've got people in the neighborhood that are hooked up, even if it's a beta test -- I mean, there are going to be -- People will know about it. That neighborhood will know that there's live customers in there. And then, you know, you can even do things like having a service van go around with a laptop and having people test

service, just so they know, hey, it's up and running.

Would the service van connect to the network via fiber? If so, how? If not, it's not a good demo.

You want to test a gig? Bring your phone over and connect to our wireless router. There's your gig. Right? They can speed test it ...

1:08:26:

Commissioner Smith: Yeah.

1:08:26:

John Honker: ... with their phones.

The test might be limited in performance by the wireless link.

There's lots of little tricks to do, to just speed up the deployment, and really kind of get the neighborhoods kind of moving a lot faster. But I think we would definitely want to do that. And we may want to look at maybe -- You know, there's 3-4 huts that are going to be located in Palo Alto. If we can pick two of those to start. And, you know, think about building out from them. Where you're building the huts, and then everything that's around them immediately gets a connection. You know, we could move -- we could bump this up, and potentially get customers connected, in 2023.

1:09:04:

Commissioner Smith: Great. Thank you.

1:09:06:

John Honker: Sure. And, again -- you know, this is a conservative schedule. So, you know, you have -- you still have 65-70 percent of the plant that's aerial. So, you know, if we can focus on most of the aerial first, and leave the underground 'til later in the project. So, let's say the first two years are all aerial. And then we'll leave the underground to the next year, or year and a half. It may be able to get most of the aerial done much quicker than the underground. Now, we need to look at where that is. And if there's any sensitivities around, you know, where those deployments are. But it will definitely speed up the construction. And customers getting on the network. Any other questions on this slide?

1:10:01:

Slide 11 -- Financial Plan

So, we wanted to just provide a -- just an overview of what the costs will look like. Where we're at right now. And what this table is really showing is what our original estimates were from early 2021, and where we're at today. Now, you know, a lot -- I think the big -- the elephant in the room is COVID. Has changed two things. The supply chain and the availability of materials. Labor has not inflated to the degree that materials have. But we have projected some additional contingencies in here, because we know that material costs are higher. For example, conduit has gone up about 50 percent. Anything that's petroleum-based has gone up about 50 percent. In broadband networks. Fiber has gone up about 40 percent, as well. And then, there's a lot of smaller materials -- but that are very, very important -- that have gone up quite a bit, or are very difficult to get right now. So what we've done is, we've actually increased -- based on what we're seeing in the market today -- we've increased our construction contingencies from 20 percent, on a lot of those key materials, to 40 percent, to accommodate some of those supply chain issues that we are seeing. So, for example, in the fiber backbone, our original estimate, from, you know, early last year was \$22 million. Now we're at about \$25.5 million. On the fiber to the home plant, we were at \$85 [million]. Now we're about at \$98 [million]. So, it's about a \$12.5 million increase on the -- Or \$13 million increase on the fiber to the home. And about a \$3 million increase on the fiber backbone.

1:11:54:

What we WERE able to do, as we went -- got deeper into the engineering, was -- We identified some additional cost savings, though, if the networks were built together. So, if you remember, the fiber to the home network and the fiber backbone network -- they overlap in a lot of places. Right? They're going down the same streets. And if they were to be built together, the savings means that we wouldn't have to trench two sides of the road.

I thought the City has a policy of putting fiber on the same side of the street as electric. Was Magellan thinking about deviating from that policy?

We could put everything into a single trench.

At 1:09:06, Honker says 65-70 percent of the "plant" -- meaning, I think, the FTTP "plant" -- was aerial. So the cost savings of sharing a trench would apply to only 30-35 percent of the FTTP "plant." There might be analogous cost savings for aerial, but that wasn't discussed.

Two different cables: one for backbone, one for fiber to the home.

The proposed dark fiber backbone extension would use one 144-count cable for electric plus one 432-count cable for everything else. If the cable for FTTP is separate from these, that makes three cables in all.

The cable for FTTP has to "pass" premises, meaning there has to be opportunities to connect to that cable every few premises. So if the dark fiber backbone extension follows the same route, does that mean that there's an opportunity to connect to its cables every few premises as well?

And that creates some savings along a lot of these construction routes. So, we WERE at a savings of about \$4.5 million. We've actually, now, at this point, found about \$8.7 million in savings, if the two projects were completed together. So, that offsets some of the cost increases. But not all of them. We kept the working capital static, at this point, at \$12.5 million. And, again, that working capital is really just to get the system up and running operationally, before you have revenue to cover the costs. Right? New hires. Systems. Internet content. Etc.

1:13:14:

So, what we're -- And, again, these are projections based on what we're looking at today. Our original costs were about \$116 million. We're at about \$128 million now. So, the way this would be -- So, the cost increase because of the materials all in is about \$12 million total. And, again, that could change. Right? We're -- We constantly watch what the markets are doing. We constantly watch the big suppliers of commodities, and of things like fiber, and the very specific items that we need to build the network. And things are shifting around. You know, we're not seeing any normalization right now in the supply chain on fiber. Twelve months from now, if you were starting to place orders for this, that could change. So, we need to really take a hard look at the timing, and start to hedge our bets against future supply chain disruptions, versus, you know, what may improve in the future. We think we'll start to see some visibility around that in Q3. Which will be sort of about the same time that, you know, we're coming back to you with a fully-baked financial plan. And that, then, will, you know, eventually go to Council. So, I would expect these numbers to change again. I would expect the \$128 [million] hopefully to come down. Because I feel like we're still going to find some savings in the construction costs, potentially on the labor side, as we get through this final phase of design.

1:14:56:

And, if you remember, the way that this would be funded would be to use the existing Fiber Fund, that's out there, which has a balance of about \$32 million, a contribution from the electric backbone of \$10 million. Ah - - I'm sorry -- A contribution from electric -- for their use -- or their capital contribution to the electric -- the fiber backbone of \$10 million. Which gives us a total balance of \$42 million of available funding. And then, our new funding required, under the original estimates, was \$73 [million] -- let's say \$74 million. Our current estimates are right around \$85 million. So, again, about a \$12 million increase, based on those materials

issues and supply chain issues.

1:15:47:

Chair Forssell: Commissioner Bowie, did you want to ask a question?

1:15:48:

Commissioner Bowie: I had a question on the funding side. And so, in addition to the supply chain costs and labor costs of COVID, we have also seen large influxes of infrastructure money from the federal and state levels. Are those things that are being considered now? I don't know anything about our eligibility. But, in terms of the financial plan, are they being considered now? And, if so, do they have a -- some sort of timeframe that is going to be quicker than what we're currently looking at? Are we going to miss an opportunity on anything that's out there?

1:16:22:

John Honker: Yeah. No. Thank you for the question, Commissioner Bowie. No, you're not going to miss an opportunity. For sure. 'Cause we're tracking that almost daily now. We have our VP of Funding, who's in Washington, on the Hill, that is in every week with the agencies who are working through the funding. So, we're looking at this -- the federal AND the state funding. So, the state of California, as you probably know, came out with a pretty significant infrastructure bill of its own. Partly for rural and partly for urban. Now, the rulemaking isn't complete yet. So, we're watching that every day as well, to see what's coming down out of the CPUC. Because that could determine your eligibility for funding. I believe there's some funding out there. I don't believe it will be a silver bullet for you. But, again, if we can offset some of these costs, even if it's, you know, 20 percent, it really helps. And, again, I think there's money out there -- You know, there's at least a billion dollars out there for urban communities. And we're hoping the broadband threshold, to be eligible for funding, will be 100 megabits [per second]. Right?

That's 100 Mbps for downloads and 20 Mbps for uploads, right? This is what the FCC might choose as a new definition for "broadband" if it could get a fifth commissioner appointed.

And, typically, it's been, you know, less than 25 megabits [per second] in most of the rural communities.

That's 25 Mbps for downloads and 3 Mbps for uploads. Right? This is the FCC's current definition for "broadband."

Meaning if your community doesn't have -- If a community has more than 25 meg internet service, you're not eligible. And, you know, a place like Palo Alto, that's difficult. But when the bar is set higher, at 100 megabits, that changes the game. Because, I think, as we look at some of the customers in Palo Alto, some of your citizens, they're isn't 100 megabit access.

According to BroadbandNow, Comcast's Xfinity internet service is available to 99 percent of Palo Alto. <https://broadbandnow.com/California/Palo-Alto>

(I think this means that at least one premises in each of 99 percent of Palo Alto's census blocks can get service. The FCC is supposed to working on a data-reporting system that is more accurate than this.) Comcast advertises that its service can provide 1 Gbps downloads and 35 Mbps uploads.

And the -- I think the most important part, that the Treasury actually built into this plan, was, they use words like "reliable" and "guaranteed" and "consistent" when they talk about the speeds. So, the traditional broadband funding was based on the access technology. Right? Meaning if it was DSL, well, it was 25 megabits. But that's changing dramatically now, and it's more about -- is the service providing a reliable and consistent 100 megabit? And if you can prove that it's not -- or you have evidence that it's not -- then you're potentially eligible for funding. So we're working on that for you, as that -- as those rules are making their way through the CPUC. We should hear something in early summer. And, based on that, you know, we would get you ready for prime time. Right? Get you ready, so that if that -- when that rulemaking comes down, you're in the best position to move forward and go after that funding as quickly as possible.

1:19:11:

Commissioner Bowie: Thank you.

1:19:13:

John Honker: You're welcome. Any questions on this slide, before we move on to the final two slides?
[pause]

1:19:28:

Chair Forssell: Go ahead and move on.

1:19:29:

Slide 12 -- Financial Plan (Part 2)

Slide 13 -- Financial Plan (Part 3)

John Honker: Great. So, finalizing the financial plan. This has just been an excerpt of where we're at, and a snapshot based on the current level of design. The next step will be, really, finalizing the financial plan. Which we had talked about, you know, looking at the potential financing requirements, final construction costs, final operating costs, the best model. You know, insourced versus sort of a hybrid insource/outsource. And then bringing that back to the UAC in advance of that joint session session in August. So, the goal would be to have those final estimates ready for you, based on the engineering design. What those projections on the materials and labor increases are going to be over the next couple of years, as we benchmark that against some of the existing metrics. You know, we'll inflate those by a CPI, and adjust construction contingencies. You know, can we find some ways to hedge our risk, and hedge those higher commodity costs early, by potentially reserving some materials, even this year? If the project's moving forward. You know, again, the next -- As the survey comes out, we'll be going through that final take rate, and the rate schedules, that would be based on the survey.

1:21:00:

One of the things that we've been actually working through, as well, is the -- a potential deposit program for residents and businesses that want to, you know, potentially show their true interest by putting an earnest-money deposit down. So, we're going to be working with the engagement team to look some ways other cities have done that. You know, how much they've asked residents to put down. These, of course, would be refundable deposits.

Refundable only if the City decided not to move forward? If the City does move forward, might some of the deposit count as payment of monthly service?

As you know, I think the whole FTTP network should be AE, not PON. But staff seems to think PON is good enough for most premises, although some premises might get AE. Might a subscriber be able to sign up for an AE connection by making a larger deposit?

But, you know -- But by doing that, and maybe doing that IN the survey process, or AFTER the survey process, or even BEFORE the survey process, could really help to gauge true interest. And a little bit more skin in the game, in terms of, you know, putting real money down for, you know, sign -- for an early sign-up. So, we're going to come back to you with some -- the options on how that could be done, and what the team decides on, you know -- What the number would be, how much -- How much the deposit would be. And then, how it would be potentially rolled out. We'll work through the final pro-forma income statement. We'll also have you a full borrowing summary, with the schedules. As we meet with Finance here over the coming weeks, we're going to work with them to determine what that optimal financing strategy is. And, again, as Commissioner Bowie said, if the funding is out there, we'll do a secondary model that looks at what the balance of funding would need to be, if we can go after those grants. And then, finally, really, a sensitivity analysis and a business risk analysis. Right? Because forecasts always change. Right? And pro-formas

change. So, we'll want to spend time looking at what the most sensitive variables in the business line are. And adjusting those both up and down to determine, really, what the highs and lows are going to be for the financial plan. So, that's a preview of what's to come, as we finish up the design -- engineering design and the business planning.

1:23:21:

Slide 14 -- Next Steps

I think I covered this already. As far as next steps. Finishing the engineering. The additional customer engagement, which is happening now. Estimation of take rates after the survey's been deployed. Finalizing the financial plan. And then, developing the governance and regulatory plan alongside your Legal and HR resources. And, really, getting ready for that next -- that next study session in August. A lot is going to happen between now and then. But that -- really, we would want to spend the next couple of months really vetting out financials, making sure we're -- you're comfortable with them. And then, you know, looking at that final decision. Whether to utilize those strategic partners. And if the grants are available, putting an action plan together to go after that money -- which will come out in late 2022.

1:25:29:

That's the last slide in the deck. So, I'd like to open it up to questions from the Commission.

1:25:35:

Chair Forssell: Yeah. Thank you, Mr. Honker. Commissioners. Commissioner Bowie, then Commissioner Smith.

1:24:47:

Commissioner Bowie: I'm just trying to figure out the way to properly phrase this. But this project is occurring against a wider backdrop of electrification. And major infrastructure changes that would come with that across the City. That seems to me as another place for potential synergy, in terms of planning and potential reduction of costs. Just sort of aligning trenching and project plans a little bit further down the line, if we do end up going that route. Nothing has been set in stone there, but is that something that would be considered in any of these? Or something that could later be factored in, if we were to move in that direction? In a wider electrification plan?

UAC had a discussion item about electrification on 02-02-22 (see TRANSCRIPT here, pages 175-201). <https://midpenmedia.org/utilities-advisory-commission-31-462022/>

As I recall, the discussion didn't talk about whether any electric wires would have to be upgraded, or, if so, how to do that. (See my comment at 1:05:35 in the transcript.) For aerial electric, I think the electric and fiber wires are just deployed separately, without much synergy (except for making sure the poles are strong enough). For underground, would a trench be necessary, or could the electric wiring just be replaced inside existing conduit? (Currently, Palo Alto has a policy of not putting electric and fiber in the same conduit.)

1:25:34:

John Honker: I think it does. We looked at some of that already, Commissioner Bowie. And we found some opportunities. But as we get through the final engineering, you know, we're going to have, you know, road by road fiber routes for all the underground. Which, if there's opportunities to get into those projects while they're happening, and the timing works, that's great. That's perfect. Because we all know how expensive it is for underground construction in Palo Alto. So, every foot that we save in underground is, you know, \$100 - - effectively -- that we save on the project. And that adds up quickly. So, I would really, -- You know, we want to encourage sort of a collaboration with the City, as we look at those undergrounding districts. The key is coordination. And we're dealing with this in Boulder right now, where, you know, we found a great opportunity to build in this North Broadway corridor, which is, like, 3 or 4 miles of underground construction, but it's like solid rock. So, it's very expensive. Just like we have in Palo Alto. And we're able to build there. But the challenge is the timing of the projects. Right? So, the city's project is moving very slow. The

broadband project is moving very fast. And the construction contractor was delayed, because the city was not ready for the fiber to come in yet. So, I think what we really have to do is -- It's got to be almost a two-way collaboration with electric, so that there's good synergy when the construction's happening, and the timing, and there's no dependencies. That's really what we need to kind of focus our efforts on.

1:27:17:

Director Batchelor: Yeah. If I may, John, if I could just add a little bit onto that, Commissioner Bowie, I think John is right. I mean, the biggest thing that we're thinking about right now is the coordination between these two major projects. And I'm not sure. We are in the process right now of working with a contractor on the electrification aspect, to take a high-level look at the areas that we'll need to identify and work on first. And where we're going to electrify might not be in the same exact location of where this aerial work may be, you know, underground circuits may be needed more than some of these overheads. But I think the thing is, rest assured that we are going to look at the detailed engineering work that John's team is doing, and overlay that over the top of where we need to look for electrification. So, where there is synergy, that we can look at boring extra trench lines, we're going to take advantage of that as much as we can. So that we are not ripping street up 2 and 3, 4 different times. Out there.

The Upgrade Downtown project on University Avenue was an example of how NOT to share costs among the utilities. On 01-22-18, Council approved this project, which charged the Fiber Fund \$2,140,404 for about half a mile of conduit for fiber.

https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2018/final-staff-report-id-8517_upgrade-downtown.pdf

There was no identified use for this conduit for fiber. Someone just decided to add it while the trench was open. See this TRANSCRIPT (pages 2-30 here).

<https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2018/02-07-2018-meeting/public-letters-to-the-uac.pdf>

The main problem was that someone decided that the fair way to share trenching costs was to divide them equally among the water, gas, and fiber utilities, even though most of the actual cost was due to the water and gas infrastructures. On 04-09-18, Council halved the cost allocated to the Fiber Fund -- to \$1,070,202, which was still outrageous -- but didn't say how costs should be shared on future projects. Maybe Magellan could comment on that.

1:28:30:

Commissioner Bowie: Thank you.

1:28:34:

Chair Forssell: Commissioner Smith.

1:28:36:

Commissioner Smith: Thank you, Chair. I think my question is for Dave. Dave, do we have an updated number of individual residents that have signed up through the fiber hub? With expression of interest?

1:28:51:

David Yuan: I DON'T have that number, unfortunately. Meghan and -- um -- Amanda probably has that figure. But I could get an update for you. And send ...

1:29:01:

Commissioner Smith: Please.

1:29:01:

David Yuan: Sure.

1:29:02:

Commissioner Smith: Thank you. [pause]

As of 04-06-22, 239 people had pinned themselves on the map. See further discussion at 2:35:02.

1:29:10:

Chair Forssell: Commissioner Metz, did I see your hand in the air?

1:29:13:

Commissioner Metz: Yes.

1:29:14:

Chair Forssell: Go ahead.

1:29:15:

Commissioner Metz: Thank you. Mr. Yuan, Mr. Honker, thank you very much for your presentation. Since it's stated as a business plan which is 75 percent complete, there were some -- at least to me -- some missing ingredients that I would like to ask about. Specifically, three questions.

1:29:36:

I think the first thing is, where is the competitive assessment? Particularly, what will be our response to competitors? My number one concern is that there's a risk of retaliation by the incumbent broadband service providers. I think this is a big risk, which I don't see as having been addressed. And also, more recently, I'm seeing new competitors entering this space, with different forms of technology. So, I think it's really important that they be an ingredient in the business plan.

1:30:14:

You talked -- My second question addressed market assessment. I think you have touched on that. I think my main concern is the take rate of 32 percent, which you described as "very conservative." To me, that seems, actually, aggressive. To be taking a third of the market against two large, entrenched competitors, doesn't -- you know, doesn't strike me as conservative.

Longmont, CO: NextLight's network achieved a take rate of 54 percent within 5 years, against "entrenched" incumbents Comcast and CenturyLink.
<https://muninetworks.org/content/more-half-longmonters-choose-nextlight-fiber-because-nextlight-fiber>

Chattanooga, TN: EPB's network achieved a take rate of 58 percent residential (and 30 percent commercial) within 12 years or so, against Comcast and AT&T.
https://assets.epb.com/media/Lobo%20-%20Ten%20Years%20of%20Fiber%20Infrastructure%20in%20Hamilton%20County%20TN_Published.pdf

Fort Collins, CO: Connexion's network achieved a take rate of 31 percent within 4 years -- they're still building out -- against Comcast and CenturyLink.
<https://www.govtech.com/network/fort-collins-gets-city-owned-broadband-network-off-the-ground>

Loveland, CO: Pulse's network achieved a take rate of 22 percent within 1 year -- they're still building out -- against Comcast and CenturyLink. They think a 42 percent take rate is "well within reach."
<https://www.lovelandpulse.com/pulse-take-rate-progress-towards-the-ultimate-goal/>

Wilson, NC: Greenlight's network achieved a take rate of 45 percent within 10 years, against TWC, AT&T, and CenturyLink.

<https://ilsr.org/wp-content/uploads/2020/12/Wilson-Case-Study-12-07-2020.pdf>

I guess we'll have to get the data, to see what turns out. But I think that's the key thing: to get the data about what services customers want, and what they'll pay for them.

1:30:54:

I think the third question I had, in terms of a business plan, is -- are -- where's the technology assessment? Especially, what are we doing to address risk of technology obsolescence? I'm particularly concerned about the obsolescence of the curb-to-house fiber drops.

A fiber drop won't become "obsolete" in the sense that the subscriber will have to switch to something else to get the required performance or lower operating costs. A fiber drop might turn out to cost more than a wireless alternative capable of lesser but adequate performance will cost in a few years.

This represents a very large fraction of the costs of the overall project. And I've explored this with communications experts, with folks who have worked for me in the past.

If Commissioner Metz would like to name some of these people and the companies they work for, I'd be interested.

And it sounds like, you know, 5G wireless could be financially and functionally very competitive with what we're proposing.

I rely on Doug Dawson, who runs CCG, a telecom consulting company,

<https://potsandpansbyccg.com/aboutccg/>

to keep wireless discussions real. Here he debunks 5G hype:

04-08-22: "The Death of Millimeter Wave Cellular"

<https://potsandpansbyccg.com/2022/04/08/the-death-of-millimeter-wave-cellular/>

Dawson wrote a series of articles on what he called "Fiber-to-the-Curb."

<https://potsandpansbyccg.com/tag/fiber-to-the-curb/>

And, actually, functionally superior, because it allows somebody to connect their -- a resident to connect their internet with a cellular network.

Commissioner Metz seems to suggest that a wireless signal could go from a tower outside the home directly to a subscriber's device inside the home. That's problematic, especially at high speed.

If a subscriber to FTTP, provided by Palo Alto Fiber, would like devices inside his home to connect to the network wirelessly, the City can provide a suite of wireless "routers" inside the home that can make those connections. (The subscriber should pay extra for this capability.) This works because the wireless connections are short and don't have to pass through walls.

So, you know, as you indicated, I'd expect to see all these answers as feeding into a financial pro-forma. And I assume that will be at least, like, a ten-year pro-forma, with P&L and cash flow. But I would hope it would incorporate these other issues around competitive response technology. So, you know, with due respect to the work that's been done, which I feel is strongest on the operational side, I would like to see the business plan addressing these three key questions: competition, market -- market details, and technology. And I'd be happy to discuss any details.

1:32:26:

John Honker: No, thank you, Commissioner Metz. And those are all going to be included in the final plan. The reason we don't have the first two -- you know, really, the competitive assessment and the market assessment, kind of what those take rates are now, is -- we usually like to bring those up to leadership once

the survey's been done. Because it gives you a much better sense of what the existing marketplace looks like. Both on what existing services are out there and available and at what prices, but then, what are the behaviors of citizens and businesses? Who's subscribing to them? What prices are they paying? How satisfied are they with them? And, most importantly, what are the -- what is the preference in terms of brand, speed, and price -- among those providers that are out there, versus Palo Alto. Right? That's really what the guts of our survey will do -- is tell -- it'll inform the market analysis of what are they paying today, and what are they getting? But also, what is their affinity for the different providers? Right? And we can actually -- we are actually introducing in the survey Palo Alto as the other brand, so we can test the brand equity of the City. And then also be able to measure both speeds and prices. Right? And measure for preference. So, what you'll see when that survey is done is really a matrix of existing providers that are out there today, what they're offering, and what market share each provider has, in those different speed tiers. You know, 500 megabits [per second], 300 megabits [per second], 100 megabits [per second]. And then, what Palo Alto should be setting its rates at -- and its speeds at -- to be able to capture as much market share as possible. That's really the guts of the conjoint analysis -- We call -- we use a choice-based conjoint analysis to tease out that information. So, that will be coming to you in the next run of the final business plan.

1:34:34:

On the technology assessment, it's important. Right? I mean, we see Verizon in Sacramento doing their 5G trials. And their wireless to the home. Or, Wireless Last Mile they call it.

This 04-13-22 article talks about Verizon's 5G Home Internet product, https://www.cnet.com/home/internet/verizon-5g-home-internet-review/?mc_cid=4bc39b2d3a&mc_eid=99443c82f8#ftag=CAD590a51e which it says features downloads that might be as fast as 980 Mbps, but are more likely 300 Mbps on average, and uploads of more like 50 Mbps. To me, that's not competitive with FTTP, which can do 10 Gbps symmetric today, and faster in the future.

There are still a lot of challenges with it. But it's a competitive opportunity for another technology to potentially come in the place of fiber. Now, what we do see is that, at least in the current, you know, versions of that, you need a fiber to every other home, or every third home. So, it still takes a lot of fiber to have those last-mile wireless solutions deployed. Which means, you know, it still a lot of fiber that's being deployed. What's also important is, if another emerging technology comes about while Palo Alto's deploying, there's no reason that you wouldn't switch over to that. That's -- You're not buying everything off the shelf from day 1. So, if there is another emerging technology, I think what the business plan has to focus on is -- OK, let's define what those are. Let's watch for the evolution and the adoption of those technologies. And, as Palo Alto is building out, make sure that you're on top of the game, so that you can start deploying those, and be as competitive -- or MORE competitive -- because you're an entrenched provider, to be able to deploy those, you know, faster, quicker, and cheaper.

1:36:10:

Commissioner Metz: OK. Thank you. I look forward to seeing the discussion on those three topics.

1:36:16:

David Yuan: I also want to add that we have been contacted by some local home startups and ISP providers. And they're also interested in partnering or seeing if there's any kind of strategic synergies. We haven't reached out to them yet. We're still finishing our business case. So, there will be opportunities to engage with these other new technologies and providers, as well.

1:36:41:

Chair Forssell: Commissioner Bowie.

1:36:42:

Commissioner Bowie: Yes. I was also just going to reiterate a point that we discussed before, about brand

differentiation based on privacy, data handling, local control. Just kind of the way the internet is handled. That may be something that is attractive to customers. in Palo Alto in particular.

1:37:07:

David Yuan: In the survey, we will be asking some of those questions. What's more important to the Palo Alto residents and businesses. And local control, privacy are part of those survey questions. So, we'll be gauging the importance of that. How we differentiate ourselves.

1:37:28:

Chair Forssell: Are there any other commissioner questions or comments? I think my own have been covered by other commissioners. You know, I share Commissioner Metz's concern for uptake rates. I just don't know how many -- how many people out there -- residents and commercial customers -- It would be great to have more data on what services they have available, what they're using, and whether they're satisfied with it. I'm generally wary of surveys. I mean, I guess you'll do your best to ask good questions. But I continue to be worried that people will dash off some responses, and -- You mentioned potentially doing a deposit. Or, taking deposits, to indicate real interest in participating in Palo Alto Fiber. I thought that was a great idea. And I think it's worth mentioning -- since it seemed to be early in the presentation -- one of the key questions -- the sort of hybrid outsourced model -- it made sense to me. Especially hearing that most of the outsourced activities were things -- are things that don't need to be local, and are entirely virtual. Feels like a decent opportunity for some cost savings. Although time will tell. And I guess, Council Member Cormack, did you want to say anything?

1:39:07:

Council Member Cormack: Yes, please. Thank you, Chair Forssell.

1:39:10:

Chair Forssell: Go ahead.

1:39:10:

Council Member Cormack: So, understanding that this will -- you all will be making a recommendation that will come to Council, I just wanted to add a few thoughts, questions. As I recall, part of the reason for us considering this was to have customer service potentially be a differentiator, not just cheaper. So, I encourage you all to incorporate that into your thinking. And if that's not going to happen, we should at least address it.

1:39:38:

I don't understand who will make this outsourcing decision that you've described. Is that a Council decision? Or will that be made by whatever "governance" is put in place?

1:39:50:

David Yuan: I think it will be discussed at the governance level, and then it will be brought to Council for approval. So, we ...

1:39:56:

Council Member Cormack: OK. So, when you say "governance," let's just be clear on -- Are we going to have a board that runs this?

1:40:03:

David Yuan: We haven't figured that out yet, unfortunately. We're going to be meeting with Legal, ASD, and

...

1:40:05:

Council Member Cormack: David, it's a little hard for me to hear you. Maybe they can hear you better.

1:40:12:

David Yuan: Oh. Yes. Oh, sorry. So, we'll be meeting with Legal, HR, and also Finance, in the next week or so, to start these discussions. So, we'll bring up some of these models. Hopefully, at the joint meeting.

1:40:23:

Council Member Cormack: OK.

1:40:23:

David Yuan: Maybe even sooner, if possible.

1:40:25:

Council Member Cormack: And then, my quick, back-of-the-envelope math -- because if I don't do it, Council Member Fliseth will, when it comes to Council -- is that if it's \$700k a year in cost-savings, and you average that out over 10,000 customers, that's \$70 a year, which is about \$6 a month. So, anything -- When this comes forward, anything you can do to show those costs -- the same way we do with utilities in general -- I think will help all the decision makers better understand the tradeoffs.

1:40:57:

And then, finally, could someone refresh my memory on the potential source of the \$86 million funding gap? Are we planning to bond that? Certainly, we won't get all of it from other federal -- or, other governmental entities.

1:41:12:

David Yuan: Yeah. We haven't figured that out. But we are looking at all the different options. Bond financing. Borrowing from other utilities, if possible. We had the -- We also looked into the Electric Special Projects Reserve -- if we can borrow from there. And then we'll see how much more revenue that the Fiber Fund could generate in the next few years as well.

1:41:32:

Council Member Cormack: Ah. Between now and then. OK. All right. So, again, we have about a third of the money already available. OK. Thank you so much.

1:41:43:

Chair Forssell: All right. I think that concludes our discussion of this topic. Thank you very much, Mr. Honker, Mr. Yuan. Why don't we -- Let me see, we usually take a short break about half way through, and I think we're at that point. Why don't we go ahead and take a 10-minute break and return at 7:50 to do the rest of the agenda. See you all back in ten minutes.

1:42:14:

#####

Excerpts from Item IX: Future Topics for Upcoming Meetings

2:32:28:

Chair Forssell: Future Topics for Upcoming Meetings. Commissioner Johnston.

2:32:35:

Commissioner Johnston: So, I had two questions on the Rolling Forecast. One was: I see the reference to a joint UAC / City Council Study Session on Fiber in August. And there was some reference to that in the Magellan report. Has a date been set for that? August being a month when a lot of people tend to take time off. I think it would be helpful to get a date set for that.

2:33:04:

Director Batchelor. Commissioner Johnston, that date IS set. It's for August 8th.

2:33:08:

Commissioner Johnston: August 8th. OK. Thank you.

#####

2:35:02:

Chair Forssell: Commissioner Smith.

2:35:04:

Commissioner Smith: Thank you. Sorry. Any other topics that -- I hope I'm not ahead of the curve here. Any other topics that we want to talk about. Is it possible -- Periodically, could we just have regular updates with respect to the counts on the fiber hub? It is our -- if you will, our outreach to the public. It's important that we understand exactly how much of the public is interested in fiber to the home. On a month-by-month basis. And make certain that we are penetrating our neighbors. And if we're not, that's equally telling. It just means that more work is necessary. It would be great, though, to have regular updates on the count.

2:35:50:

David Yuan: Sure, we can do that. And, courtesy of Mr. Hoel, the count, currently is 239 on the fiber hub.

2:35:57:

Commissioner Smith: Brilliant. Thank you.

2:35:59:

Chair Forssell: Yeah, I think we've talked before about -- when we're talking about topics for upcoming meetings, to flag if it needs to be a discussion item, or an agenda item, or if it's just informational. And I think, Commissioner Smith, you're just asking for an informational -- like, you just want the data. On a regular basis.

2:36:18:

Commissioner Smith: Yeah. If anything -- I mean, we can all do this. It doesn't need to be charted. I just want to know what the number is. Right? But, as we track on a month-to-month basis, if we show increasing, that's good. If we show decreasing, or flat -- you know, we have a potential issue, considering the fact that it remains possible that Council will review this as a "go/no-go" decision in August.

So, the request is for the total number of pins to be reported at each UAC meeting. There are three such meetings before the joint study session between Council and UAC on 08-08-22. (See 2:33:04.)

Anyone interested in trends will have to consider data from multiple meetings.

2:36:46:

Director Batchelor: So, Commissioner Smith, what I can do is, if you'd like to do this on a monthly basis, so that we're just not writing just an informational report, I could give that in my GM update, if you would prefer.

2:36:57:

Commissioner Smith: That would be great. Yeah, that would be great. Thank you, Dean. Yeah.

2:37:03:

Chair Forssell: That's a great idea.

After the meeting, I suggested to David Yuan that the map itself could display the number of pins.

<https://fiber-palo-alto.hub.arcgis.com/pages/get-involved>

David said he thought that was a great idea, and he'd check with the implementation team about doing that. But that doesn't mean it will actually happen.