



City of Palo Alto City Manager's Report

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TO: HONORABLE CITY COUNCIL

FROM: CITY MANAGER DEPARTMENT: UTILITIES

AGENDA DATE: AUGUST 2, 1999 CMR:332:99

SUBJECT: REQUEST FOR COUNCIL DIRECTION REGARDING FIBER-TO-THE-HOME TRIAL

REPORT IN BRIEF

After receiving Council direction to proceed with the Community Center neighborhood Fiber to the Home Trial (FTTH) trial, staff contacted the neighborhood association, which appointed a team to represent it in working with the City on three issues: the trial area boundaries, terms and conditions for trial participation, and marketing of the trial. This team consisted of three representatives from PA Fibernet and two representatives from the Community Center Neighborhood Association (CCNA). After considerable discussion with staff, this group was unable to reach an agreement which adhered to the pricing guidelines and the five year payback period that Council adopted for the trial, as the CCNA representatives believed it would discourage sign-ups for the FTTH trial. The PA Fibernet representatives did not find acceptable a compromise proposal put forward by staff as a possible alternative, which would require Council approval. Recent discussions with another representative of CCNA have, however, resulted in an agreement on a plan that staff believes will accommodate all customers interested in having FTTH. As a result, staff is presenting each of these alternatives for the Council to review and to provide direction. These alternatives include: proceeding under the current Council-approved process; the PA Fibernet representatives' proposal; or the "risk sharing" proposal that is a compromise between the original Council-approved process and the

PA Fibernet proposal. Staff is requesting Council direction as to the parameters under which to proceed.

In addition, staff is requesting that Council authorize the City Manager to undertake marketing for a trial of similar size and cost in the Barron Park Area if there are insufficient sign-ups in the Community Center Neighborhood to make the trial already approved there viable.

RECOMMENDATION

Staff recommends that Council:

1. Approve a change in the monthly pricing for the Fiber to the Home (FTTH) trial from \$75 to \$45 for 10 Megabits per second (Mbps) and from \$110 to \$100 for 100 Mbps service, set the contractual payment period at 2 ½ years, and offer monthly financing of the up-front construction payment amount (less \$500) over the 2 ½ year period.
2. Authorize the City Manager to proceed with marketing a trial of similar size and cost in the Barron Park Area if insufficient sign-ups occur in the Community Center Neighborhood to make a trial there economically feasible.

BACKGROUND

On April 5, 1999 the City Council authorized staff to proceed with a medium FTTH trial area, delivering Internet access services to approximately 69 customers in the Community Center neighborhood. The proposed service would have data rates of 10 or 100 Mbps and be delivered over an Ethernet local area network (LAN). Construction costs were estimated at \$380,000 (with contingency funding) and were to be fully recovered through a contract arrangement in 5 years.

On May 10, 1999, Council adopted a Budget Amendment Ordinance (CMR:228-99) for \$380,000 and created the Fiber to the Home Capital Improvement Program (CIP #9916).

DISCUSSION

After receiving Council direction to proceed with the Community Center Neighborhood (CCN) trial, staff contacted the Community Center Neighborhood Association (CCNA), which appointed a team to represent it in working with the City on three issues: the trial area boundaries, terms and conditions for trial participation, and marketing of the trial. This team consisted of three representatives from PA Fibernet and two representatives from the Community Center neighborhood.

Staff met with the CCNA representatives a number of times. The CCNA representatives had three concerns with the proposed trial plan. They felt that the service pricing was higher than most people would be willing to pay, the 5-year contract arrangement was too long, and the area proposed by staff was too small. Staff offered to expand the trial area, increasing it from an

area containing 415 residences to 580, albeit pointing out that service could not be provided to the entire area for \$380,000. The CCNA representatives felt that there would be an insufficient number of signups to make the project viable. In order to make the trial more attractive to the residential community, staff offered to propose to Council that the contractual period for payments be reduced to a 2 ½ year period and the pricing be reduced from \$75/\$110 to \$45/\$100 per month, with financing provided for the up-front construction payment (less \$500) over the 2 ½ year period. Prices would then be at a level that is competitive with similar services. For example, cable modem service that will download information from the Internet at 500,000 bits per second (500Kbps) and will send information to the Internet at 200,000 bits per second (200Kbps) costs \$49 per month, including the ISP charge. An alternate cable modem service option is a download speed of 1 million bits per second (1.0 Mbps) and an upload speed of 200,000 bits per second (200Kbps), at a cost of \$199 per month, including the ISP charge. The FTTH service being proposed for the trial would provide a high speed bidirectional (download and upload) service of 10 million bits per second (10Mbps) in each direction at a cost of \$70 (\$45 + \$25 ISP charge) per month. The cost for the 100 Mbps service would be \$135 (\$100 + 35 ISP charge). If the initial up-front payment is financed over 2 ½ years, it would add \$25 to the monthly cost. This is 10 times the speed at less than half the price. This is the recommendation outlined in Alternative 3. The PA Fibernet representatives did not find this recommendation acceptable. Consequently, the staff, PA Fibernet representatives, and the CCNA representatives agreed to return to the Council to request further direction on the parameters under which the FTTH trial would be undertaken.

Staff has prepared a list of three possible options for the FTTH Project.

Alternative 1: Continue with Council-approved trial (CMR:162:99, April 5, 1999)

Alternative 1 leaves the pricing in accordance with Council direction to establish a contractual payback period of 5 years and a cost not to exceed \$380,000. The service connection and ongoing monthly fees under this alternative are as follows:

10 Mbps - 56 Customers	
Service Connection Fee	\$1200
Monthly Service Fee	\$75
100 Mbps - 13 Customers	
Service Connection Fee	\$2400
Monthly Service Fee	\$110

Under this alternative the customer would be required to sign a contract for the 5-year term of the project.

The benefits of this proposal are:

- * Assures a payback on the initial investment in 5 years.
- * Only 69 homes need to sign-up to make the project viable. Additional sign-ups over 69 would reduce the payback period.
- * Minimal financial risk to the City.

The major risk for this alternative is that participants may not sign-up for the following reasons:* The value of the service may be perceived as not worth the price, given other, less expensive alternatives, such as cable modems and DSL.

- * Contractual commitment period is too long, given the rapid changes occurring in the telecommunications field, such as increase in cable modem speed, potential buy-out of Cable Co-op by AT & T and proposed arrival of Residential Neighborhood Communications (RCN) with its Fiber/Coax Hybrid service.

Alternative 2: PA Fibernet Representative Proposal

Alternative 2 is the proposal that has been suggested by PA Fibernet during discussions with the CCNA appointed team. This proposal involves the same \$380,000 for construction of the network. The proposal increases the number of residences for potential service from 415 to 580 by expanding the project boundaries and reduces monthly service fees as follows:

10 Mbps - 85 Customers	
Service Connection Fee	\$1200
Monthly Service Fee	\$35
100 Mbps - 15 Customers	
Service Connection Fee	\$2400
Monthly Service Fee	\$70

These terms are identical to those sent out in a community survey in August 1998. More customers (100 versus 69 in the Council-approved trial) are assumed in order to reduce the pay-back period for the project, which for this proposal is 9 years. The customers under this alternative would be required to contract for one year of service, and could leave the system after completing the first year. Two-thirds of the funds would be recovered after 5 years.

The benefit of this alternative is that it reduces the monthly fees to a level that PA Fibernet believes the residents are will to pay, thus potentially increasing the number of subscribers to the service.

The risks for this alternative are:

- * The estimated payback period is longer than 5 years thus increasing the probability of technical or market obsolescence of parts of the system prior to investment recovery.
- * Customers are not contractually obligated to continue service even though the initial investment has not yet been recovered.
- * At the end of the contractual term for the initial sign-ups, 57 percent of the initial City funding would still be at risk.
- * Pricing is significantly below market pricing for services of similar capacity, such as Cable Co-op's price of \$199/month for 1.0 Mbps.
- * Requires a higher density of homes to sign-up for service to make the project viable. The currently approved funding of \$380,000 can provide service to 100 homes, but they cannot be spread all over the expanded area, but rather need to be somewhat clustered together to keep the fiber cable trunkline costs down.
- * Requires approximately 30 more applicants sign-up for service to make the project viable.

Alternative 3: “Risk Sharing” Proposal

Alternative 3 maintains the \$380,000 for construction of the network and increases the number of residences surveyed from 415 to 580 by expanding the project boundary, establishing service to 100 homes. The proposed connection and service fees are as follows:

10 Mbps-85 Customers	
Service Connection Fee	\$1200
Monthly Service Fee	\$45
100 Mbps-15 Customers	
Service Connection Fee	\$2400
Monthly Service Fee	\$100

The customers in this alternative would be required to contract for 2 ½ years of service and could leave the system after this term. The expected payback for this alternative is 6 years, one more than previously mandated by the Council. This alternative also requires 100 customers at this reduced price in order to obtain a 6 year payback, along with needing the signups to be somewhat clustered in order to construct the system for the approved amount of \$380,000. In addition, at the time of sign-up, customers will be offered the following options : paying their total project costs up front in one lump sum; paying a monthly fee of \$118 per month (10 Mbps service) with a one year commitment; paying a monthly fee of \$34 per month (10 Mbps service) with a four year commitment. These monthly payment options will recover 2/3 of the project’s cost. 100 mbps service will be offered similar option at different costs.

The benefits of this proposal are:

- * Reduces the monthly service fee to a level closer to what CCNA representatives maintain consumers are willing to pay for Internet service.
- * Lower monthly service fees could increase the number of subscribers to the service.
- * 67 percent (two thirds) of the cost of the project is recovered during the contract term

from the initial applicants.

The risks of this alternative are:

- * Customers are not contractually obligated to take service from the system until the initial investment is recovered.
- * At the end of the contractual term for the initial sign-ups, one third of the initial investment would still be at risk.
- * Requires a higher density of homes to sign up for service to make the project viable.
- * Requires that approximately 30 more applicants sign-up for service to make the project viable.

Staff is recommending this compromise alternative for the following reasons:

- * Provides the best balance between financial risk to the City and the ability to provide a competitively priced Internet services.
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- * At the end of the contract period 2/3 of the initial capital investment will have been recovered with 1/3 remaining at risk. Staff believes that this level of risk would be acceptable for a trial project.

Additional Marketing Concerns

Since the FTTH trial was approved in April 1999, two things have happened that have altered the telecommunications landscape in Palo Alto. First, AT&T has made a serious offer to purchase Cable Co-op and upgrade the existing all coax system to a Fiber/Coax Hybrid system. Second, Residential Neighborhood Communications (RCN) has committed to building a separate Fiber/Coax Hybrid system in Palo Alto to deliver Cable TV, Internet, and telephone services. Both of these systems would be competing for Internet customers using high speed cable modems with speeds of up to 1 MBPS for downloading, and 256 Kbps for uploading. TCI, now AT&T Broadband Services, is currently offering this service in Fremont, along with @Home as the ISP and the results have been very favorable. The difference between dial up modem service and Fiber/Coax modem service are dramatic, especially for residential use.

The service that the City will offer in the FTTH Trial is at least 10 times faster, with equal speed in both downloading and uploading. Based on the concerns of the CCNA members

about cost and obligation period, it appears that the extremely high speed service the City will be offering does not offer much value over cable modems for residential use, unless the resident is running a business out of the home that requires heavy Internet usage. Although a number of residents are running businesses from their homes, the number is small, compared to the total number of residences in the City. This is born out by the concern of CCNA that unless the price and obligation period are dramatically lowered, few residents will sign up for the service.

Rather than provide a specialized service that only benefits a few, Council may want to consider having staff concentrate its efforts and the City's funds on completing the UTS-RFP as quickly as possible and in all likelihood bring a modern Fiber/Coax Hybrid system to Palo Alto that will have benefits for the entire residential community.

Potential Alternative Trial Area in Barron Park

With the proposed pricing changes, it is anticipated that signups will increase. However, in the event that there are insufficient signups, staff would like Council to authorize staff to try and establish a trial of similar size and cost in the Barron Park area. This area was the second choice for performing the trial when the current trial was established due to the number of projected customers. This authorization will allow staff to proceed, without delay and without additional Council approval, with the process of marketing and potentially constructing a trial in the event there are insufficient signups in the Community Center Neighborhood to make the trial viable.

RESOURCE IMPACT

The following table was prepared for easy comparison of Alternatives 1 through 3.

	Alt #1-Current Council Direction	Alt #2-PA Fibernet Proposal	Alt #3- “Risk Sharing” Proposal
10 Mbps			
# of Customers	56	85	85
Service Connection Fee	\$1200	\$1200	\$1200
Monthly Service Fee	\$75	\$35	\$45
ISP Charge	\$25	\$25	\$25
100 Mbps			
# of Customers	13	15	15
Service Connection Fee	\$2400	\$2400	\$2400
Monthly Service Fee	\$110	\$70	\$100
Approx ISP Charge	\$35	\$35	\$35
Years to Payback Initial Investment	5	9	6
Years to Payback 2/3 of Investment	3	5	2 ½
Contractual Term	5	1	2 ½

POLICY IMPLICATIONS

Alternative 1 puts no City Utility funds at risk. Alternative 2 and 3 involve varying degrees of City Utility funds at risk. The amounts at risk are discussed in detail above.

TIMELINE

The revised schedule for the Fiber to the Home Trial is as follows:

Approve Pricing Plan	Aug 2, 1999
Project Sign-up Period	Aug 16-Oct 1, 1999
Issue RFP	Nov 1, 1999
Award Contract	Jan 2, 2000
Start Construction	Feb 1, 2000
Start Operation	July 1, 2000
Evaluate Performance	Jan 1, 2001
Trial Results to UAC and Council	Mar 1, 2001

ENVIRONMENTAL REVIEW:

A mitigated negative declaration has been prepared finding that the project will not have significant environmental impacts provided that mitigation measures are included in the project. This project will be required to adopt the mitigation measure identified in the environmental assessment that was completed prior to the construction of the fiber backbone.

ATTACHMENTS

Proposal from PA Fibernet

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