



The City and County of San Francisco

REQUEST FOR INFORMATION AND COMMENT (RFI/C)

San Francisco TechConnect Community Wireless Broadband Initiative

Released: 16 August 2005
Responses due: 30 September 2005
(Revised 14 September 2005)

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Cover page, page 4 and page 7 revised on 14 September 2005.

1. INTRODUCTION

The City and County of San Francisco, California (“City”) is requesting expressions of interest, information and comments (“RFI/C”) from commercial vendors, service providers, non-profit organizations, community groups and/or other interested parties (“Respondents”) for the deployment of a wireless broadband network (“Network”) throughout the City. The City welcomes information and comment from both interested parties as well as organizations with a commercial interest in the project.

2. PROJECT BACKGROUND

Universal, affordable wireless broadband internet access is essential to connect all residents of San Francisco to the social, educational, informational and economic opportunities they deserve. In addition to numerous direct benefits for residents, universal, affordable wireless broadband is critical to connect the City of San Francisco to the increasingly regional, national and global economy of the 21st Century.

During the last four years, the U.S. has fallen from third to sixteenth in the world in broadband penetration, and highly-skilled jobs have been exported to countries that have exploited advances in technology and telecommunications.¹ Meanwhile, at home, telecommunications companies, cable providers and media conglomerates have consolidated further. These trends, if allowed to continue, will inevitably lead to higher prices, less competition, higher unemployment, loss of competitiveness and less consumer choice for our residents.

As the United States lags behind other nations in equipping its residents to compete in the global economy, San Francisco is stepping forward to bring universal, affordable wireless broadband internet access to all its residents and businesses to boost our economic, social and educational opportunities.

With the guidance of the Department of Telecommunications and Information Services (“DTIS”) and the San Francisco Public Utilities Commission (“SFPUC”), the City is exploring various options for the deployment of a community-wide wireless broadband network. These options include, but are not limited to:

- Providing the Network as a city service
- Providing the Network as a new utility through the SFPUC
- Engaging in a public-private partnership
- Supporting another alternative that ensures universal, affordable wireless broadband internet access for all San Franciscans

3.

¹ Source: http://www.freepress.net/docs/broadband_report.pdf

GOALS

The City has identified the following critical goals for this initiative:

- Ensure universal, affordable wireless broadband access for all San Franciscans, especially low-income and disadvantaged residents
- Ensure in-home access to the greatest extent possible for all residential subscribers
- Improve the efficiency of government service delivery
- Promote job creation, business growth and economic development
- Streamline the interaction between government and constituents
- Enhance education and improve the interaction between teachers, students and parents
- Stimulate private investment and competition for all broadband services
- Assure continuity in the event of any vendor default or breach of contract and protect the Network from obsolescence over time
- Complement the City's strategy to connect all San Franciscans to the modern economy.

In addition, the City anticipates that this initiative will provide the following benefits:

- Improve public safety through better communications and interoperability
- Enhance healthcare through telemedicine and remote patient care
- Improve the experience for visitors to the City
- Reduce existing or avoid future government telecommunications costs
- Promote the City's brand/image
- Provide backup/contingency measures for disaster response/recovery
- Promote more innovative solutions for consumers

The City invites information and comments regarding these goals and objectives.

4. POLICY STANDARDS

The City has defined the following policy standards for this initiative.

- The Network must provide universal service for both indoor and outdoor usage. Providing access in only parts of the City that may be more densely populated or commercially attractive is not an option.

- Fees for access to the Network must be priced lower than existing alternatives and must be affordable for low-income and disadvantaged residents and businesses
- The Network must support fixed, nomadic and portable usage scenarios
 - The term *fixed* refers to a service that supports broadband connectivity by a stationary subscriber at a single, designated location
 - The term *nomadic* refers to a service that supports broadband connectivity by a stationary subscriber at a variety of locations
 - The term *portable* refers to a service that supports broadband connectivity by an in-motion subscriber at a variety of locations throughout the City
- The Network must support use by residents, businesses, institutions and government agencies. Examples of usage scenarios for these groups may include:
 - Residents using the Network for universal, affordable wireless access to applications such as E-mail, web browsing, instant messaging, entertainment and voice services
 - Businesses using the Network for remote office connectivity, supply chain integration, customer relationship management and inventory control
 - Institutions such as universities and nonprofits using the Network for increased interaction between their institution and students/constituents
 - Government agencies using the Network for automatic vehicle location, access by field staff, remote meter reading and remote camera/video surveillance
 - Visitors using the network for remote access applications and local information.
- Wi-Fi technology (802.11b/g) must be a component of the solution. This is due to its ubiquity in user devices, standardization, low cost and ease of provisioning
- The City expects “open access” principles to be adhered to (e.g., multiple, competing commercial and institutional service providers not affiliated with the Network owner can gain access to—and provide services using—a single, common infrastructure)
- The City anticipates the deployment of a “state of the art” Network that is simple to maintain and inexpensive to upgrade. A plan for protecting the Network from the effects of obsolescence is required
- The City anticipates a Network that protects the privacy of users, respects consumer choice, and fosters diversity of information and ideas

The City invites information and comments regarding these policy statements.

5.

RFI/C SCHEDULE (Revised 14 August 2005)

The schedule for this RFI/C process is provided below. Responses must be submitted to the address of the Primary Contact, as provided in Section 6, by the time on the Submission Date indicated below.

<u>Date</u>	<u>Activity</u>
16 August 2005	City issues RFI/C
31 August 2005 9:30 a.m.	Pre-RFI/C Meeting Koret Auditorium San Francisco Main Library 100 Larkin St.
7 September 2005 5:00 p.m.	Respondent questions due
16 September 2005 5:00 p.m.	City issues answers to questions
30 September 2005 5:00 p.m.	Deadline for submission of responses

Attendance at the Pre-RFI/C meeting is encouraged, but not mandatory.

All questions, requests for clarification, and requests for additional information regarding this RFI/C must be submitted to the City's Primary Contact not later than the Respondent Questions Due Date above. All such questions and requests must be submitted by e-mail. Responses to such questions and requests shall be at the City's sole discretion and nothing in this RFI/C shall create an obligation by the City to respond to the submitting party at all. Responses may, in the City's sole discretion, be by published addenda, posted on the City's website.

The dates provided in the schedule are estimates only and the City reserves the right, in its sole discretion, to alter this schedule, as it deems necessary or appropriate. Notice of changes to the Pre-RFI/C Meeting date/time or location, the due date/time for Respondent submission of questions, and the date/time for Submission Date will be posted on the City's website at www.sfgov.org/techconnect. The other dates/times listed may be changed without notice to prospective Respondents.

Responses must be received by 5:00 p.m. on 30 September, 2005. Responses may be delivered in person and left at the DTIS Reception at 875 Stevenson St., 5th Floor, or mailed to the Primary Contact below.

6. PRIMARY CONTACT

The name, address, and contact information for the City's Primary Contact for this RFI/C are as follows:

TechConnect RFI/C 2005-07
Dept. of Telecommunications and Information Services
City and County of San Francisco
875 Stevenson St., 5th Floor
San Francisco, CA 94103
techconnect@sfgov.org
415-554-5008

No oral response by any employee, consultant or agent of the City shall be binding on the City, or shall in any way constitute a commitment by the City. If a Respondent finds any inconsistency or ambiguity in the RFI/C, the Respondent is requested to notify the City.

7. SPECIAL PROVISIONS

The information and comments provided by Respondents will be used to determine what further steps the City will take in connection with the deployment of a wireless broadband network. Those steps could include, but are not necessarily limited to, issuance of a Request for Qualifications or a Request for Proposals, or discussions or negotiations with one or more prospective vendors or service providers that could lead to one or more contracts related to deployment of a Network. The submittal of a response to this RFI/C does not guarantee use of the information provided.

8. PUBLIC RECORDS ACT/SUNSHINE ORDINANCE

Responses to this RFI/C become the exclusive property of the City and subject to the California Public Records Act and the City's Sunshine Ordinance. Those elements in each submittal which are trade secrets as that term is defined in Civil Code section 3426.1(d) or otherwise exempt by law from disclosure and which are prominently marked as "TRADE SECRET," "CONFIDENTIAL," OR "PROPRIETARY" may be exempt from disclosure. The City shall not in any way be liable or responsible for the disclosure of any such records including, without limitation, those so marked if disclosure is deemed to be required by law or by an order of the Court. Respondents who indiscriminately identify all or most of their submittal as exempt from disclosure without justification may be deemed non-responsive.

In the event the City is required to defend an action on a Public Records Act or Sunshine Ordinance request for any of the contents of a submittal marked "confidential," "proprietary," or "trade secret," respondent agrees, upon submission of its submittal for the City's consideration, to defend and indemnify the City from all costs and expenses, including attorneys' fees, in any action or liability arising under the Public Records Act.

9. RESPONSIBILITY FOR SUBMISSION COSTS

The Respondent shall be solely and fully responsible for all costs associated with the development, preparation, transmittal, and submission of any material in response to this RFI/C. The City may, in its sole discretion, ask selected Respondents to present their material in person to City's representatives at the City's offices, and the costs of such presentations shall be solely the responsibility of the Respondent. The City assumes no contractual or other obligations as a result of the issuance of this RFI/C, the preparation or submission of materials by a Respondent, the evaluation of materials, the Respondent's conducting of presentations, or the selection of any Respondent for further negotiations. There may be no claims whatsoever for reimbursement from the City or any of its consultants or agents for such costs.

10. DEFINITION OF BASIC REQUIREMENTS

Through this RFI/C, the City has elected to define basic assumptions and requirements for the Network, while encouraging maximum flexibility and creativity by Respondents. Therefore, the requirements below are defined at a summary level, and Respondents are encouraged to propose (and elaborate on) a solution that best meets the City's stated goals and adheres to the City's stated policy. The City's basic requirements are:

- Wireless access throughout the City from desktop PCs, laptops, handheld devices, mobile phones and other manned or unmanned devices equipped with a minimum of an IEEE 802.11b/g ("Wi-Fi") interface.
- Support throughout the City for "best-effort" service over the Wi-Fi network, with an average minimum throughput of 1Mbps (symmetric). (*Rev. 14 August 05*)
- 95% in-street (outdoor) coverage for the devices referenced above with no additional hardware required beyond the device's standard wireless interface.
- 90% in-building (indoor) coverage for residences and businesses throughout the City. A residence or business is assumed covered under this requirement if a single, first or second-floor room—which is adjacent to an exterior wall in the residence or business—can access the Network at the stated best-effort service levels. Should additional customer premise equipment ("CPEs") be required or assumed in order to deliver this in-building coverage, Respondents are expected to state this in their response and elaborate on this requirement and their assumptions. Respondents should also describe how this coverage can be expanded within the residence or business through a wireless bridge or other mechanism. The City's ultimate goal is 100% in-building coverage; Respondents should describe impediments to in-building coverage beyond the 90% level and describe how these impediments will be addressed.
- Coverage in rooms above a second-floor residence or business. The City understands that creative approaches using Wi-Fi or other technology may be needed to meet this requirement, particularly in multi-dwelling-units (MDUs). Respondents should elaborate on how they propose to address this requirement.
- Support for the following types of services:

Service Types	Definition	Examples
Residential Fixed/Nomadic/Portable	Access for a single device, provisioned for primary use at a residence, with access throughout the City.	Residential user with single desktop or single laptop, with support for use throughout the City
Government Nomadic/Portable	Access by City agency users from mobile computing devices.	Inspectors, public safety officers, meter readers, surveyors, etc.
Government Fixed	Fixed access for City agency locations.	T-1 like service alternative.
Standard Business Fixed	Access for multiple devices, provisioned for primary use at a business location.	Businesses with less than 20 employees.
Premium Business Fixed	Same as Standard Business service plus higher speeds and guaranteed service levels.	Businesses with more than 20 employees.
Occasional Use Nomadic	Basic internet access for a daily or weekly fee.	Tourists, business travelers.

- Support for a mixed wireless and wired backhaul solution to aggregate Wi-Fi network traffic back to an Internet point of presence (“POP”). The City anticipates that the majority of these backhaul requirements could be met using a fixed, multipoint wireless solution; however, Respondents may suggest the most appropriate, reliable and cost-effective solution (wired or wireless) for their specific response.
- Support for the logical segmentation of the Network to support different “domains” of users (e.g., secure access by government agency personnel, secure and/or open access for public users, residential users, business users, etc.). This must include the ability to define and manage different profiles for authentication, encryption and other service characteristics based on the requirements of each user domain.
- Support for state-of-the-art, multi-layer security standards.
- The option for the City to designate certain parks, common areas and other residential and business zones within the City to allow any user with a Wi-Fi device to gain free and open access to the Network while in these areas.
- Support for seamless connectivity by in-motion Wi-Fi subscribers/devices throughout the City.

- Scalable to support additional users, capacity, and functions throughout the life of the Network.
- Fault tolerance mechanisms to mitigate and/or eliminate single points of failure and ensure high reliability.
- Support within any proposed fixed wireless backhaul solution to also provide advanced subscriber services beyond the level(s) of service available through the Wi-Fi tier of the Network.
- Localized content publishing and management
- Optional content filtering and parental control
- Optional virus, spam, popup and other protective services
- The following service and solution components :
 - Architecture and Design Services
 - Installation Services
 - Telecommunications Provisioning and Services
 - Network Monitoring and Management Services
 - Network Maintenance and Upgrade Services
 - Business and Operations Support Systems (BSS/OSS) Services
 - Customer Service and Technical Support Services
 - Software Hosting and Facilities Services
 - Program and Project Management Services

The City invites information and comments regarding these basic requirements.

11.

RFI/C RESPONSE FORMAT

Respondents who have no commercial interest in the project and/or desire to provide only comments on the RFI/C and/or the initiative, are requested to provide the following:

- A document summarizing the Respondent's overall response and comments to the RFI/C, including the City's stated Goals, Policy Standards, Schedule and/or Basic Requirements.
- A document answering—or commenting on—any/all questions outlined in Section 12 of this RFI/C, as deemed appropriate by the Respondent.
- Any addenda the Respondent deems appropriate and/or useful to the City.

Respondents who have a commercial interest in the project (e.g. vendors, service providers) are requested to provide the following:

- One signed original and fifteen (15) copies of a transmittal letter, on the Respondent's letterhead.
- One original and fifteen (15) copies of an Executive Summary of the solution/approach proposed by the Respondent.
- One original and fifteen (15) copies of a document describing the Respondent's experience, which must be labeled on the cover with "Community Wireless Broadband Network, Volume 1: Company Experience." The required contents of Volume 1 are:
 - Name, street address, mailing address if different, email address, and telephone and facsimile numbers of the Respondent.
 - Year established. Identify the country and state in which the firm was incorporated or otherwise organized.
 - A narrative description and organization chart depicting the management of the Respondent's organization and its relationship to any larger business entity.
 - A description of the overall operations of the Respondent, the number and scope of other similar projects currently ongoing or set to begin in the near future.
 - A narrative description of Respondent's familiarity with and prior operating experience in the San Francisco region that might be relevant to a community wireless broadband network.
 - Provide, at Respondent's option, any additional information not specifically listed above which shows any experience of the Respondent that might be relevant to a community wireless broadband network.

- One original and Fifteen (15) copies of a document describing the type of solution proposed to meet the goals defined in this RFI/C, which must be labeled on the cover with "Community Wireless Broadband Network, Volume 2: Solution Overview." The required contents of Volume 2 are:
 - A description of the business model and any basic terms proposed by Respondent.
 - A summary-level description of the proposed solution, along with any diagrams and technology assumptions.
 - A summary-level description of the architecture for the proposed solution, including any justification for the architecture selected.
 - Information correlating each component of the proposed solution to the Basic Requirements defined in Section 10 of this RFI/C.
- One original and fifteen copies of a document answering the questions outlined in Section 12 of this RFI/C, which must be labeled on the cover with "Community Wireless Broadband Network, Volume 3 – Answers to RFI/C Questions."
- An electronic copy of all submitted materials, on a CD ROM disk, in Microsoft Word, read-only format.

All responses must be submitted on recycled paper and printed on double-sided pages to the maximum extent possible.

12.

QUESTIONS TO RESPONDENTS

The City expects Respondents to provide answers to the following questions. Respondents are encouraged to elaborate as much as possible and address any relevant issues that are not expressly stated below.

Business Model and Policy Questions

1. The City is committed to the goal of ensuring universal, affordable wireless broadband access for all residents. How can the City best accomplish this goal?
2. How does your proposed solution/approach specifically address the City's stated Goals and Policy Standards defined above?
3. Given the goals of the City, what business model do you believe best accomplishes this, while best protecting the City's financial interests?
4. Please describe key business terms that might be required to support your proposed solution/approach (e.g., compensation for the use of City assets, revenue sharing, etc.)
5. To make your proposed solution/approach viable, what commitment periods would be necessary?
6. The City seeks to complement universal, affordable wireless broadband access with other social programs to facilitate affordable PCs in the home, training, technical support and on-line content for low-income and disadvantaged residents. How does your proposed solution/approach support these broader goals?
7. The City seeks to leverage the Network to streamline the interaction between government and residents and to better connect the community. What ideas do you have to accomplish this goal?
8. What privacy policies and security standards will you put in place to protect the privacy of—and information transmitted by—users?
9. What opportunities exist for disadvantaged business enterprises (see San Francisco Administrative Code, Chapter 14A) to participate in your proposed solution/approach?
10. What terms do you propose to ensure continuity of the Network in the event of a default and/or material breach of contract by one of the participants?

Technical Requirements Questions

11. Describe the architecture proposed by your organization to meet the Basic Requirements defined in Section 10 above.

12. Provide a summary of your proposed solution/approach for the following solution elements:
 - Architecture and Design Services
 - Installation Services
 - Telecommunications Provisioning and Services
 - Network Monitoring and Management Services
 - Network Maintenance and Upgrade Services
 - Business and Operations Support Systems (BSS/OSS) Services
 - Customer Service and Technical Support Services
 - Software Hosting and Facilities Services
 - Program and Project Management Services
13. What solution/approach can be used to ensure interior-room access for residences, multi-dwelling units (MDUs), apartments and/or businesses?
14. How does your solution/approach specifically address the need for indoor coverage above the second floor of residential, business and government locations?
15. How does your solution/approach mitigate or eliminate the risk of unintentional self-interference with—and promote cooperation between—other commercial Wireless ISPs, community wireless groups or other services using unlicensed spectrum?
16. How does your solution/approach address the need to provide different levels and qualities of service, security and other characteristics for multiple “domains” of users over a single physical network (e.g., municipal employees, public safety, public access, etc.)?
17. The City anticipates leveraging the Network for existing and new internal city needs, including automatic vehicle location, access by field staff, remote meter reading, remote camera and video surveillance. How would your proposed solution/approach enhance the capabilities of the City?
18. Describe the multi-layered security capabilities of your proposed solution/approach and how it might address the need for advanced levels of authentication and encryption required for residents, businesses, institutions and government agencies.
19. Describe the way in which prioritization of traffic for municipal use (e.g., public safety) is accomplished with your solution, especially in the event of an emergency.