

Baumb, Nelly

From: Jeff Hoel <jeff_hoel@yahoo.com>
Sent: Tuesday, May 18, 2021 12:17 PM
To: Council, City
Cc: Hoel, Jeff (external); UAC
Subject: COMMENTS -- 05-24-21 staff report on Fiber Network Expansion Project (including FTTP)

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

Council Members and UAC Commissioners,

On 05-24-21, Council will consider an item about the Fiber Network Expansion Project (including FTTP).

Agenda:

<https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/agendas-minutes/city-council-agendas-minutes/2021/05-24-21-ccm-agenda.pdf>

Staff report (14 pages):

<https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/reports/city-manager-reports-cmrs/2021/id-12117.pdf>

Please see detailed comments below the "#####" line.

GENERAL COMMENTS:

UAC recommended that Council not consider public-private partnerships going forward, but the staff report continues to talk about them. Why?

To me, the most important point disclosed at UAC's 04-21-21 meeting is that citywide municipal FTTP could be financially successful if it got a take rate of 24 percent. And that most municipal FTTP networks actually get a take rate of more like 40 percent.

Since citywide municipal FTTP is affordable, I think it's the best network to use not only for FTTP but also for other uses, such as AMI, SCADA, etc.

Thanks.

Jeff

=====
Jeff Hoel
731 Colorado Avenue
Palo Alto, CA 94303
=====

#####

COMMENTS:

--- page 1 ---

--- page 2 ---

2. Establish City-operated ISP model providing FTTH service within five years.

UAC didn't really question staff's estimate that it would take 5 years. Council should ask staff about that. Other municipalities, e.g., Longmont, CO, took more like 3 years.

UAC said the municipal FTTP network should be citywide.

--- page 3 ---

The FTTH trial passed 230 homes and included 66 participants in the Community Center neighborhood.

The FTTH Trial did NOT "pass" 230 homes." In order to "pass" a premises, you have to provide the infrastructure necessary to "connect" to the premises easily in the future.

--- page 4 ---

--- page 5 ---

--- page 6 ---

--- page 7 ---

--- page 8 ---

▪ Full buildout to 100% of homes in the City

This means 100% of homes and businesses in the City will be "passed," but a premises will be connected only if the premises takes service.

--- page 9 ---

--- page 10 ---

--- page 11 ---

Comcast reports 100% homes passed in Palo Alto using Cable based broadband.

It's not really 100%. For example, at the 08-05-20 UAC meeting, the Palo Alto Hills Broadband Working Group said Comcast was not available in their neighborhood.

<https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2020/08-05-2020-special/final-uac-minutes-august-5-2020.pdf>

Comcast's HFC product offers at most "up to" 1 Gbps down and "up to" 35 Mbps up. If the FCC changes the definition of "broadband" to "at least 100 Mbps down and 100 Mbps up," Comcast's HFC product won't even be broadband.

AT&T reports up to 28% FTTH availability within Palo Alto.

BroadbandNow says, based on Form 477 data AT&T reported to the FCC, that in 28.2 percent of Palo Alto's census blocks, at least one home had access to AT&T Fiber.

<https://broadbandnow.com/California/Palo-Alto>

Both AT&T and Comcast offer up to 1 Gigabytes download speeds

Not true. Both AT&T Fiber and Comcast offer download speeds of "up to" 1 gigabit per second (not 1 gigabyte per second, which would be 8 gigabits per second).

and up to 25% upload speeds.

I suppose this means "up to" 25 Mbps upload speeds.

Comcast's strong suit is its use of DOCSIS.1, a technology that allows them to serve customers over conventional copper wire at fiber speed, but a reduced operational cost to the carrier.

I believe Comcast is using DOCSIS 3.1 technology in Palo Alto. (There has never been a DOCSIS.1 technology. DOCSIS 1.0 technology is ancient.)
<https://en.wikipedia.org/wiki/DOCSIS>

DOCSIS 3.1 technology uses coax cable (not "conventional copper wire") to connect to premises.

By national standards, Palo Alto is well served by AT&T and Comcast

What exactly are these "national standards"? In any case, there's no reason Palo Alto has to be limited by "national standards."

Baumb, Nelly

From: herb <herb_borock@hotmail.com>
Sent: Sunday, May 23, 2021 7:42 PM
To: Council, City; Clerk, City
Subject: May 24, 2021 Council Meeting, Item #8: Fiber Network Expansion and FTTP

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

Herb Borock
P. O. Box 632
Palo Alto, CA 94302

May 23, 2021

Palo Alto City Council
250 Hamilton Avenue
Palo Alto, CA 94301

**MAY 24, 2021 CITY COUNCIL MEETING, AGENDA ITEM #8
FIBER NETWORK EXPANSION PLAN AND FIBER-TO-THE-HOME (FTTH)**

Dear City Council:

I urge you to reject the staff recommended strategy that would construct a Fiber-to-the-Home (FTTH) project one neighborhood at a time, and that relies on the income from earliest built neighborhoods to finance later built neighborhoods.

We know from past Council actions regarding undergrounding electric utilities, rebuilding already undergrounded neighborhoods, and sidewalk reconstruction standards that only some neighborhoods would get FTTH, while the other neighborhoods would be promised FTTH would be built in those neighborhoods in the future but FTTH would never be built in those neighborhoods.

Some neighborhoods have had their underground electric utilities paid for by all rate payers, but now other neighborhoods may never get underground electric utilities and would have to pay for them instead of them being paid for by the Electric Fund.

Neighborhoods have had their scheduled undergrounding postponed to permit already undergrounded neighborhoods to be rebuilt.

The first neighborhoods to be rebuilt have had electric equipment like transformers placed underground, but subsequent rebuilds have required that equipment be placed above ground.

The first neighborhoods had their sidewalks reconstructed to adopted standards, while later neighborhoods were reconstructed to a lower standard and promised they would later be rebuilt to the higher standard, but a later City Council decided to break that promise.

If you don't identify now the source of all income to build FTTH citywide, then FTTH will come to only some selected neighborhoods.

Funding Sources for Fiber-to-the-Home

The entire funding for a citywide FTTH project should come from the Fiber Reserves plus a non-recourse revenue bond backed by the income of both the FTTH project and the Dark Fiber Fund.

Local advocates who want FTTH are the most likely investors for such revenue bonds.

City Role in FTTH; Network Operator; and Internet Service Provider

In 2006, staff said, "Staff believes, due to regulatory and other concerns, it would be advisable to own only the dark fiber." (See CMR:299:06, pages 2 and 3.)

The City should own and control the FTTH network and hire a contractor to be the Network Operator.

The City itself should not be an Internet Service Provider.

The Network Operator could be an Internet Service Provider (ISP), but the FTTH network should be open to other ISPs.

Companies like AT&T and Comcast want to own and control an integrated business including content, operation, and the physical network that other providers are prevented from using, which allows the various parts of the business to cross-subsidize each other.

If the City's contracted Network Operator is also an ISP, it will be important to unbundle the costs attributed to those two functions to permit other ISPs to access the FTTH network on a non-discriminatory basis.

If the City FTTH network truly serves all neighborhoods, and potential customers can connect to the network at any time just as they can connect to the City's other utilities, rather than just during a small window of time, then it would be justified for the Dark Fiber Fund to create a

special fee for the FTTH network to pay only the depreciation rate for the dark fiber used based on the fiber's 30-year useful life, and pay only the same cost that City departments pay for attaching equipment that are expensed if the value is up to \$5,000, and depreciated over 5 years for higher amounts.

Network Architecture

It is still possible to decide on the architecture of the FTTH network before building out the dark fiber network.

There are three possible network architectures that I am aware of.

Point-to-point Ethernet gives each customer a dedicated path with a fixed symmetrical bandwidth.

Passive optical network saves on capital expenses and operating expenses, and also does not need any active equipment along the network, but requires customers to share bandwidth that leads to data speeds that vary based on how many customers are using a shared access point, and that often has much lower upload speeds than download speeds.

Passive optical network plus wave division multiplexing would enable all customers to have a fixed symmetrical bandwidth by having the active equipment (lasers) at the headend while taking advantage of the cheaper construction costs of the passive optical network.

It is more complicated to make the decision on network architecture after building out the dark fiber network as recommended by staff and the UAC, then it would be if the network architecture is chosen first.

Conflicts of Interest

City officials who have potential conflicts of interests are prohibited from participating in decisions that have a foreseeable material financial effect on their sources of income or investments.

During past City Council actions on fiber-related agenda items, former Council Members Kleinberg, Mossar, Morton, and Ojakian recused themselves due to stock ownership in AT&T, Comcast, SBC, and Verizon, and also due to Kleinberg's source of income from Google. (For example, see Finance Committee minutes for 7/18/2006 item #4; and City Council minutes for 3/5/2007 item #12; 6/18/2007 item #12; 7/9/2007 item #12; and 7/14/2008 item #11.)

Former Mayor Yoriko Kishimoto sold her Apple stock so that she could participate in fiber matters.

Former Senior Management Analyst Jim Fleming who served as the subject matter expert for the Fiber Citizens Advisory Committee (CAC) owned AT&T stock but participated in many Council meetings on fiber.

Current Utilities Strategic Business Manager David Yuan owns stock in both Apple and Google but participated in the subject of this agenda item.

Six of the seven Utilities Advisory Commission (UAC) members who participated in making the recommendation that is the subject of this agenda item have investments that could be impacted by their recommendation and, therefore, create a conflict.

Commissioner Danaher has investments in Apple, Comcast, Google, and Verizon.

Commissioner Forssell has an investment in Apple.

Commissioner Jackson has investments in Apple, AT&T, and Comcast.

Commissioner Johnston has investments in Alphabet, Apple, and AT&T.

Commissioner Segal has an investment in Apple.

Commissioner Smith has investments in Apple and Google.

I also note that Commissioners Jackson and Johnston have investments in Danaher Corporation that indicate they should not have participated in the election for UAC Chair when Commissioner Danaher was a candidate for Chair.

When Google paused its fiber project and was unwilling to pay for the infrastructure to enable it to have a wireless home Internet access, both Jim Fleming and then Director of Information Services Jonathan Reichenthal said at a Fiber CAC meeting that the City's current path of building out the City's fiber backbone into neighborhoods would be a perfect match for a Google wireless Internet business.

The most direct argument against my concern about potential conflicts of interest regarding this agenda item would be an assertion that it is not foreseeable that the City will be able to build a citywide FTTH project based on the recommendation before you.

However, if you believe that you have a feasible proposal before you, then I believe Mayor Dubois and Council Member Cormack should not participate in this agenda item.

Mayor Dubois has investments in Apple, NextLevel Networks, and Google.

Council Member Cormack has investments in Alphabet, Apple, and Comcast.

Thank you for your consideration of these comments.

Sincerely,

Herb Borock

Baumb, Nelly

From: Don Jackson <dcj@clark-communications.com>
Sent: Sunday, May 23, 2021 8:35 AM
To: Council, City; DuBois, Tom; city.clerk@cityofpaloalto.com
Cc: UAC; Minor, Beth; Batchelor, Dean
Subject: Slides to accompany my (planned) public input for Council 5/24 meeting, Agenda item 8, "Review of the Fiber Network Expansion Plan and Fiber-to-the-Home"
Attachments: Council-Fiber-Options-Summary.pdf

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

Honorable Council Members,

Attached please find 6 slides to accompany public comments I plan to make re the Fiber agenda item at the 5/24 Council meeting.

If I am selected to speak on this item, I request that these slides be screen-shared with all participants during my allotted time, either by a member of Staff (or I'm happy to do so, if given screensharing privledges)

Respectfully,

Don Jackson

Fiber Options Reviewed by UAC

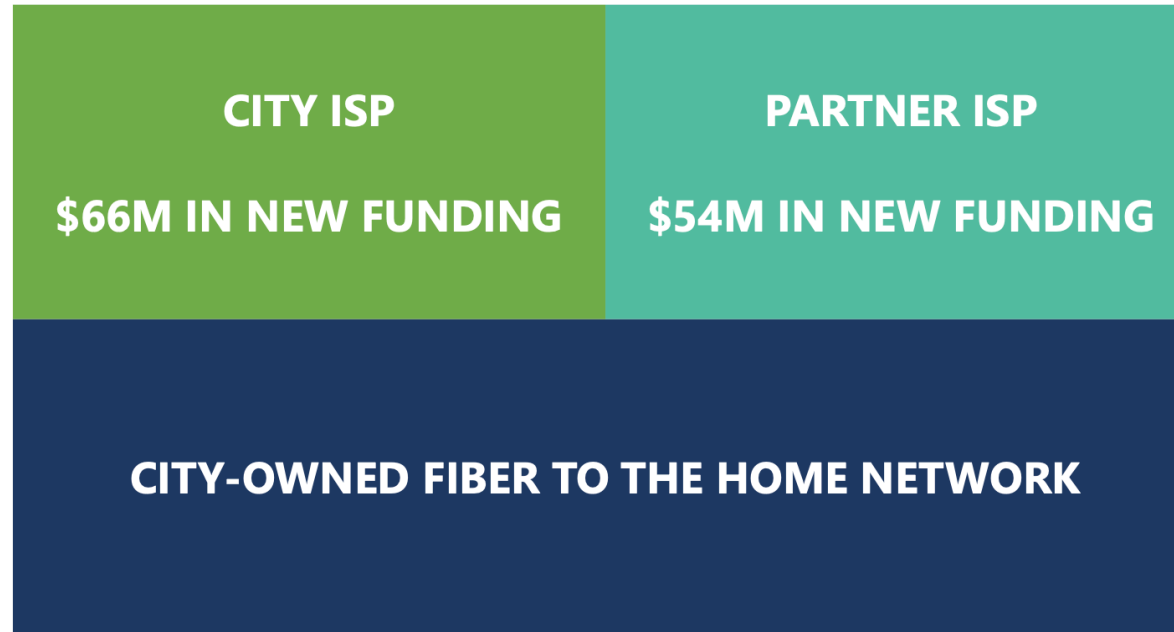
I am Don Jackson, UAC Commissioner (term ending 5/31/21), also member of UAC Budget Subcommittee in 2021 (which met with Utility Staff and Magellan several times in preparation for the UAC agenda review of Fiber), so I've spent several full work-weeks this year contributing to this effort

The following two slides summarize the:

- Fiber projects: Expansion and FTTH
- FTTH operating models
- FTTH funding alternatives

considered at the UAC meeting on April 21, 2021

TWO BUSINESS MODEL OPTIONS FOR FTTH



Summary of UAC considered

- Fiber projects
- FTTH operating models
- FTTH financing alternatives

BUSINESS CASE SUMMARY

1. Bond

(or Borrow)

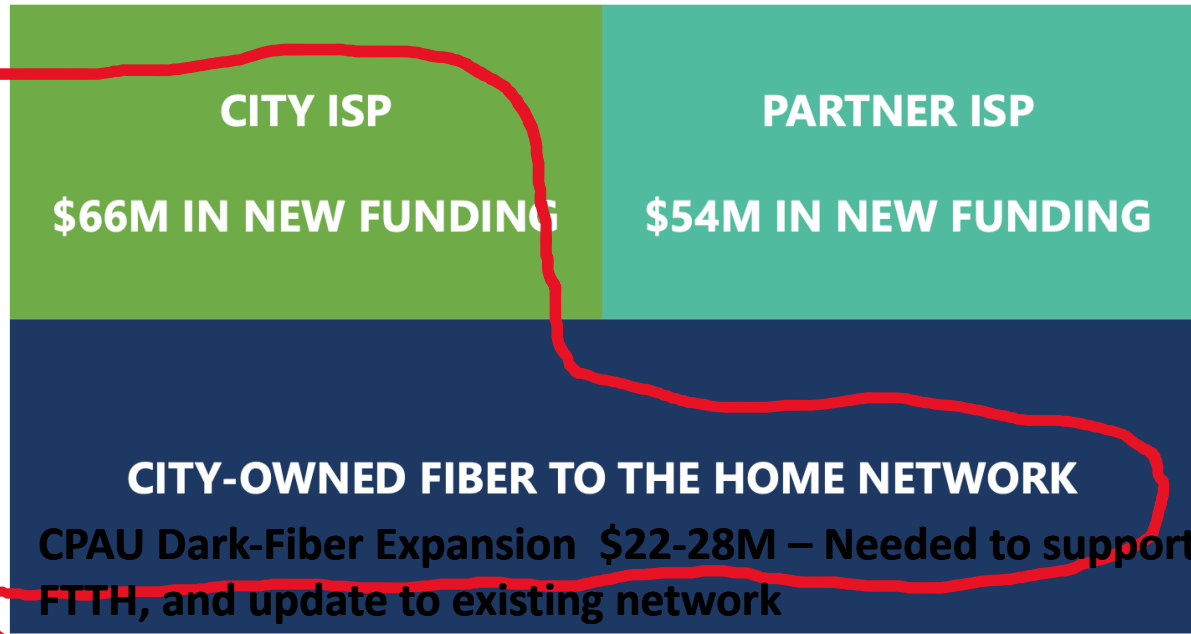
- Buildout to 100% of homes & businesses in 5 Years

2. No Bond

- Buildout to 13,000 homes & businesses in 3 years
- Buildout to another 7,500 homes & businesses in 10 years
- Alternative strategies to fund the remaining 7,500 homes & businesses

CPAU Dark-Fiber Expansion \$22-28M – Needed to support FTTH, and update to existing network

TWO BUSINESS MODEL OPTIONS FOR FTTH



- Summary of UAC Recommendations re:
- Fiber projects
 - FTTH operating models
 - FTTH financing alternatives

UAC Recommendation →

BUSINESS CASE SUMMARY

1. **Bond (or Borrow)**
 - Buildout to 100% of homes & businesses in 5 Years
2. **No Bond**
 - Buildout to 13,000 homes & businesses in 3 years
 - Buildout to another 7,500 homes & businesses in 10 years
 - Alternative strategies to fund the remaining 7,500 homes & businesses

CPAU Dark-Fiber Expansion \$22-28M – Needed to support FTTH, and update to existing network

Fiber FAQs

Jackson's personal opinions, NOT discussed at UAC

Question: Will the City also need to provide television service in order to provide a competitive Internet product?

Opinion: No.

The clear long-term trend is for content owners (NFL, MLB, NBA, HBO, etc.) to provide subscription-based access direct-to-consumers via the Internet. Some residents will choose to continue to subscribe to Cable TV, and possibly also continue with (bundled) cable-provided Internet service, but this should not prove to be a long-term obstacle to a City Internet-only service

Fiber FAQs - continued

Jackson's personal opinions, NOT discussed at UAC

Question: Will the City also need to provide telephone service in order to provide a competitive Internet product?

Opinion: No.

[Conventional landline telephone service is dying.](#)

Many people chose to use mobile telephone service exclusively
For residents and businesses that want non-mobile telephone service, there are numerous Voice-over-Internet-Protocol (VOIP) providers, [Vonage](#) and [RingCentral](#) are two examples.

Fiber Financial Viability

Jackson's personal opinions, NOT discussed at UAC

- Why is an Internet utility being held to a profitability standard?
 - How profitable are our streets/roads?
 - How profitable will the new \$100+M public safety building be?
 - How profitable are our libraries? (~ \$8M/year ?)
- Obviously, we must understand and accept the potential costs, which are estimated in the Staff/Magellan report
- That being said: with reasonably conservative estimates, it appears a FTTH service should be cash-flow positive in about 10 years
- Municipal high-speed broadband Internet:
 - Is financially viable
 - Will provide essential economic and quality-of-life benefits
 - Supports our decarbonization goals by reducing the need for commuting and car travel
 - Remote work supported by Internet service “saved us” during the COVID-19 pandemic, and highlighted the need for high-speed, symmetric broadband service

Baumb, Nelly

From: Hamilton Hitchings <hitchingsh@yahoo.com>
Sent: Saturday, May 22, 2021 2:11 PM
To: Council, City
Cc: Shikada, Ed
Subject: Please do not approve City's Fiber To The Home proposal

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

Please do not approve the City's Fiber To The Home (FTTH) proposal. For the following reasons:

- AT&T and Comcast already provide fast, reliable and cost-effective service including Fiber
- While some neighborhoods are not yet covered by Fiber, both AT&T and Comcast are rapidly building out their capacity and AT&T plans to cover the whole city
- Both companies are improving their offerings quite rapidly and will continue to do so, making comparisons to past offerings outdated
- It is unlikely that the City Utilities will be able to offer competitive pricing and speed and also be profitable
- It will result in an overbuild likely making AT&T, Comcast and especially the City unprofitable
- Today, almost every resident household already has Comcast or AT&T and can trivially upgrade to faster service with the same provider if they want. To get customers to switch the City's offering it must be substantially better / cheaper.
- Furthermore both AT&T and Comcast can bundle cable and phone service offering deeper discounts, which the city cannot do.
- The City is proposing a City ISP model with a \$85 million capital expenditure with the assumption they get an average 32% take rate, but what if the service only gets a 10% or 20% average take rate?
- The debt financing is very risky because it assumes the service will be competitive but if not could lower our credit rating for future infrastructure projects.
- If the City's Fiber service is not profitable it will drain millions a year from the utilities requiring all utilities customers (not just fiber users) to subsidize it and will not be able to invest in upgrades to keep the service competitive going forward.
- The money used for this project could instead go to improving the local electrical grid reliability, smart meters, other utility infrastructure improvements, lowering utility rates for existing customers and providing sites for better 5G coverage
- You could even fund more direct utility subsidies for low-income households
- This program defocuses the utility department from its core missions including providing a more reliable and modern electrical grid.

Palo Alto is already well served with high speed internet offerings from both Comcast and AT&T. While comcast was reliable for me, I recently switched to AT&T Fiber to save money and AT&T service is absolutely awesome. I get 1 GB/s upstream and downstream with 15 millisecond ping time to San Jose and very reliable. Best of all it only costs \$75 per month. Note, AT&T also offers a \$55 a month version for 300 MBs upstream and downstream. Comcast also offers 300 MB/sec for and 1200 GBs (Fiber). It is very unlikely that the City of Palo Alto will be able to offer at that price point profitable or with as good service as AT&T.

Having the City enter the fiber market as a 3rd player would result in overbuild making everyone unprofitable. Unfortunately, that could mean wasting 10s of millions of dollars that could have gone to more productive infrastructure not already served by private industry. In addition, it could result in a negative cash flow of millions of dollars per year from other utilities customers not using the city's fiber service.

Please keep the City's utility department focused on upgrading our electric grid and making it easier to achieve our climate goals rather than duplicating existing commercial services and run the risk of a financial train wreck for the City.

Hamilton Hitchings