Summary Report of Risk Assessment of the Fiber to the Home (FTTH) Project

During the months of July and August 2003, the Administrative Services Department (ASD) staff carried out a review of the risks associated with the FTTH project. This analysis was based on the financial model developed by Uptown Services and focused on their recommended scenario. The analysis identified the key variables affecting the financial outcome of the project and carried out quantitative stress testing on those variables. In addition, the review included a summary assessment of the importance of qualitative variables (legal, technological, and competitive) that were not addressed in the Uptown analysis.

The purpose of this review was to provide an independent analysis of the risks associated with the FTTH project. In particular, the review focused on the potential “downside” or negative events whereby operating and financing costs required by the project could not be covered by incoming resources. The analysis covered key cost variables including interest rates, capital investment costs, and marketing and customer support costs. The analysis also reviewed key revenue variables including customer adoption rates for both cable TV and Internet, the pricing of services, upgrade pricing, and auxiliary revenue sources.

Summary of Results

The analysis highlighted several factors that significantly impact the financial outcome of the project.

Financial Risks
The key risk factors on the revenue side are:

- Penetration rates for TV and video
- Penetration rates for Internet

The rates of market share growth cannot be known until the project is well under way and significant amounts of capital are expended. Our current modeling indicates that the baseline penetration rates presented in the Uptown analysis are susceptible to changes in the economy, competitive pricing and other factors not in City FTTH control. Additionally, strong, possibly predatory price pressure by the
incumbent providers could target FTTH service in an attempt to deny it the required customer base to break even.

If, for example, overall Internet service penetration plateaus at 31.3% (rather than 36.3% as assumed in the baseline model), net cash decreases by $13 million, or 24% in year 20. If video penetration plateaus at 26% (rather than 31% in the baseline), net cash decreases by $11 million or 20%.

The risk factors on the cost side include:

- Long-term bond rates
- Cost of producing and installing the network interface unit (NIU), or control box, in the home
- Cost of manufacturing and installing the fiber network
- Required customer service staffing levels

If the long-term bond interest rate increased to 8% (up 2% from the baseline assumption), net cash in year 20 would decrease by $16 million, or 29%.

It is important to note that the issuance of approximately $31 million in debt does not appear to significantly impact the ability of CPAU to raise other bond funding for infrastructure or other investments. One of the strategies in the Long-Term Electric Acquisition Plan is to acquire potential generation and transmission capacity. This may involve approximately $50 to $100 million in additional debt that could be accommodated along with the FTTH financing without impacting bond ratings or the associated interest rates.

The managers of the FTTH business would know before issuing the debt whether the costs of that debt were prohibitively high. In that sense this risk factor is somewhat manageable.

Similarly, the costs of manufacturing and installing the control box and the FTTH network would be known before expending the capital required. These risks can be controlled through contract ceilings and other provisions to limit FTTH downside risks. Additionally, technology developments will tend to drive these costs downward, further limiting FTTH risks. However, to give an idea of the impact of these factors, if the control box cost increased by 25%, net cash in year 20 would decrease by 11%, or $6 million. If the fiber network costs increased by 25%, net cash would decrease by 24%, or $13 million.

Lastly, should customer staffing levels detailed in the base model not provide the level of service expected by end users, it may be necessary to add additional representatives. This may be necessary to ensure excellent “word of mouth” advertising, which will be essential to maximizing market share early on.
However, it should be noted that significantly increasing customer staffing levels is quite costly. For example, increasing the number of customer service representatives in the first three years from seven to ten (and then keeping staffing at that level for the remainder of the project) results in a loss in after-financing cash in year 20 of about 13%, or $7.1 million. This risk could be limited by adding staff through outsourcing arrangements as opposed to adding full-time permanent staff.

**Competitive Risks**

Competitive risks from the technology standpoint do not appear significant at this time. While the incumbent cable TV organization is adding fiber to the backbone, this build out will not extend to the so-called “last mile,” the connection from the “backbone” to the end users. This “last mile” represents approximately 85% of total network costs, and would remain a technological advantage of the FTTH system.

While implementation of wireless technology is quicker and cheaper to market, the technology does not represent a credible threat at this time because bandwidth is limited, security and interference are significant drawbacks, and environmental (visual and other) and health risks require further investigation.

Satellite Internet systems represent an alternative with major drawbacks. Upstream communications are much more limited than fiber, installation and monthly charges are considerable higher, and the service only operates on a fraction of the installed user base.

**Legal**

Important legal issues still need to be settled and are discussed in the CMR. Some of these revolve around whether a separate board must be created to oversee content offered by FTTH.

Moreover, the incumbent providers of similar services are likely to mount a vigorous public relations and legal challenge to this project which could lead to costly delays in the project. Staff recommends strongly that additional funding be included in the budget for legal costs as the existing budget is inadequate. The business case budget calls for $220,000 for legal costs, of which $160,000 is for the first six months. Additional legal budget may be needed if legal challenges occur.
While many legal risks require further consideration, it is clear that the FTTH can limit its vulnerability to legal action by 1) providing for public comment through a referendum process, 2) ensuring strict compliance with existing state and Federal law and regulations, 3) enact a charter amendment to ensure a separate board to exercise editorial control over video content, and 4) negotiate a franchise agreement with the FTTH business which is similar to the City’s agreement with the incumbent video provider.

Other Risks

An additional risk is the commitment of the citizens and governing bodies to this project for its projected duration. The project’s expected financial payoffs are long term. In the short term, there will be significant losses. For example, during the first five years of the project, total debt is expected to exceed $39 million and cumulative net income will reach -$11 million. It is expected that net income will be positive by year 11 and that debt will be repaid before year 20. In this scenario, Palo Altans will have to tolerate short-term deficit to enjoy the long-term benefits from this project.