Agenda Report

DATE: April 17, 2002

TO: CITY COUNCIL

THROUGH: ECONOMIC DEVELOPMENT & TECHNOLOGY COMMITTEE

FROM: CITY MANAGER

SUBJECT: JPL/CALTECH FIBER OPTIC NETWORK PLAN

RECOMMENDATION

It is recommended that the City Council:

1) approve the plan for creation of a JPL/Caltech fiber optic network using the City's fiber optic backbone; and

2) authorize the City Manager to enter into license agreements with JPL and Caltech for use of a portion of the City's fiber optic backbone to link the two campuses and JPL subcontractors.

BACKGROUND

In November 2001, the City Council approved a number of telecommunications-related recommendations that were identified in the Telecommunications Market Assessment. One of these recommendations was for staff to collaborate with the Jet Propulsion Laboratory (JPL) and Caltech in developing a plan for their use of the City's fiber optic backbone to create a network that will help retain and draw new hi-tech firms to Pasadena.

Since November, staff has worked with representatives from JPL and Caltech to develop a plan to meet the institutions' fiber-related requirements. JPL and Caltech have identified needs for two different uses of the City's fiber optic backbone.

JPL Links to Its Private Sector Partners

The first is a requirement for fiber optic network links from JPL to each of its private sector partners. Over the past several years, JPL has increased the amount of work that it contracts out to the private sector. JPL utilizes the services of many outside contractors for specific missions and daily administration of programs. Many local companies have business relationships with JPL, including Swales Aerospace, Ball Aerospace, Northrop Grumman, Raytheon, OAO, Alliance Spacesystems, Infotek, Samco, and UTA.

JPL requires its partners to establish very high-speed connections back to the Lab. JPL has requested two strands of fiber around the City's fiber optic ring to create high-speed connections with many of these local partners. The Lab will use advanced technologies to multiply the capacity of these two strands to meet its network needs. JPL partners will be required to connect to the Lab via the City's fiber, ensuring their location in Pasadena.

Based on the plan developed by staff and JPL representatives, JPL would make use of the City's fiber optic backbone under a license agreement with a five-year term and options for renewals.

JPL has requested that the City provide a discounted license rate for the fiber in recognition of the economic development benefits of creating this network. The plan includes a 40 percent discount on the rates the City has charged in the past for use of the fiber optic network. The proposed discounted rate for use of two strands around the City's 25-mile ring would be $60,000 annually.

This resource would encourage increased local investment by JPL's partners and also create a significant resource for other Caltech, NASA, and JPL contractors considering a move into Pasadena. Other benefits include retention of hi-tech businesses and associated jobs, creation of a public relations tool for future economic development, and, as the number of businesses grow, increased identification of Pasadena as a choice location for technology-based enterprises.

JPL would also be responsible for the cost of building extensions off the ring to enter subcontractor buildings. JPL and the City will collaborate on installing these extensions.

Fiber Optic Link between JPL & Caltech

JPL and Caltech also require a link between their two campuses for administrative purposes, and to extend a fiber network linking Southern California research and educational institutions. They have identified a need for two to four strands of fiber between the two sites. This point-to-point use of the City's fiber would take place under a license agreement between the City and Caltech.

Like JPL, Caltech has requested a discount on the fiber lease rate. The plan proposes a 40 percent discount for this connection as well. The proposed rate for use of two to four strands between the two campuses would be $23,040 or $46,080 (depending on the number of strands ultimately used). In exchange for the discount, Caltech will provide in-kind benefits in recognition of the discounted lease rate, including Internet access for the City and network consulting services. Caltech will provide a high bandwidth, redundant Internet connection for the City via the regional research network of which it is a member. The market value of the Internet connection and consulting services are estimated at $122,000. These in-kind services provide more value to the City than charging the full market rate for the fiber.

The City and Caltech will share the cost of bringing the fiber onto the Caltech campus. The fiber optic backbone was pulled into the JPL campus during its original construction. No additional interconnection is required at that site.

Fiber Optic Network Availability

The JPL and Caltech fiber requirements can be accommodated with the City's existing fiber optic ring. At the time of the Telecommunications Market Assessment, two

licenses of fiber were pending, contributing to the study's findings that the fiber capacity was very limited. One of the license agreements, with idealab!, was not executed given the company's economic situation. The need for the second license, for a fiber link between Caltech and JPL to tie into a regional research network, is incorporated in Caltech and JPL's current requests. The licensing of fiber to JPL and Caltech should not compromise the City's own use of fiber to connect municipal facilities.

FISCAL IMPACT

The recommended fiber optic license agreements will result in between $83,040 and $106,080 in revenue annually to the Telecommunications Fund (depending on the number of fiber optic strands that are ultimately used between Caltech and JPL). In addition, the Information Technology Services Division may realize a potential savings of $122,000 annually for Internet access and network consulting costs.

Respectfully submitted,

CYNTHIA J. KURTZ
City Manager

Prepared by:

Lori B. Sandoval
IT Planning & Project Manager

Approved by:

John R. Pratt
Chief Information Technology Officer

Concurred by:

Richard J. Bruckner