

MEETING DATE: 10/23/06

AGENDA ITEM: Authorization to Release an RFP Seeking Bids for Citywide
Municipal Wifi

ATTACHMENTS

	<u>Pages</u>
1. General information overview of the wireless project	1-2
2. Wireless RFP	3-12



INFORMATION TECHNOLOGY
CITY OF CULVER CITY



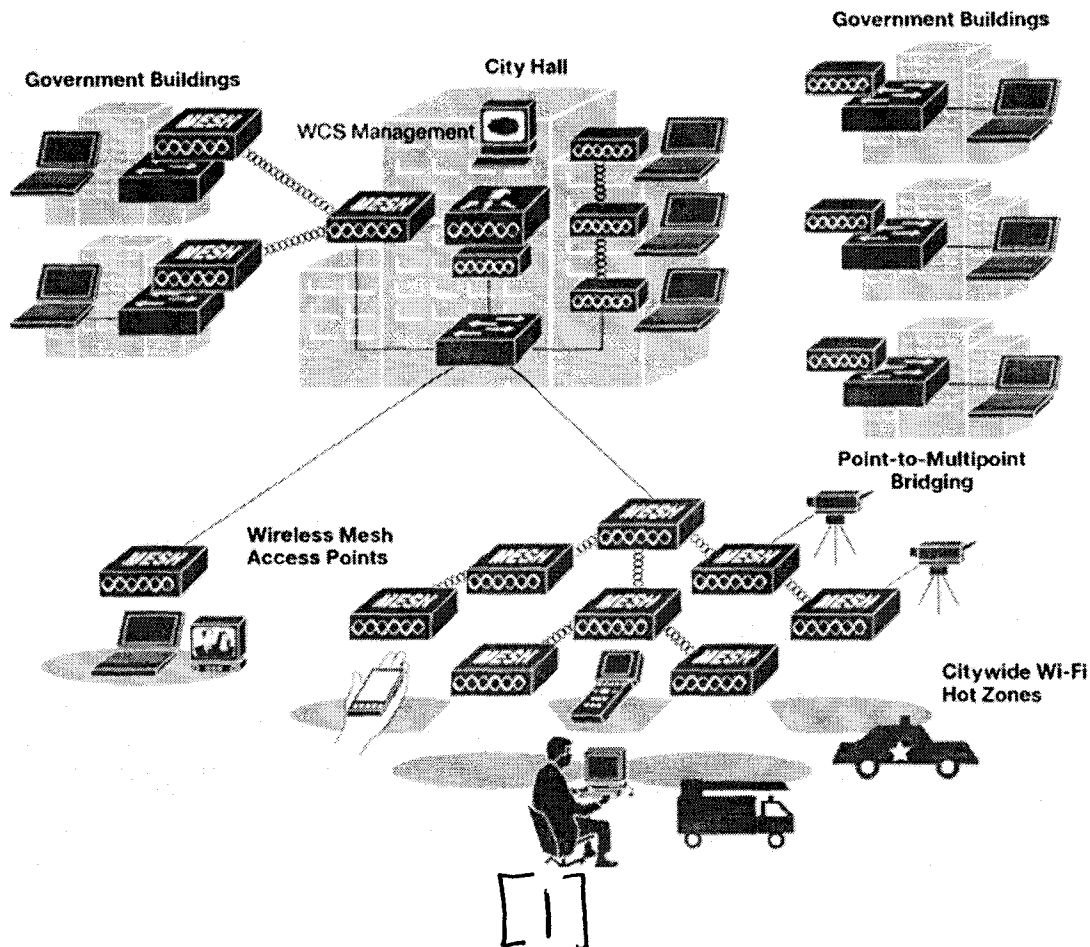
Project: Municipal Wireless "Wifi"		Start Date: Spring 2006
Division:	Technical Services	End Date: TBD
Current Status:	In progress	

Overview:

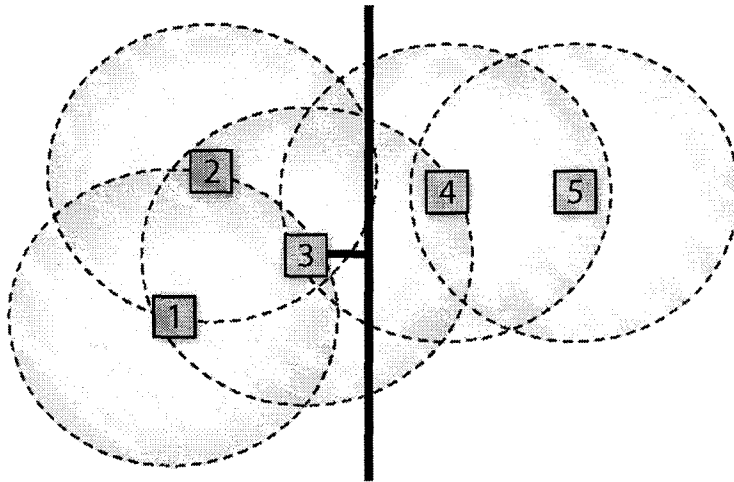
The City will solicit proposals to have a private sector company build and operate a City wide Wifi service. The service will allow Internet access by citizens, visitors, and employees anywhere within the geographical area of Culver City. The City is seeking to have free service as the base, paid tiers of service allowing for additional speed, and reserved service for use by the City government for municipal purposes. The Wifi will be owned and operated by the selected vendor who will lease space on City light poles and buildings.

What is a Municipal Wifi Mesh?

A mesh allows a person with a wireless capable device (laptop or PDA typically) to find and connect to an access point (AP) of the Mesh. These APs use sophisticated radios to send the signal to a connection with the Internet and allow the person to "surf the web" from anywhere in the community.



Mesh APs overlap each other to form connections and transmit information back and forth to the subscriber. Not every mesh point has an Internet connection. They form a “cloud” of access across the community with only a few points actually requiring access to the Internet.



In the example at left AP number 3 has access to the Internet. This would typically be at a building such as City Hall. APs 1, 2, 4, and 5 are mesh units which send information back and forth to AP 3. These would typically be light poles around the community. Notice that AP 5, by itself, is not in range of AP 1. If AP 5 was the Internet connection it would use AP 3 or 4 to forward Internet traffic to a subscriber in AP 1's area.

Culver City is 4.987 square miles in size. Mesh systems use approximately 30 APs per square mile to form the coverage. The municipal Wifi coverage is based on accessing the system out of doors. Wifi signals will penetrate buildings to some depth but building materials, distance from the AP, and angle of signal will interfere with good connections.

Connection strength (and speed of response) is based on how close you are to the mesh AP and if you are being covered by more than one AP. For example people within the triangle formed by APs 1, 2, and 3 would have strong coverage. Someone in the lower left half of AP 1 would have less connection strength the closer they got to the border. Mesh APs will allow people to move around in the community while maintaining their connections to the Internet. Each AP will “hand off” the person's session as their device moves. This is useful for vehicles which can have computers mounted in them and drive around the community.

Police and Fire mobile data applications become possible within the City. Other functions such as inspectors and route vehicles (sanitation/public works) can look forward to application access in the field. The Municipal Wifi Mesh forms the backbone that these services will ride on. Each of them must be purchased/developed and the appropriate components placed in the vehicles.

The Digital Divide and Economic Development:

The network will help bridge the digital divide between low-income residents by providing an easily accessible and free level of broadband Internet service. The network will also act as an economic development tool and community draw which encourages shoppers and business people to spend time in the community.

Present Status:

The IT Department is developing the RFP which must be approved prior to release by the City Council.

Culver City WIFI Request For Proposal

1.0 Goals and Objectives

Qualified vendors are requested to prepare and submit a response for consideration by the City of Culver City ("City", "the City") for the design, implementation, and operation of a ubiquitous citywide broadband enabled wireless network for residents, businesses, visitors, and local government services. This includes replacing and absorbing the existing free Internet access presently available to the public at specified locations. The City encourages providers that have experience in establishing user friendly, unobtrusive, and ubiquitous public Internet access with tiered levels (Free – Paid) of service to apply. The implementation of the system is to be completed within twelve (12) months from contract execution per agreed upon schedule.

The selected vendor will design, implement, operate, and maintain the equipment and systems required to deliver the wireless network. The wireless network is to be designed around current standards based technologies. The network will exist generally at three levels. Level One is a free service to the community. Level Two is a paid service with enhanced capacity. Level Three includes services reserved for use by the City for Safety Services and Non Safety City related business purposes. All three levels will be accessible City wide. Priority in day to day service and in emergencies will be given to City Services.

2.0 Project Background and Intent

2.1 City of Culver City

The City of Culver City is located on the Westside of Los Angeles near the intersection of the 10 and 405 freeways. It is a Charter City with a City Manager form of government and a 5 member elected City Council. Culver City has an estimated daytime peak population of 250,000. Culver City covers an area of 4.987 square miles. The City is home to Sony Picture Studios and has a mix of film related, light industrial, and corporate businesses in addition to being a bedroom community of West Los Angeles. The Kirk Douglas Theater and Town Plaza downtown area are the centerpieces of the City's continuing redevelopment efforts. Culver City is a full service city with Police, Fire, Public Works, and Transportation departments.

2.2 Intent and Features for Citywide Wireless Network

The proposed network should provide City residents the ability to access City Internet content, services, and third party Internet content and services while freely moving about the City. The network will help bridge the digital divide between low-income residents by providing an easily accessible and free level of Internet service.

Services to the general public will be free at a lower level of capacity and paid for higher capacity.

The citywide network should provide an isolated and secure method for Safety (Police and Fire) Services to communicate and access resources unique to their functions. Non-Safety Service applications and processes used by departments in addition to Safety

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Services should be isolated from both the general public and the channel(s) used for unique Safety Service communications. Such applications will include (but are not limited to) mobile data applications, secure communications to law enforcement, and City field agent connections to City applications.

The City has determined that the most optimal and cost efficient way to provide these types of services is to find a qualified network operator who will build and operate the network. The network operator will provide all funding, staffing, equipment, and resolve all technical difficulties for end-users and City services uses. The City would make certain assets available for mounting and implementation of the citywide wireless network.

2.3 Use of City Assets

The City will allow the selected provider to have access to City light poles and City owned and operated buildings for deployment of equipment. If additional locations are required that are not City controlled the vendor will undertake all negotiations and payments required to complete the coverage.

2.4 Monthly Fee Paid to City

The chosen vendor will pay a monthly fee to the City for use of the assets and an amount for subscriptions collected. The payment structure to the City should be proposed in the RFP, and will be negotiated during the contracting process.

2.5 Removal Escrow Account

The chosen vendor will negotiate with the City to put in place an escrow account which will be sufficient to remove the equipment and make the installed locations whole if the system is shut down and requires removal. The escrow account will remain in place for the duration of the relationship between the vendor and the City. If the vendor's business changes any successor or division will inherit this obligation.

2.6 City Safety Services, and Non Safety Service Applications.

The City expects to use the broadband wireless network for several future application deployments. Many of these applications will require dedicated and isolated bandwidth.

Currently the City does not have any safety service or mobile data solutions for its police and fire vehicles. The City would like providers with experience in providing mobile data access to highlight their experience in providing this type of secure communication. **Providers that do not have experience with these types of applications should submit proposals as well.**

The City is in the process of implementing a Computer Aided Dispatch and Automatic Vehicle Location (CAD/AVL) system from Orbital called a "Smart Bus system" for its

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transportation fleet. The proposed wireless network should be designed for easy future integration into this project if the need arises. The City would like providers with experience in providing mobile data access to transportation smart bus systems to apply. **Providers that do not have solutions with these types of applications should submit proposals as well**

2.7 Free Public Internet Access

Free coverage should include the entire City and be a component of a minimum of three levels of service. Level One is free service to the community. Level Two is a paid level of service with additional capabilities and enhanced performance. Level Three is service reserved for use by the City.

3.0 Scope of Work and Requirements

3.01 Implementation Timeframe

Implementation will be completed within one (1) year of the completion of negotiation and signing of contracts.

3.1 Services

The network provider will be required to provide Internet service to consumers and businesses through the City. The price and service mix should be comparable to other alternatives (dial up, DSL, cable modem, and cellular) currently available. The City will not control pricing or features but will give special consideration for providers that can illustrate a long term sustainable service and technological innovation strategy. Preference will also be given to providers that will provide value-added services to the City's consumer base. These services include but are not limited to email services, web hosting services and Internet security (firewall, anti-spyware, antivirus, and privacy) software tools.

Commercial retail services should include; 1.0 Mbps or greater services at competitive prices; monthly fixed rate service plans; easy portability within City limits; roaming capability within other selected provider run networks; and daily or hourly competitive rates for short term users.

3.2 Bandwidth Capacity

The selected broadband wireless network provider should deliver a system with sufficient bandwidth for all tiered (Free – Paid) levels of service.

The City requires 1 Mbps or better connection for Commercial use and 1 to 3 Mbps bandwidth for City and Safety Services use. The City will give special consideration to providers that provide service levels above the noted recommendations as well as those that can illustrate a track record of implementing high utilization high performance

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networks. The wireless broadband network must support the ability to transfer video streaming, VOIP, high speed mobile data, and large file transfers concurrently. The wireless broadband network must also be able to prioritize City and Safety Services use data streams from retail data streams.

3.25 Filtering

Vendor should provide possible solutions addressing filtering/blocking the download of copyrighted material and child pornography. This should include file transfers on Peer to Peer networks.

3.3 Security

The proposed wireless network should provide a high level of security for both consumer usage and City uses. The City will give special consideration to providers that have taken a multi-level approach to provide all classes of customers a safe and reliable network.

The system should provide consumer and free access users with authentication, validation, authorization, and packet inspection services. It must have the ability to mitigate the risk for these wireless users by providing user isolation and traffic origination analysis. The provider must also support the ability to isolate traffic that illustrates malicious activity such as the spreading of viruses, worms and hacking attempts. The system should provide methods for wireless data transfer encryption such as the use of WEP, WPA, WPA2, Virtual Private Network (VPN) tunneling and/or Advanced Encryption Standard (AES) encryption.

For City application and public safety needs, the system must provide multi-level protection mechanisms including support for 802.1x authentication using Extensible Authentication Protocol (EAP); packet inspection services; support for VPN tunneling; support for wireless encryption using WPA, WPA2 and AES; support the ability to isolate traffic that illustrates malicious activity such as the spreading of viruses, worms and hacking attempts; and the support for filtering of traffic based on Media Access Control (MAC) address, Internet Protocol (IP) address, subnets, and Transmission Control Protocol (TCP) ports.

The City is interested in a network that supports multiple ESSIDs mapped to individual VLANs in order to provide access for multiple departmental needs. The City has 13 departments including Police, Fire, Public Works, City Attorney (Code Enforcement), and Community Development (Housing, Building & Safety, Engineering, and Planning). Field/mobile applications for all of the noted departments are under consideration.

3.4 Mesh Density

The proposed wireless network should provide a density of nodes per square mile sufficient to:

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- Cover the area with a robust mesh
- Have sufficient density to heal the mesh to cover expected levels of failure during normal service.
- Handle “hotspot” concentration areas of activity
- Be capable of determining where high usage patterns are developing so the vendor can enhance services as necessary.

Ideally the proposed network should deliver 100% in-street (outdoor) coverage in densely populated areas with no additional hardware. **Coverage will be a key and critical selection criterion.** The network should be accessible with readily available and standard¹ 802.11b/g equipment. Client access should be minimized to no more than approximately 600ft from any node.

3.5 Coverage – Critical Boundaries

Culver City is not defined by zip codes. Coverage must include 100% of the Culver City Tax Rate Area defined by the County Assessor. Some parcels have Los Angeles zip codes but are geographically within Culver City. Also some parcels have Culver City zip codes but are part of the City of Los Angeles. The County Assessor Tax Rate Area parcel addresses should be considered the authority in determining 100% coverage for Culver City. A reference map of City boundaries is attached at the end of the RFP.

3.55 Installation Issues – Height and Power on Light Poles

Typical light poles are 30-35 feet from base to the spot where the light attaches.

Vendor will need to examine and research options to ensure that necessary power is available where needed. If solar is chosen the panel location and arrangement will have to be approved by the City.

Several types of light poles exist in Culver City. 120/240V poles are flat rated by Southern California Edison. Vendor and the City may have to coordinate negotiations with SCE to support the additional power draw. Non-flat rated poles are on high voltage connections.

Any wiring required to connect the equipment must be run internally within the structure of the pole and must be of quality all-weather workmanship. The City will inspect all additions and changes to poles and buildings.

3.6 Reliability and Support

The City is interested in a high reliability network with a 99.5-99.9% uptime rate of availability throughout the coverage area. Support for customers should be provided by the selected provider and should be available on a 24/7 basis.

¹ Standard is defined as 802.11b/g cards that come with wireless enabled laptops or other wireless enabled devices. This does not include high-powered wireless (transmit power 15dBm or higher), MIMO, or 802.11n equipment. This does not include equipment with high powered antennas (5dBi or higher).

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Vendor will support the implementation directly unless third party support is specified in the proposal. If the vendor will not be directly supporting and maintaining the system and customer problem calls detailed information on who will be the agent must be attached and clearly identified.

Vendor may not contract out support or maintenance to third parties during the life of the system without prior notification and concurrence of the City.

3.7 Shutdown and Removal of Vendor's Equipment

If the vendor's system is shutdown the vendor is responsible to remove all equipment and make whole any damage to light poles or facilities. The City will require an escrow account arrangement to be put in place to ensure that the system is removed at no cost to the City.

3.8 Updates of Equipment and Technology

The chosen vendor's system will be maintained to current industry security, software, and hardware updates and patches. Annually the vendor will submit a report to the City of Culver City Information Technology Director which details the vendor's update and migration plan to keep the WIFI network compatible with current technology in general use by the public.

3.9 Traffic and Usage Analysis

Quarterly the chosen vendor will submit a report to the City of Culver City Information Technology Director detailing the state of the system including overall uptime, number of free and paid users, load, and other general analysis information so the City can chart growth and service issues and report to City Council.

4.0 Bidder's Conference

A bidder's conference will be held on Wednesday, November 29, 2006 at 10 AM. The conference will be held at Culver City's City Hall. The facility is located at 9770 Culver Blvd. Culver City, CA and is at the corner of Culver Blvd. and Duquesne Ave. Parking is free underneath the building. The entrance is off Duquesne Ave. Representation at the bidding conference is strongly encouraged. RSVP's may be e-mailed to it.department@culvercity.org. Please include in the Subject "Wifi RSVP". The department main line phone number is (310) 253-5950 for phone RSVP requests.

5.0 Vendor Response Information

Copy in Electronic Format

Culver City WIFI Request For Proposal

The vendor should respond with a proposal covering the system described. The response should include an electronic version of the RFP response in Word for Windows 2003 format on a CD-ROM or DVD-ROM.

Vendor Response Table Questions

Contained in the vendor's proposal should be the following table of responses. Where additional detail is requested please attach sheets as needed referencing the question to make a complete response:

Section A - WIFI Deployments

Yes	No	Partial	Question or Criteria
			Do you currently have a Municipal WIFI program in place? If yes please attach information on the project and contact information for references
			Do you have a Municipal WIFI program presently being installed? If yes please attach information on the project and contact information for references
			Do you have a non-Municipal WIFI program in place? If yes please attach information on the project and contact information for references
			Do you have a non-Municipal WIFI program presently being installed? If yes please attach information on the project and contact information for references

For deployments in progress or complete please fill in the following table. % Coverage is the percent of the total area within the geographical boundaries of the project area or community.

% Current Coverage	Municipality/Area	Finished % Coverage	Completion Date

Section B - Municipal WIFI Deployments (If you have no Municipal programs skip to next section)

Yes	No	Partial	Question or Criteria
			Does your deployment have separate network access for City use versus the general public? If yes attach a separate summary of the configuration.
			Does your deployment allow for priority access to be given to the City's communications?

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			Has your deployment met the uptime and resiliency requirements of the organization? If no, describe the issues and how you resolved (are resolving) them. List the name and contact information for the agency.
			Is the deployment you did in the past substantially the same as the proposed Culver City solution? If no, please detail significant changes in technology or approach.

Section C - Tier Plans

Yes	No	Partial	Question or Criteria
			The proposed plan has free access City wide?
			The proposed plan has one or more paid tiers for individuals and businesses with enhanced capabilities?
			Your proposed plan has channel(s) reserved for City use.

Number of channels available to the City: _____

Speed of connection available free: _____

Speed of connection available paid: _____

Speed of connection available to City: _____

Section D - Site Filtering

Yes	No	Partial	Question or Criteria
			Does your proposed implementation allow for levels of site filtering? For example denying access to classes of sites to City employees but leaving open access to all sites for a designated Police channel.
			Does your proposed solution include a filtering / blocking solution for copyrighted material and child pornography?

Section E - Maintenance and Support

Yes	No	Partial	Question or Criteria
			The proposing vendor covers all maintenance of the system.
			The proposing vendor will provide an 800, 310, or 424 number staffed to support the free service customers? If no, detail how telephone support will be done.
			The proposing vendor will provide an 800, 310, or 424

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			number staffed to support the City and pay tier customers? If no, detail how telephone support will be done.
			Vendor will provide a web chat contact capability for users to troubleshoot or ask questions.
			Vendor will provide an e-mail contact address to allow submission of questions and issues.
			Vendor will have support available 24 hours/7 days?
			The proposing vendor will provide the support directly (i.e. Support will not be sub-contracted to third parties)

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THE CITY OF CULVER CITY

INFORMATION TECHNOLOGY DEPARTMENT

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CITYWIDE WI-FI RFP MAP

SCALE 1:31,000

OCTOBER 5, 2006

LEGEND

Los Angeles Zip Codes

	90016		90066
	90034		90291
	90045		90292

Culver City Zip Codes

90230 & 90232

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