

**Request for Information
Services, Operations and Maintenance
for County-Built Broadband Network
RFI #13-1101B**



**Due Date: November 1, 2013
2:00 P.M. (Local Time)**

**GARRETT COUNTY
PURCHASING DEPARTMENT**

203 South Fourth Street, Room 208
Oakland, Maryland 21550

(301) 334-5003
Fax- (301) 334-1985
E-Mail purchasing@garrettcountry.org



Brian E. Bowers, CPPB
Purchasing Agent

Charles W. Junkins
Buyer

Susan M. Wolf
Administrative Assistant II

**REQUEST FOR INFORMATION
SERVICES, OPERATIONS and MAINTENANCE for
COUNTY BUILT BROADBAND NETWORK**

The Board of County Commissioners of Garrett County, Maryland will accept sealed RFI's to enable the County to identify one or more private partners interested in providing network services to residences and businesses within specific underserved areas identified in Garrett County, using State and County-provided fiber and wireless infrastructure. The County seeks input from potential partners regarding the terms and conditions under which partners would operate and manage Internet and other network services as specified.

RFI documents and specifications may be obtained in person from the Garrett County Purchasing Department, 203 South Fourth Street, Room 208, Oakland, Maryland 21550. A copy of the RFI documents can also be downloaded from the Purchasing Department's web site at <http://www.garrettcountry.org/purchasing/current-bids> Inquiries may be made by calling (301) 334-5003.

All interested respondents must submit a Letter of Intent to the Garrett County Purchasing Department on or before Friday, October 18, 2013 at 2:00 P.M. (local time). Sealed RFI's must be submitted to the Garrett County Purchasing Department, 203 South Fourth Street, Room 208, Oakland, Maryland 21550 on or before Friday, November 1, 2013 at 2:00 P.M. (local time). All respondents are required to submit five (5) copies and an electronic copy or link of their RFI's documents at the time of submission. All RFI's submitted should be enclosed in a sealed envelope and clearly marked "Broadband Network RFI" on the outside of the envelope. Any RFI's received after the time due will not be considered and shall be retained as documentation for the RFI file.

The Board of County Commissioners of Garrett County, Maryland reserves the right to accept or reject any or all RFI's, to cancel this request for information and to waive technicalities in any part thereof deemed to be in the best interest of Garrett County.

By Order of the Board

A handwritten signature in black ink that reads "Brian E. Bowers".

Brian E. Bowers, CPPB
Purchasing Agent
Garrett County Purchasing Department

Table of Contents

I.	Introduction	1 – 2
II.	Project Background	2 – 3
III.	Background on Garrett County	3 – 5
IV.	Policy Goals	5
	Statement of Need	5 – 6
	Goals	6 – 7
V.	Existing Broadband Assets	7
VI.	Role MdBC and OMBN Fiber	7 – 8
VII.	Target Network Coverage Areas	8 – 9
VIII.	Information Required to Respond to this RFI and Response Procedure	10 – 11
	Signature Sheet	12

I. Introduction

Garrett County, Maryland is seeking a private partner to participate in construction, operations, and support for a network that it is funding to provide broadband service to underserved residents and businesses.

The County is using publicly-provided fiber backhaul. It plans to fund wireless infrastructure, along with some of the customer installations, central management and billing systems, and other operational infrastructure. It plans to provide facilities for mounting wireless infrastructure and hosting equipment.

Garrett County is a rural community in Western Maryland with no major cities. The County faces many of the same Internet access challenges as other rural parts of the country. These challenges are significant and of enormous importance to the County's economic future.

Garrett County does have some considerable broadband resources at its disposal, however. A number of competitive providers offer fiber-to-the-premises and cable modem service in the more populated areas of the County. Additionally, the One Maryland Broadband Network (OMBN), the state's federally funded middle-mile build-out, includes about 50 miles of fiber construction throughout the County connecting 49 Community Anchor Institutions (CAI) to the statewide fiber backbone. The OMBN build expands upon existing fiber owned by Level 3 Communications, Inc., available to providers through the Maryland Broadband Cooperative (MdBC), that runs through the northern part of the County along I-68. The MdBC operates two points of presence (POP) in the County.

County officials have prioritized pursuing access to affordable broadband networks on behalf of underserved and unserved residents, who do not have access to the fiber-to-the-premises and cable modem service.

This Request for Information (RFI) has been initiated to enable the County to identify one or more private partners interested in *providing network services to residences and businesses within specific underserved areas identified in Garrett County, using State and County-provided fiber and wireless infrastructure*. The County seeks input from potential partners regarding the terms and conditions under which partners would operate and manage Internet and other network services.

We seek recommendations of any suitable network technology that can reach the unserved areas in the mountainous, sparsely populated reaches of the County. We are of the opinion that TV White Space (TVWS) technology offers a promising last-mile option for our County. However, we will consider all reasonable responses to this RFI regardless of the suggested technology.

We also seek partners who will take on network maintenance responsibilities. This role may either be done by the network service provider or by a separate partner.

We seek to make Garrett County a more desirable place for businesses and residents—who see the quality of life benefits of broadband both directly through home connections and through enhanced services provided by the business community.

The County plans to pay for wireless last-mile network technology—both the base station(s) and user electronics—and provide it for use by the private partner or partners. We foresee a relationship in which the County assumes financial risk on the capital investment side. We seek to lower the barriers of market entry and development for private network operators, who will assume risk on the operating side, with the benefit of our capital investment. The County, through the MdBC and the State of Maryland, can offer interested providers interconnection with the statewide network, access to POPs and government facilities in Garrett County, and the ability to purchase cost-effective backhaul via the MdBC.

II. Project Background

In 2012, Garrett County, in partnership with the Appalachian Regional Commission (ARC), commissioned a study of the existing broadband landscape. The study found that Garrett County is well served relative to comparable rural communities around the country, but nevertheless faces many challenges common to such communities—large unserved remote areas; relatively little competition in population centers; and high pricing that prevents consumers from fully benefiting from the networks where they do exist.

The report that resulted from the study issued several recommendations to County officials to reach their broadband goals. One recommendation was to build a network to create last-mile connectivity between existing fiber backbone and residential and business end-users in underserved and unserved parts of the County. This RFI is meant to gauge interest among potential partners in helping the County pursue this goal.

The report specifically recommended that the County build a last-mile wireless network using TVWS technology. Garrett County is far enough from major urban centers that a considerable amount of vacant broadcast spectrum is available for broadband use. TVWS uses spectrum that does not require line-of-sight, and it can cover relatively long distances. It can also deliver connectivity at a level higher than many available wireless services; users would get typical download speeds of 3 Mbps and typical upload speeds of 1 Mbps. TVWS has excellent propagation characteristics—including indoors. It is able to penetrate physical obstructions that cannot be penetrated by the spectrum used for traditional WiFi—from exterior building walls to broad-leaf trees and, in a limited way, larger physical obstructions such as hills. Finally, TVWS base station equipment is inexpensive relative to 3G, WiMAX and LTE technologies typically used in licensed spectrum. TVWS user equipment is still costly relative to other options, but can be expected to fall in cost as it is more widely adopted.

In 2012, ARC awarded Garrett County a grant of \$250,000, matched by the County, for the first phase of its broadband infrastructure expansion. This funding enables the construction of middle-mile fiber to connect additional CAIs in close coordination with the OMBN build. Since OMBN construction will conclude in the summer of 2013, and the County has established which CAIs will be connected through the ARC funded fiber, now is the ideal time to begin developing a last-mile network.

The County has been awarded additional funding in the amount of \$250,000 (matched by the County) through the ARC for the first phase of its last-mile network deployment (Phase 1) for its 2013 grant initiative. We anticipate that Phase 1 will serve as a pilot project for a wireless network deployment to serve about 200 residential and business end-users. The pilot network

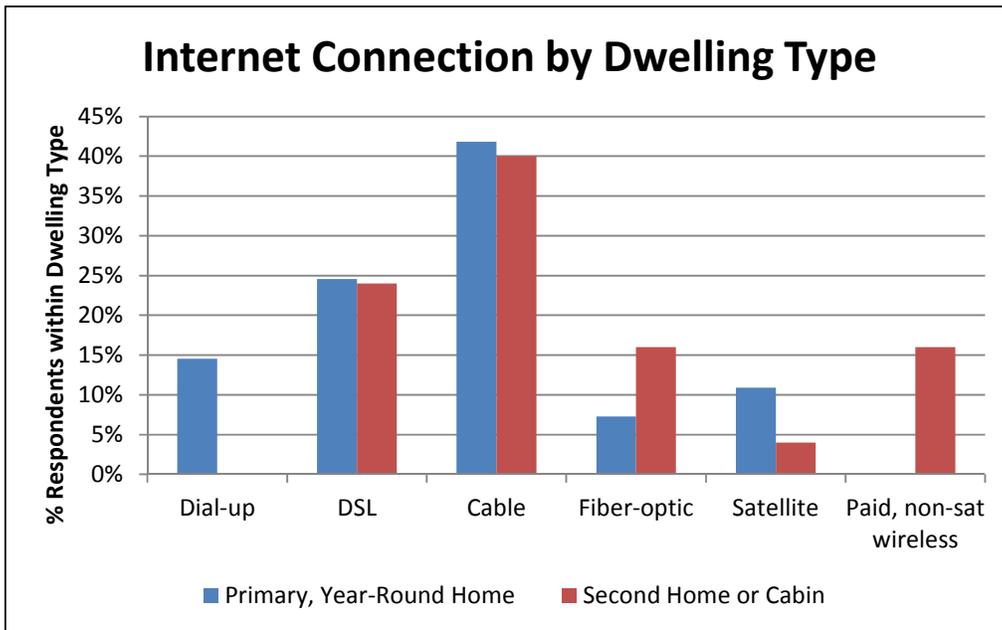
must be easily scalable to ultimately accommodate all of the target areas we have identified, providing service to as many as 3,000 currently unserved and underserved residences and businesses.

III. Background on Garrett County

Garrett County is a mostly rural community in Western Maryland. According to the U.S. Census, the County has a population of approximately 30,000. DSL, cable modem, and fiber wireline broadband services exist in the County, but due to the mountainous terrain and sparsely populated rural areas, significant portions of the County have limited or no broadband service. Satellite service is available throughout the County, but the broadband study found the adoption rate for satellite Internet to be quite low and we do not consider satellite Internet service sufficient to meet economic and community development needs.

Given its lakes, state parks, mountains, and ski resort, Garrett County is a popular tourist destination, as well as a popular destination for second home purchases. Over 20 percent of the residential respondents to the survey utilized during the broadband study were second homeowners. The survey found that a significantly larger portion of residents of year-round homes rely on dial-up and satellite Internet service (see Figure 1 below).

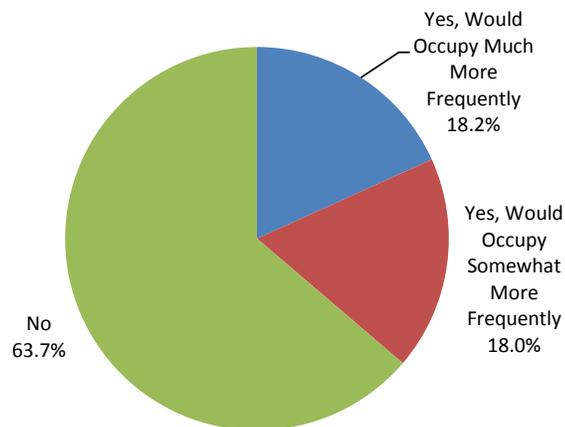
Figure 1: Garrett County Broadband Report—Internet Connection by Dwelling Type



In addition, more than one-third of second home owners said that access to a faster Internet connection would allow them to occupy their second home more frequently (see Figure 2 below).

Figure 2: Garrett County Broadband Report—Internet in Second Homes

Would You Occupy Second Home More Frequently if Faster Internet?



Garrett County also has a significant commuter population. According to the Maryland Department of Business and Economic Development, about a fifth of residents commute outside of the County to work.¹

County leaders are aware of the importance of broadband development to the economic future of the community. The County broadband report noted that as access to high-speed networks increases, it is likely to bring with it increases in income and new business investment; and new, high-quality jobs. In that light, this RFI is designed to seek prospective partners interested in helping the County bring broadband access to new segments of the community.

Finally, we believe that the case for broadband service expansion in Garrett County is extremely compelling for potential providers, because the County's residents and businesses have a demonstrated interest in and demand for broadband use. The customer surveys we conducted in the course of the broadband study produced very high response rates, indicating a high level of interest in broadband use. (Participation was particularly high among businesses, which returned a response rate of 42.4 percent.) The foundation of a well informed and engaged community, combined with our intent to assume considerable risk on the capital side, makes this project a compelling business opportunity for network operators and providers interested in pursuing a largely untapped broadband market.

IV. Policy Goals

Statement of Need

The County is seeking one or more Service Providers to operate fast, affordable services over County-constructed and funded network infrastructure. The County will construct a last mile network to reach homes and businesses in currently unserved and underserved areas. The County will lease the network infrastructure to Service Providers to sell services and manage the relationship with the customer.

The County also seeks a partner who will maintain the network infrastructure. This role may be performed by a Service Provider or by a separate partner.

This RFI is released for the purpose of optimizing the County's initiative and incorporating the needs and creative ideas of potential Service Providers. We seek responses that help determine the type of network that potential partners would be interested in using to accomplish our service goals, and what services would be offered over such a network. This information will assist in determining the technology used (TVWS or other) and the network design.

We wish to find prospective partners interested in leasing State and County owned fiber, wireless, and other infrastructure, and determine what services these partners would propose to provide.

Though no contracts or formal relationships will be established through this RFI, it will provide valuable information that will significantly influence Garrett County's network construction plans and identify a group of potential Service Providers for County homes and businesses. It

¹ 21.4 percent commuted outside the county as of 2007 to 2009.

<http://www.choosemaryland.org/factsstats/Documents/briefeconomicfacts/GarrettBef11.pdf>

will also enable us to understand the capabilities and interests of potential partners and determine how to best include them.

All interested Service Providers are strongly encouraged to respond. We welcome the response of incumbent Service Providers, as well as competitive providers, non-profit institutions, public cooperatives, as well as entities that are not traditional Internet Service Providers, but are interested in offering service under innovative business models (application providers, as an example). Nontraditional providers may respond as part of a partnership with a network service provider, or may provide a separate response outlining their approach.

Goals

There are several central goals to the County's network undertaking. Respondents to this RFI and any possible subsequent RFP should indicate whether and how their proposal serves these goals:

- 1. Offer service to any customer in the target coverage areas identified in Section VII over a County-built last-mile network; ultimately serving all of these areas (See Figure 3 below) is the most desirable outcome. Initially, in 2013, develop a service strategy for a pilot network serving about 200 users, consistent with Phase 1 of the network build as described in Section II above.**
- 2. Offer services and speeds otherwise unavailable to customers in the target areas. Provide speeds that exceed satellite and mobile broadband speeds, and provide service without data caps or overage charges.**
- 3. Propose a strategy leveraging OMBN and MDBC resources to enable a provider to cost-effectively and competitively connect to commodity Internet and secure cloud services.**
- 4. Ideally, suggest a network development approach that includes open access, where the County-built network is open to multiple Service Providers in addition to the respondent.**
- 5. Respond to the needs of businesses connecting to the County network.**
- 6. Provide cost-effective services for price-sensitive customers and flexible pricing plans.**

The County seeks an uninhibited network, where Service Providers may offer a range of services, and the network is neutral with respect to applications, websites, type of use, and type of end-user device.

We emphasize that providing a service without data caps is necessary to achieving what we consider to be an uninhibited network. Many wireless service providers limit usage more strictly than wireline services. Some plans with data caps reduce the user's connection speed dramatically when the limit is reached; others charge considerable overage fees based on the amount of surplus data consumed. Though wireless service providers may be able to increase these caps as their technologies improve, it is not clear whether the providers will keep ahead of demand, particularly with the rise of data hungry mobile devices such as tablets. Any service

provision that encourages users to be sparing in their data consumption is inconsistent with our network goals. To enable the kinds of economically desirable activities we seek—such as home-based business, digital learning, and attracting residents and visitors to spend more time in Garrett County, the network business model should encourage more Internet use, rather than pushing customers to ration their consumption.

Additionally, the County seeks partners to handle maintenance and operations of the network.

For the network to have the intended economic and quality of life impacts, we consider both cost and availability of service to be important. We encourage responses that address both to maximize adoption of service. Responses should discuss what speed and bandwidth options would be available over the suggested network technology, and estimated costs of multiple service options.

V. Existing Broadband Assets

Garrett County contains fiber optic backbone that traverses the County on major highways. The MdBC's existing fiber route runs along I-68 west from Allegany County to Friendsville, then turns north onto MD-42 to the Pennsylvania state line. (Level 3 owns the fiber and shares it with MdBC). OMBN fiber is under construction south along US-219 (from the I-68 interchange) to Oakland, the county seat, and along a number of smaller routes including MD-39 and MD-135. The 50 miles of OMBN fiber under construction include interconnections with the existing MdBC fiber (to Washington, DC and central Maryland) on I-68, and to 49 CAIs. The MdBC also operates two POPs in Garrett County.

The MdBC is a sub-grantee of the OMBN project; the cooperative is the open access partner for the project. Under the terms of the federal grant, that fiber will be open access as will the network MdBC operates with equipment purchased with grant funds. The County last-mile project would utilize the OMBN and MdBC fiber for network middle-mile. Providers operating service over the County network have the option of purchasing backhaul from the MdBC, with access to the cooperative's POPs.

VI. Role of MdBC and OMBN Fiber

The County network will include connections with existing fiber backbone, using the MdBC as a broker to access commodity bandwidth. The OMBN and Level 3 fiber offers access to the MdBC POP locations on the fiber backbone. Therefore, interconnections with state and cooperative fiber resources are critical to the success of the County network in providing high-speed access to the commodity Internet. We encourage respondents to this RFI to offer strategies for leveraging these assets to the greatest mutual benefit of the County and its partners.

In addition, responses should consider the following items:

- What risks, if any, do you foresee in providing network service over a County network utilizing MdBC/OMBN fiber resources? What strategies would you employ to alleviate these risks?

- How could the County network be used to serve CAIs within the County in the target areas, or those not currently being served by County or OMBN fiber?
- Based on your proposed network strategy, how would you approach management of the interconnections between the County network and other networks in the area from an architectural standpoint and a business model standpoint?

VII. Target Network Coverage Areas

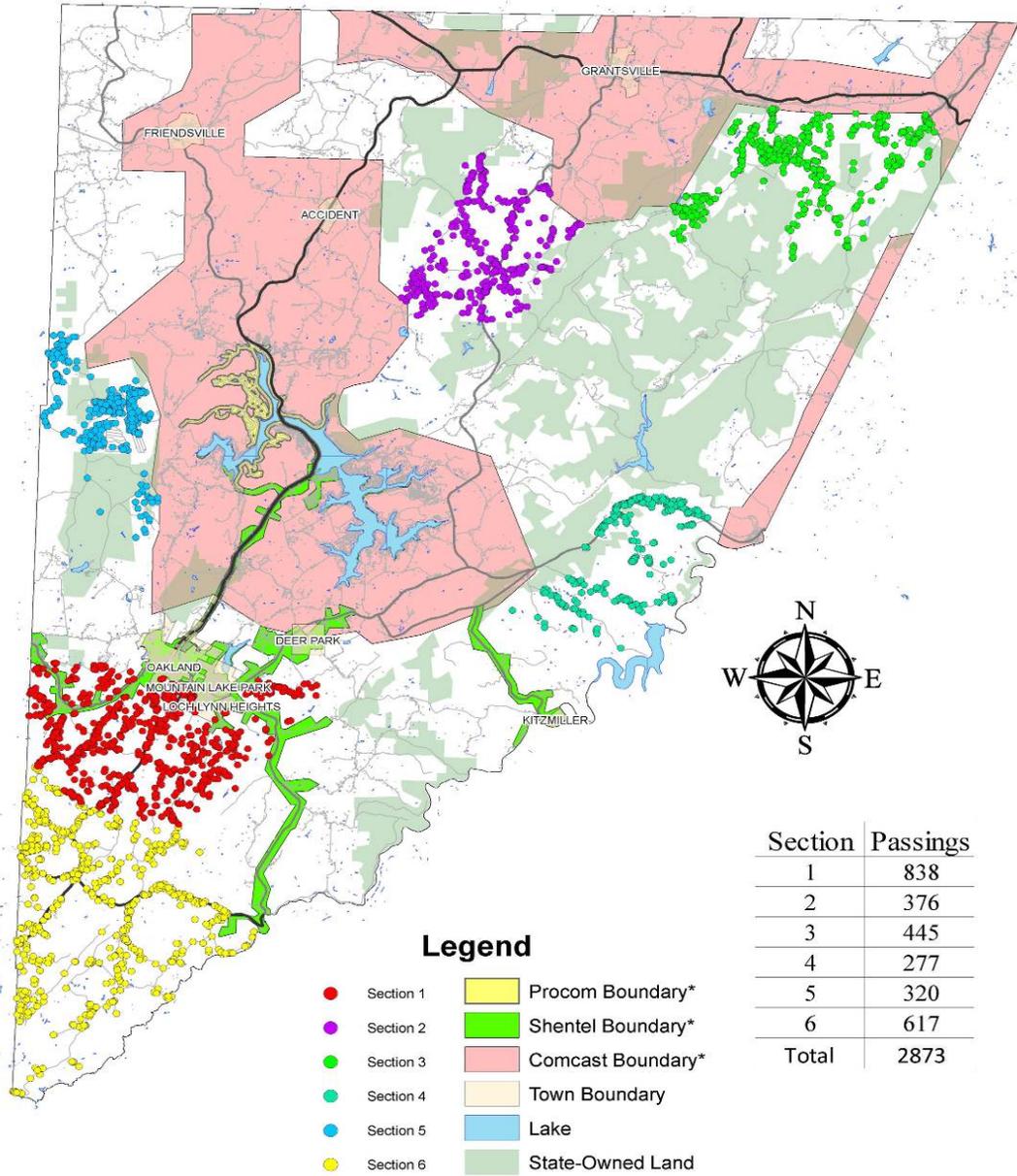
The County has identified several target areas for network implementation based on our customer surveys, input from the County's Economic Development Department, County knowledge of Mountain Communications, LLC's (Procom) fiber routes, and the service areas reported by the Comcast Corporation and Shenandoah Telecommunications Company (Shentel). (The Comcast, Procom, and Shentel service areas are approximations based on the companies' input and other data; while the data lack the granularity required for a street-level design, they are sufficient for purposes of this analysis.)²

The County has identified six discrete areas that, in total, include approximately 2,873 homes and businesses (i.e., passings), according to the County's GIS records. Given the County's approximately 20,100 residences, these areas represent 14.3 percent of the County's homes. (See Figure 3 below).

² This design was completed without the benefit of data detailing the availability of DSL, because that information is not publicly available; thus, some of these homes may be eligible for DSL service.

Figure 3: Map of Proposed Network Coverage Areas

Garrett County Wireless Network Coverage



Section	Passings
1	838
2	376
3	445
4	277
5	320
6	617
Total	2873

Legend

- Section 1
- Section 2
- Section 3
- Section 4
- Section 5
- Section 6
- Procom Boundary*
- Shentel Boundary*
- Comcast Boundary*
- Town Boundary
- Lake
- State-Owned Land

*Approximate service areas derived from company-provided cable routes and other data.



VIII. Information Required to Respond to This RFI and Response Procedure

Garrett County requests the following information—in as much detail as is practicable—from respondents:

1. Affirm that you are interested in this partnership and address the core policy goals and requirements listed above. If you cannot meet any of those requirements, indicate the requirements to which you take exception and provide an explanation of the exceptions.
2. Provide a statement of experience discussing past performance, capabilities, and qualifications. Identify other networks your firm has operated or maintained, as well as any network design and build experience if any; include the levels of broadband speed, technology type, availability and adoption among different categories of end-users and unique capabilities or attributes. Discuss partnerships with other service providers, government, or non-profit entities you have undertaken, particularly any involving wireless networking and/or providing service to rural or underserved populations. Describe the nature of the projects and your firm's role. Explain how your firm is a suitable partner for this project.
3. At a very high level, summarize the technological and operational approach you would use for this project. What kind of network would you like to see the County build for you to become a service partner? How would you use the technology to meet the County's goals? What approach would you use to interconnect with the Internet and other public networks? How would you perform network management? At what sort of facility (or facilities) would you place network electronics? What fiber resources would you need to provide the desired levels of service?
4. Describe your approach to developing service for the Phase 1 pilot network described above. Specify to what locations you would recommend the County provide network service for this initial phase, and explain why. Affirm that your approach to providing service for the pilot network would be scalable to serve the remaining unserved and underserved portions of the County.
5. Summarize the business approach you would use for the project. How would your business plan help meet the County's goals? What are the key assumptions? What are your main areas of risk, and how can the County help reduce the risks?
6. If you currently operate communications facilities, inform us as to whether they are operated on an open access basis.
7. What is your proposed schedule for implementing service? Offer a timeline with key milestones. Are there specific service areas you would recommend be developed first?
8. Are you proposing to perform network maintenance? If so, describe your ability to perform network maintenance on an ongoing and as-needed basis. Provide estimates of the operating cost of maintaining the facilities for the type of network you suggest and include your main assumptions.

9. What are your requirements for the County to meet in order for you to partner with the County on this project? What, if any, are the financial requirements you have of the County in order to enter into a partnership? If you do not address this question as to financial requirements, it will be assumed that you are interested in the partnership but have no financial requirements whatsoever of the County.

10. What service options would you plan to offer over this network? What download/upload or symmetrical speeds would you offer and guarantee to end-users? How will your residential and business offerings differ, if at all?

11. Provide three (3) references, including contact information, from previous contracts or partnerships.

All interested respondents are asked to submit a Letter of Intent to Garrett County Purchasing Department, 203 South Fourth Street, Room 208, Oakland, Maryland 21550 on or before **Friday, October 18, 2013** at 2:00 P.M. (local time.) Sealed RFI's must be submitted to the Garrett County Purchasing Department, 203 South Fourth Street, Room 208, Oakland, Maryland 21550 on or before **Friday, November 1, 2013** at 2:00 P.M. (local time).

Respondents shall supply five (5) hard copies of their RFI submission, and an electronic copy through a media device (CD, thumb drive, etc.) or a link to a website displaying their complete RFI submission.

Please identify/indicate any proprietary and/or confidential information as such.

Questions regarding this RFI should be faxed to Charlie Junkins, Buyer, at (301) 334-1985. The Purchasing Department will formally respond to questions via addendums to the RFI. Please be advised that questions will be entertained until 2:00 P.M. on Friday, October 11, 2013. Questions asked after this time will not be formally answered.

The following is the schedule for responding to this RFI. The schedule is subject to change:

September 27, 2013 – RFI Released

October 11, 2013 – Deadline for Submitting Questions

October 18, 2013 – Deadline for Submitting Letter of Intent to Respond to RFI

November 1, 2013 – **RFI Responses Due**

Garrett County thanks you in advance for your thoughtful response.

**Request for Information
Services, Operations and Maintenance for
County Built Broadband Network
RFP #13-1101B**

Signature Sheet

My signature certifies that the proposal as submitted complies with all Terms and Conditions set forth in this RFI.

My signature also certifies that the accompanying proposal is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce.

My signature also certifies that this Firm has no business or personal relationships with any other companies or persons that could be considered as a conflict of interest to the County, and that there are no principals, officers, agents, employees, or representatives of this Firm that have any business or personal relationships with any other companies or persons that could be considered as a conflict of interest or a potential conflict of interest to the County, pertaining to any and all work or services to be performed as a result of this request and any resulting contract with the County.

I hereby certify that I am authorized to sign as a Representative for the Firm:

Name of Firm or Individual: _____

Address: _____

Fed ID No. _____

Signature: _____ Title: _____

Telephone: _____ Fax Number: _____

Date: _____

Email: _____

To receive consideration for award, this signature sheet must be returned to the Garrett County Purchasing Department as it shall be a part of your response. Firm acknowledges receipt of Addendum(s), if any, by initialing the following:

Addendum #1 _____

Addendum #3 _____

Addendum #2 _____

Addendum #4 _____