

**City of Culver City, California
Agenda Item Report**

Meeting Date: <u>03/10/14</u>		Item Number: <u>A-1</u>	
CITY COUNCIL AGENDA ITEM: (1) Receipt and Filing of the Preliminary Fiber Network Design and Business Plan Framework, and (2) Discussion of Fiber Feasibility Plan Executive Summary and Direction to the City Manager as Deemed Appropriate			
Contact Person/Dept.: Michele Williams		Phone Numbers: (310) 253-5950	
Fiscal Impact: Yes ☐ No ☒		General Fund: Yes ☐ No ☐	
Public Hearing: ☐		Action Item: ☒	Attachments: ☒
Commission Action Required: Yes ☐ No ☒		Date: <u>N/A</u>	
Public Notification: Meetings and Agendas – City Council (03/04/14)			
Department Approval: Michele Williams (02/27/14)		City Attorney Approval: Carol Schwab (by H. Baker) (03/03/14)	
Chief Financial Officer Approval: Jeff Muir (by M. Noller) (03/04/14)		City Manager Approval: John M. Nachbar (03/04/14)	
 <u>RECOMMENDATION:</u> Staff recommends the City Council receive and file the Preliminary Fiber Network Design and Business Plan Framework and after discussion, direct the City Manager as deemed appropriate. <u>BACKGROUND:</u> The term “broadband” is used to describe high speed and high quality Internet access which is always available. Broadband speed is measured in megabits per second (Mbps). The minimum speed for defining broadband as set by the Federal Communications Commission (FCC) in 2010 is 4 Mbps. Broadband access can be delivered via different platforms such as cable modem, digital subscriber line (DSL), and fiber optics (Fiber). Fiber is considered the fastest infrastructure for broadband access because it has the ability to transmit data across long distances at high data transfer rates. For the most part, private companies have traditionally been responsible for deploying the infrastructure required to provide Internet access to communities. However, they have not invested in the infrastructure to deliver high speed broadband (speeds greater than 100 Mbps) via a fiber network. Experts agree that these companies have not invested in the infrastructure because there is no significant profit to be gained from upgrading service for an existing customer base. Providing a faster or more reliable (or both) connection does not necessarily result in additional revenue. In an effort to satisfy this unserved need, local governments			

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across the nation are analyzing the benefit of investing in municipal broadband/fiber infrastructures.

One of the benefits of investing in a broadband infrastructure is economic development stimulus by supplying high speed Internet access to businesses who have that requirement. This typically includes businesses in the entertainment, video gaming, and social media industries. Offering high speed broadband has been viewed as a competitive edge by providing a service that is not typically available in neighboring areas. Businesses that require extensive bandwidths for conducting business are able to capitalize on the community's infrastructure investment.

On May 13, 2013, the City Council authorized contracting with CTC Technology & Energy (CTC) to assist the City with developing a Fiber Network Design and Business Plan. One of CTC's core missions is to assist agencies with analyzing feasibility and determining economic projections for deploying a fiber network. The objective of this engagement was to explore the benefits/risks and feasibility of deploying a fiber network that could be used to provide high speed Internet access to Culver City businesses. The project deliverables for this effort included:

- High Level Network Infrastructure Design
- Potential Business Model and Strategy
- Preliminary Financial Model to assist with Identifying Opportunities and Risks
- Finalized Project Report Summarizing Findings and Recommendations

DISCUSSION:

The final report resulting from the engagement with CTC is included as Attachment 1 (Preliminary Fiber Network Design and Business Plan Framework). The following outlines the project methodology and summary of the findings/recommendations.

Business Demographics

CTC met with staff from the City's Economic Development Division to analyze and understand the demographic makeup of local businesses and emerging trends. The first step toward analyzing a business model was to identify where there is a concentration of businesses that would have a need for high speed Internet access. It was clear that the focus should be directed towards businesses categorized as Creative Office and Studio/Media Production. As a result, the following five geographic areas emerged as the target service areas (Attachment 2):

- Fox Hills
- Hayden Tract
- Jefferson Corridor
- Smiley / Blackwelder
- Washington / National

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Once the five target areas were identified, additional investigation was conducted. It was noted that 80% of the buildings in these areas have multiple tenants indicating that Culver City's potential market for high speed Internet service would be comprised of mostly small to mid-size businesses.

Challenges in Obtaining High Speed Internet Service

According to a national survey, broadband access is becoming one of the most important decision factors for the selection of a commercial site after price, parking, and location. In many cases, access to high speed Internet can also dictate location. In discussions with current and potential Culver City businesses, questions related to the availability of high speed broadband routinely arise.

The City hosted a meeting with business stakeholders with the objective of identifying challenges and obstacles in obtaining high speed Internet service. The following points summarize the findings from that meeting:

- Broadband availability is not ubiquitous (not in every location and not every service is available)
- The cost of obtaining a service connection is very expensive and not suited for small to mid-size businesses.
- The time it takes to connect the service can range from 3 to 6 months depending on the construction required. There was consensus that this timeframe was unbearably too long.

An investigation was also conducted to identify what services are currently available in the target service areas. The survey revealed that there are a wide range of services available but there is an underserved market with regard to small businesses. The services were either tailored to the casual business user (cable modem/DSL) or the high-end user which commands a high monthly fee. There was no opportunity for small businesses to obtain high speed bandwidth at a mid-tier service level and lower price-point. The report recommends a business model strategy that focuses on providing services to small businesses that would service this gap in the market.

The service model includes potentially offering the following bandwidth options to businesses:

- 100 Mbps
- 250 Mbps
- 1,000 Mbps (1 gigabit per second or 1 Gbps)

The price point for each bandwidth category would have to be determined and the report details example pricing for use in generating financial projections.

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The Fiber Network

The City currently has an extensive fiber network that is dedicated to providing network computing services to all City buildings. Additionally, there is also City-owned fiber that supports Public Works Department traffic signal operations and street intersection video monitoring. The consultant worked with Public Works Engineering staff and IT staff to analyze the current infrastructure. In drafting the preliminary network design there was consideration toward leveraging the City's existing infrastructure to reduce costs.

The following summary level fiber deployments would be required:

- Redundant fiber backbone
- Fiber laterals to target service areas
- Fiber connection to carrier hotel (One Wilshire)

Implementing the proposed business plan would require deploying a redundant fiber optic backbone. In essence, this is a ring of fiber throughout the City which would serve to increase reliability. With the backbone in place, the plan would require deploying fiber laterals to each of the target service areas (Fox Hills, Hayden Tract, Jefferson Corridor, Smiley/Blackwelder, and Washington/National). Deploying the laterals to connect the target areas to the fiber optic backbone could also be implemented in phases. The high level network design details the City's existing fiber and planned fiber routes. Most of the backbone fiber will go through existing conduit and some new construction will be required.

Lastly, the City would need to connect its fiber network to a carrier hotel. A carrier hotel is simply a very large data center and is used as the connection point because Internet Service Providers (ISPs) share the facilities at the carrier hotel. The recommended carrier hotel is popularly known as One Wilshire. This carrier hotel is located in downtown Los Angeles and is known as a premier communications hub. Establishing this connection is the vehicle that will enable Culver City businesses to obtain Internet service from a variety of ISPs. The fiber connection to downtown LA will be achieved by leasing dark (currently non-operational) fiber. The report details various options for establishing this connection.

Preliminary Financial Analysis

Preliminary cost estimates reveal that the initial investment required to deploy the fiber network and execute the recommended business model is three million dollars (\$3,000,000). A conservative 10 year financial projection estimates having a cash balance of \$681,500 at year 10, but this does not include recovering the initial investment. In addition to revenue the financial projection includes the following expenses:

- Fiber maintenance
- Network operations and monitoring

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- Network hardware components and maintenance
- Hardware component replacements (5-7 years lifecycle)
- Business development, marketing, and outreach efforts
- Administration of contractual agreements (legal and consulting as required)
- Staffing allocations for project management, administration, and operations
- Operational costs related to leasing dark fiber for connection to the carrier hotel (One Wilshire)
- Internet Service Provider (ISP) Fees
- Bad Debt Allowance/Collections

This project is not envisioned to deliver immediate direct financial returns. However, the indirect benefits related to economic development, strategic advantage, and the ability to further attract and retain creative office and tech companies may prove to be the most beneficial return. Such indirect benefits are expected to provide a higher tax base and, therefore, result in higher revenues to the City via existing taxable transactions.

Interaction with the Private Sector

The City's objective in pursuing this project would be to open up the market and level the "playing field" by enabling a wide variety of ISP's to service the Culver City business community.

Today, each ISP is expected to build and maintain the infrastructure that their specific service uses. Deploying the city-owned fiber network with a connection to the carrier hotel (One Wilshire) would separate the Internet service from the infrastructure. The fiber would be recognized as another public utility.

Santa Monica's Broadband Project

The City of Santa Monica has been recognized as having successfully implemented a municipal broadband initiative. Santa Monica made a capital investment to run city-owned fiber throughout the City. This has turned into an ongoing source of revenue by leasing dark fiber and providing "lit" services to city businesses.

Plan Recommendations/Next Steps

The final report identified a detailed listing of recommendations and next steps. The following summarizes high level potential action items:

- Conduct outreach and formal focus groups with potential businesses to ascertain the level of interest in the City offering a service suited towards small business
- Survey potential businesses to identify service parameters to assist with identifying bandwidth needs, price sensitivity, and reducing timeframe for connecting the service
- Prepare detailed fiber and network design

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- Examine options for dark fiber lease to support the connection to One Wilshire

FISCAL ANALYSIS:

Discussion of this item does not create a fiscal impact to the City. However, should the City Council direct staff to move forward with any of the findings/recommendations, it is likely there would be costs involved. Estimates of all related costs would be provided in a future staff report.

ATTACHMENTS:

Attachment 1 – Final Report: Preliminary Fiber Network Design and Business Plan Framework

Attachment 2 – Maps of Proposed Target Service Areas

- a) Fox Hills
- b) Hayden Tract
- c) Jefferson Corridor
- d) Smiley / Blackwelder
- e) Washington / National

MOTION:

That the City Council

1. Receive and file the Preliminary Fiber Network Design and Business Plan Framework as provided in Attachment 1; and,
2. Discuss the summary findings and recommendations of the Preliminary Fiber Network Design and Business Plan Framework and if desired, direct the City Manager as deemed appropriate.