

Request for Proposal to Implement, and Operate the North Carolina TeleHealth Network Extension Phase . (RFP 02)

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I. Introduction

This is a Request for Proposal issued by the Cabarrus Health Alliance for the third phase of project called the NC TeleHealth Network (NCTN). This third phase is focused on extending service for many existing sites and adding several sites. CHA expects to issue a contract pursuant to this RFP within one to two months of the RFP being posted. CHA expects service for most sites to start soon after the contract start date and continue at least until 10/21/2016.

II. Site Types

Each site to be served by a Contract issued pursuant to this RFP is classified as either site type PH or site type H. The individual site designations will be made in Appendix E for the initial sites. Site types for any future sites will be made when the site is identified to the vendor.

The major sections below are labeled as pertaining to sites of one site type or the other or both types. Unless stated otherwise, the text of any section in this document applies to the site type(s) noted in site type label on the containing major section title. In appendices and other materials, unless a site type is mentioned, the materials will apply to both site types.

III. Site types H and PH: Overview

A. Overview of North Carolina TeleHealth Network

The North Carolina TeleHealth Network (NCTN) EX (Extension) Phase is a phase of the NCTN project designed to 1) extend the length of broadband service to which RHCPP discounts apply to existing sites and 2) include additional sites on the NCTN in a way that makes RHCPP discounts available to them. There are two prior phases of the NCTN: 1) the NCTN-PH phase for public health, free clinics, and some community health centers and 2) the NCTN-H phase for NC hospitals. These two phases have services provided by the Microelectronics Center of NC (MCNC). The web site at <http://NCTelehealthNetwork.com> supports general communication needs for project stakeholders.

The services purchased for the NCTN-EX phase under a Contract pursuant to this RFP will be selected based on a number of parameters. Chief among them will be a price and performance balance that is compatible with long-term sustainability of the NCTN. We plan to encourage increased value in network services by: 1) selecting one vendor (an integrator/aggregator) to be responsible for the entire phase's construction, and operation and 2) forming an NCTN Association of subscribers that will seek efficient and effective network services for these sites over the long term while acting as a support for continuing to developing long-term financing options.

NCTN-EX services are planned to be partially paid for by discounts from the FCC's Rural Healthcare Pilot Program (RHCPP). It may also be that the soon-to-be reformed permanent Rural

Healthcare Program (RHC) will provide additional support for other sites and beyond the end of the RHCPP. This RFP is intended to meet the applicable RHCPP's program rules and regulations and position the NCTN to take advantage of any benefits in the reformed RHC.

The Cabarrus Health Alliance (CHA) is the formal Program Coordinator for the NCTN from the FCC's perspective. CHA is also known as the Public Health Authority of Cabarrus County. The CHA will also be the contracting party for the Contract that results from responses to this RFP. Kirby Information Management Consulting, LLC is a subcontractor to CHA to support the NCTN development. We expect to form the NCTN Association as a 501(c)(3) once the FCC's new reformed Rural Health Care Program is finalized and thereafter move the program coordinator function and Contract responsibility to this association. CHA (and later the NCTN Association) will name an official to be the NCTN Administrator for the purposes of the Contract.

This RFP is designed to help CHA select a (one) vendor to whom we may offer a Contract to build, and operate the NCTN-EX. The key opportunity for the bidder is in obtaining a long-term customer with significant buying power, expertise, and growing needs whose sites span virtually every community in North Carolina.

While this RFP body provides the detailed requirements of the vendor, here is an overview of vendor responsibilities:

- 1) The vendor must propose services and pricing consistent with the needs per site described in this RFP. Each site has been assigned one or more "service types" (described below). These services will likely come from a variety of sources/parties (sub-contractors to the vendor), given the geographic distribution of the sites and the variety in available services across the state – especially in the "last mile" portion of the network.
- 2) The vendor must offer these initial services at a stated maximum price for the duration of the Contract. The pricing can include recurring and non-recurring fee elements, and for some services (e.g. dark fiber use) mileage-sensitive fees. The Contract is planned to run at least until 10/21/2016, when the invoicing period for the RHCPP ends. The Contract termination date may be set to extend beyond the life of CHA's participation in the RHCPP (i.e. after 10/21/2016) in order to leave open the option of continuing to provide discounts to the sites from the permanent (likely to be reformed) FCC Rural Health Care Program or from other funding sources.

During the execution of the Contract, once a specific service is offered at each site, the site management staff and NCTN Administrator will either accept the offer, request a change in offered service (based on a Standard Pricing Schedule indicated below), or reject the offer (meaning that the rejecting site won't participate in the NCTN). Based on the prior study of the sites, we predict that virtually all sites will accept the offered service. Unless stated otherwise for a given site, all of the proposed services must be eligible for discount under the FCC's Rural Healthcare Pilot Program (RHCPP).

The initial length of service at a given site under the Contract issued pursuant to this RFP will vary between about one year and about four years. We expect to ask for service at the vast majority of the initial sites before July 2012. Subsequent periods of service may be requested under this Contract .

3) The vendor must offer a “Standard Pricing Schedule” with one maximum price (potentially containing both non-recurring and recurring components) per “service type” per vendor-defined region that can be used over the Contract period. This standard pricing schedule is planned to be used for:

1) future moves/adds/changes in the initial participating sites’ services and
2) for services at sites that are not among the initially participating sites. This set of currently unnamed sites may be as large as 5000 sites.

4) The vendor must arrange for the installation of the services, training and other start-up elements and perform the acceptance process at each newly activated site. Service costs can be invoiced once services have successfully completed acceptance testing.

5) The vendor must monitor/manage the network’s performance and periodically work with sites and NCTN Administrator to make small changes as needed to improve performance/reliability. The vendor must participate in various audits, site visits, and other inspections as required by the NCTN Administrator. The vendor must provide regular reports on the network performance to the NCTN Administrator and work with the NCTN Administrator to provide any clarifications requested.

6) The vendor must work with the NCTN Administrator towards the end of the contract to assure a smooth transition to the next phase of the NCTN after this initial contract, including aiding customers moving to non-NCTN services.

7) The vendor must abide by the requirements of the RHCPP program that apply to the service providers who receive discounts through the program. FCC Order 07-198 describes the RHCPP program. Details of vendor requirements not explicitly stated there can be elicited from the FCC or USAC. Vendor must abide other FCC rules associated with the RHC program if and when the vendor agrees to service sites whose invoices will be partially paid for by the RHC discounts.

8) The vendor must be able to (construct, if needed) and start operations at a given site based on the timing needs noted above.

9) The NCTN network concept is one of a dedicated network in which all NCTN subscribers can move traffic among themselves without crossing the public internet or other public network. The vendor must integrate with the existing network of NCTN-H and NCTN-PH sites in a way that meets this requirement for the combined sites of NCTN-H, NCTN-PH, and NCTN-EX. The current contracts with the vendor of these earlier two phases provide for a means to do this.

B. HCPs and Sites of Service

The goal of the overall NCTN project is to construct and operate a highly reliable dedicated broadband network linking Health Care Providers (HCPs) throughout North Carolina. The NCTN-EX phase must be proposed in a way that interconnects with the NCTN-PH and NCTN-H phases so that we can continue to offer sites the ability to move their traffic among all of the NCTN sites without passing through any public networks (e.g. the Internet). These sites also have access through the dedicated network to the Internet and Internet2. This part of the RFP details the broadband services that the winning vendor is required to provide to each of the participating HCP sites.

The project has gathered a database with key information about each known site via a “registration” process. Each HCP site has one and, sometimes, two “service types” assigned to it. Each service type has different requirements described below. The participating HCP sites and the level of service are listed in Appendix E. Participating Health Care Providers (HCPs): HCP Nomenclature. Appendix E is provided as an Excel spreadsheet in the form of the FCC’s form 465 attachment.

The vendor’s proposal must include maximum prices for all elements needed to effect the services. The service prices must itemize (1) the one-time (non-recurring) costs, including all hardware items and their installation; and (2) the recurring service fees associated with each HCP site in the NCTN for a period of five (5) years following that HCP Site’s Operation Date. These costs will have to be itemized by individual site in order to meet RHCPP program requirements for discounting.

Vendors submitting proposals are encouraged to look for partnership opportunities and to use/leverage existing infrastructure with the objective of reducing the overall cost of network construction and operation.

The initial participating HCP sites, including service type information per site are listed in an attached Excel spreadsheet as Appendix E. Participating Health Care Providers (HCPs): HCP Nomenclature. Please note that while there is a high probability that each site listed in the attachment will ultimately accept offered services, each site agrees to accept the services offered under the Contract only after the configuration and pricing are known and agreed to by the site management and the NCTN Administrator. Prior to that, it is possible that some of the listed HCPs may decide not to participate. After starting service, participating sites may choose to end service in any given year (i.e. a year-to-year commitment), but will give up RHCPP or RHC discounts in doing so.

Some sites may move their locations (within the same general area that they serve) during the life of the Contract. The vendor should be prepared to offer new services at a new site in the area of the existing site and to provide for a short period (a month or so) of concurrent operations at both sites. Pricing at the new site will be based on the Standard Pricing Schedule.

Some sites may add/change the service types during the life of the Contract. The vendor should be prepared to offer new services at a site and to provide for a short period (a month or so) of concurrent operations at the site. Pricing at the new/changed service(s) will be based on the Standard Pricing Schedule.

New (usually RHCPP-eligible) locations may be added to the Contract during its life.

As with the initial eligible sites, the new, additional, and moved sites and services must be offered based on a “Standard Pricing Schedule” of maximum prices eligible for RHCPP discounting provided in the Contract. If special fees are associated with moves/add/changes the pricing schedule must state these.

There may also be non-RHCPP-eligible locations (i.e. no discount) to be added during the course of the Contract. CHA (and later the NCTN Association) will provide policies for which ineligible entities may join. These sites will be provided services with pricing from the Standard Pricing Schedule.

The FCC has issued a proposed rule to reform its permanent Rural Healthcare program. If and when a final rule is issued, it will likely contain discount opportunities that would be advantageous to the NCTN sites. We intend to examine this final rule and plan to leverage these discounts if appropriate. In doing so, there may be new or extended service lengths requested of the vendor for the sites served under the Contract issued pursuant to this RFP.

IV. Site Type H and PH - Connection of NCTN-EX to NCTN-PH and NCTN-H

The NCTN currently has two phases – NCTN-PH and NCTN-H. The NCTN-EX must connect to the NCTN-PH and NCTN-H in a way that, to the end users, it appears to be one (private) network to subscribers and supplies the functions, aggregate throughput, bandwidth, latency, jitter, reliability and other capabilities described in the technical requirements.

V.Site Type H and PH - TSP Registration

All circuits used by the NCTN-EX must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program. If a circuit is not a transport circuit regulated by the FCC then vendor must provide equivalent priority for restoration of service.

VI. Site Type PH - Description of Infrastructure, Products, and Services Sought

A. Site Type PH - Technical Requirements

1. General Requirements

The goal of the NCTN project is to construct and operate a highly reliable, highly available high-speed broadband network linking HCPs throughout North Carolina in rural, sub-urban, and urban locales. Most network participants have mission-critical networked applications and many have requirements to operate in responding to a disaster in the communities where the sites exist. Specific requirements are listed below ; however the Vendor is responsible for providing a complete and functional solution that respects these overall requirements. The vendor must offer only goods and services that are eligible for discounts under the RHCPP program.

2. Network Design

While vendors must describe the design of the NCTN-EX in their proposals in accordance with the services they shall deliver, it is conceivable that this network would utilize core/router configurations in the major metro areas across the State with each core connected to a facility within the State (of North Carolina) (e.g. redundant core routers). The network must have reliable connection(s) to the commercial Internet only for transmission of traffic to/from non-NCTN locations . The centralized core must route all traffic within the State (Peering) and only route the commercial IP traffic out/in of the State. More peering with ISP's within the state will be an advantage to the health community and therefore will be favorably considered in the design, additionally, it's adaptability to current and future technologies as well as its ability to eliminate much of the overhead associated with large scale networks are required features.

Any similar solution that has these same characteristics is acceptable to propose. The central core locations must have a high bandwidth capacity to interconnect to the statewide networks serving key data centers of the public health agencies, hospitals, community health centers and other major healthcare provider groups. All transport facilities are to be fully provisioned from end-point to core or central core location. Physical facility installation to the demarcation point at each site, where needed, must be included in the bid. Transport: To be determined by vendor, but must be transparent to layer-3 and higher protocols.

For some sites (noted in the "service type" descriptions), the need for reliable connections will likely require some form of redundancy to the site. For the sites that need reliable connectivity as part of responding to a community disaster (e.g. hurricane, flood, tornado, fire, ice storm, epidemic, bio-event), proposals should consider the physical robustness of the network and the limits on ability to provide service personnel under these circumstances. Use of highly independent means of connectivity (e.g. fiber route diversity ,satellite-based services) is encouraged in circumstances where they may best support the need for high reliability.

There are a limited number of datacenters that are of key importance to most users of the network. Some of these key datacenter connections are not considered “sites” for RHCPP purposes; the costs of connecting to the statewide networks serving these key data centers are to be shared among the sites. Special attention in the design and operation models proposed should be given to assuring that user sites have reliable connections with low latency to these datacenters. The Public Health Sites’ datacenters can be accessed thru the interconnection of the NCTN to the State’s network at specific points in Raleigh, NC.

This interconnection to the State’s network will support all Service types except Service type 5 (the FCS), and must meet all the requirements of the Backbone; Provide one (1) Gig bandwidth, with redundant paths and interconnecting equipment, and all intra-State traffic (other than outbound/inbound commercial Internet) must be peered for improved network performance. Vendor is required to work with the State to insure that disaster recovery systems are in place.

We have chosen not to publish more information about the datacenter locations in this RFP for security reasons. If bidders feel that more information on the sites is critical to their bid and if the evaluation committee and site managers agree, more information can be provided on a non-disclosure basis.

If the bidder proposes use of satellite connections at the user sites, the bidder should also consider proposing a companion satellite connection at these key datacenters.

Specific performance requirements for intra-NCTN connections are:

- Bandwidth: As specified by the Service Type for the site
- Latency: < 60ms; (between site and core routers/switches)
- Stability (video): jitter: good 0 – 20 ms, acceptable 20 – 50ms;
- Packet loss good 0 – 0.5%, acceptable 0.5 – 1.5%

The network, especially the backbone that interconnects multiple sites, must be designed to be resistant to failures. All single points of failure that could affect more than one site, if any, must be identified and eliminated if practical. Single points of failure that affect only one site must meet the reliability requirements noted in the service type description for each site.

All sites on the network must support fully interoperable IP services/ports and advanced services, including H.323 audio and video conferencing, large (100MB+) file transfers, web-based audio and video streaming, ASP model business applications, and Voice over IP (VoIP); providing complete network convergence throughout the infrastructure.

All equipment, transmission methods, and systems must be “industry-standard.” Industry-standard is defined as the most current version of relevant standard(s) set by an American National Standards Institute (ANSI) or International Organization for Standardization (ISO)-accredited Standards Developing Organization (SDO), such as the Institute of Electrical and Electronics Engineers (IEEE), Telecommunications Industry Association (TIA) or Electronic Industries Alliance (EIA). Vendors must list what relevant standards the solution utilizes.

Following the Open Systems Interconnection (OSI) model: Layer three interfaces must be Internet Protocol version four (IPv4) with a capability to support version six (IPv6). Layer two interfaces at each site will be Ethernet, meeting Metro Ethernet standards. Layer one may be any physical medium (fiber optic cable, co-axial cable, copper wire, wireless, satellite or other) meeting the performance requirements specified. NCTN prefers fiber-optic cable as the physical medium because of the reliability and scalability advantages of fiber, but this is a preference, not a requirement. Due to the nature of the health care industry, the proposed solution should be adaptive and scalable to meet the changing landscape.

The network must support the use of standard encryption, data integrity, and false remote node detection mechanisms used on IP networks. The vendor must describe in its proposal the technical, physical and administrative security measures employed in providing the services. These services must meet the minimal technical, physical, and administrative requirements of the HIPAA Security Regulation and the security requirements of Business Associates in HIPAA and in the American Recovery and Reinvestment Act of 2009. This does not imply that the vendor is a Business Associate of any of the NCTN sites that are Covered Entities under HIPAA.

The services must be configured to support performance and availability reporting, troubleshooting, and bandwidth management of traffic for each site. Internet/Internet2 content filtering, when used, must be managed for each site based on policies set by each site manager. The NCTN Administrator will provide a default policy set for those who wish to use it.

3. Equipment and Hardware

All equipment, including all equipment installed at HCP sites, must have a minimum documented mean time between failures (MTBF) of 150,000 hours. The overall reliability of the network—and, therefore, of all components comprising the network—is an important proposal evaluation criterion of this RFP. All hardware must be manufactured by a manufacturer with at least five (5) years of experience. Vendor must provide, as an attachment to the response, manufacturer specification/data sheets of all hardware that is proposed.

Vendor is responsible for monitoring, maintaining, updating/patching, repairing/replacing failed and failing components and ensuring that the equipment continues to function for the duration of the Contract. Security related patches must be applied within 30 days of stable release from the manufacturer. Non-security related patches must be applied within 60 days of stable release from the manufacture. The vendor assumes replacement responsibility and costs for site-based equipment that is damaged, stolen, etc.

4. Types of Network Communication/Traffic

Each connection is required to support three (3) different types of network communication/traffic:

- 1) intra-network traffic (participating HCP site to participating HCP site- including the other participations of the NCTN network);
- 2) access to the commercial Internet (and Internet2); and
- 3) access to the key datacenters networks, (noted above)

Intra-network traffic is the baseline traffic and must be available at the full capacity of the connection as listed in each service type description. All intra-State traffic (other than outbound/inbound commercial Internet) must be peered within the State, for improved network performance.

The vendor is required to monitor the utilization of the local access link at each site and report on a quarterly basis to the HCP and NCTN Administrator. If during two quarters the utilization during prime shift is above 60% then the HCP has the right to request additional bandwidth; and upon approval from the RHCPP program officials and NCTN Administrator, the vendor is required to upgrade the individual HCP's bandwidth (based on the Standard Pricing Schedule).

5. Optional - Internet2

Access to the research-based Internet2 network is **not** a requirement of this RFP, but will be considered as value added in the evaluation process. If Internet2 is offered then the connectivity must provide a full connection to the Internet2 that enables full IP connectivity through the Internet2 backbone network to all Internet2-connected members, Internet2-connected international networks, Internet2-connected Federal Network, and other Internet2-connected national research and education networks.

6. Response, Repair, Monitoring and Maintenance

Vendors must provide information as to their ability to meet response times as described below. This information must include the planned resources—including repair facilities, staffing, and spare parts—locally available in the geographic area of the Contract.

Maintenance that may or will cause an outage must be minimized. The acceptable maintenance window for this network will be from 4:00 a.m. to 12:00 a.m. (local time) on Sundays. The vendor must provide notice of planned maintenance to the affected HCPs (e.g., on a Thursday prior to a Sunday's maintenance) and NCTN Administrator at least 30 days prior to the planned outage. The notice must include, at a minimum, the date and start time of the maintenance, the anticipated duration, the services and/or sites that will be affected, the services and/or sites that might be affected, the reason for the maintenance, and any additional related information and links.

The selected vendor must maintain a network operations center that will monitor all network traffic and circuits. The network operations center must monitor the network's status and alert vendor personnel to outages 24/7/365. During business hours (8am-9pm Monday through Friday) the network operations center must be staffed. The network operations center must utilize an automated system that actively monitors all network sites and alerts staff of any unusual or adverse events, traffic, or outages. Vendor must provide detailed description of this automated system including what types of items/traffic it monitors, what reports are generated and how alerts/notices are handled and escalated. The vendor shall collaborate with NCTN Administrator to develop policies and practices related to working with HCP sites in fielding and resolving operations issues.

The vendor must maintain a current and up-to-date contact list for all HCPs. The vendor must notify, via voice communication, the HCP within thirty (30) minutes after determination that the customer's service is not available or is likely to fail. The vendor must maintain a trouble ticket log that identifies the troubles reported, the time of the report, the time to resolution, and the type of trouble reported or discovered. This system must be capable of generating monthly trouble ticket reports.

The vendor must provide all participating HCPs a single telephone number to report network outages. Vendor support must be available 24 hours per day, 7 days per week, in the event an HCP needs to report a system outage and/or request technical support. All calls must be answered and connected to a live network technician within ten (10) minutes. At its option, the HCP may leave a voice mail message. Vendor support personnel must respond to any voice mail messages within one (1) hour of the message being left by the HCP. Also having a web/text based reporting and status checking process for those reporting problems would be preferred.

7. Interruption of Service

For the purpose of this project, an **interruption of service is defined as** any two (2) minute interval with a complete interruption of transmission, a bit error rate of worse than 1×10^{-9} for a particular communication path within a route, or any other reduction in throughput on the network below the service type standard. The following shall not be deemed an interruption: a) any period during which the customer fails to afford access to any facilities for the purpose of investigating and clearing troubles; b) *Force Majeure* events (except for those events described in Service Type 3); c) interruptions of a service that is in whole or in part off-net to the vendor; d) announced planned maintenance in the acceptable maintenance window; and e) interruptions caused in whole or in part by customer equipment. The vendor must track and log (maintain a database of) all interruptions of service for the duration of the Contract. NCTN Administrator and the HCPs must always have access to this log. The NCTN Administrator and the HCPs reserve the right to independently track and log interruptions. The vendor will work with the NCTN Administrator and the HCPs to ensure this option is available. An interruption begins as soon as it is noticed by the vendor's network monitoring staff or notified by the automated network monitoring system, or reported to the vendor by an HCP or NCTN- whichever is the earlier event. An interruption ends only when full and reliable communication resumes and remains continuously reliable for four (4) hours and is certified as such by the site manager.

The vendor must recognize that it is to be the day-to-day network manager of the network. Access to logs etc for NCTN Administrator and HCPs is only meant to encourage transparency and accountability in network performance and operations.

8. Reporting

The vendor must provide detailed monthly network reports to NCTN Administrator and to each HCP. These reports must include a list of interruptions of service, including dates, times, and durations; the response time for issues reported that month; mean-time-to-repair to date by month, quarter, and year; total usage summary by hour, day, and week; usage by network type (intra-network traffic, i.e., participating HCP to participating HCP; access to the Internet; and access to the State maintained data repositories); and usage for the top 25 sources and destinations. In addition, a usage summary by hour, day, and week by protocol/function (http, SSL, SSH, Telnet, FTP, etc.) is desirable but not required. Reports must be made available to the technical contact at each site within five (5) days of the end of the calendar month. In addition the

underlying data for the report must be available to the NCTN Administrator in a common machine-readable form (e.g. Excel spreadsheet, Access database). The vendor must interact with the NCTN Administrator or designee as requested to clarify report content.

9. Communication/Documentation

Many points of process in this RFP and in the Contract require communication of status and activity related to servicing the sites. We would prefer a process that depended on a web site with appropriate access by each party (e.g. vendor, NCTN Administrator, site manager, sub-contractor, auditor) to both provide information and obtain information related to NCTN construction and use. Proposals that include this feature will be preferred and will be part of the formal evaluation.

10. HCP Provided Items

Each HCP will provide electrical service, reasonable access to facilities, a contact at the site and/or their technical support person, and properly built physical space for equipment. In addition, each site will nominate a “site manager” who can make decisions called for by the Contract for site managers to make. Vendors are required to provide, as part of their response to the RFP, detailed requirements of the above items and any additional items to be provided by each HCP. In the case of the SERVICE TYPE 3 (First Responder sites) additional requirements will be identified for each site.

11. Vendor responsibilities in starting service

In starting service at each site, the vendor must:

1) Document the event of service startup including date/time, personnel involved, services started. This documentation will be available to the NCTN Administrator and site manager.

2) Measure the throughput to the key sites and the Internet (and the optional Internet2 connection) of both the existing service and the new service. Throughput for current and new service must be measured during the site’s daily peak usage period. This data will be made available to the site manager and the NCTN Administrator as part of the acceptance criteria.

3) Offer and confirm the acceptance of these services with the site management and the NCTN Administrator.

4) In a de minimus number of cases, the planned service for the site may not be adequate. In these cases, the service will not be accepted. In these cases the vendor will work with the site manager and the NCTN Administrator to select an appropriate service from the Standard Pricing Schedule.

12. Interconnect/Backbone

The backbone is defined as any network segment that supports the traffic from more than one site. The backbone must be resistant to failure. It is highly desirable that all backbone segments be redundant. Any segment that supports more than twenty (20) sites in any Service

Type or more than three (3) sites that are Service type 1 or Service type 2 **must have redundant paths and interconnecting equipment**. The vendor is responsible for maintaining the backbone in an up and reliable state, free of any interruption of service, at least **99.999%** of the time, measured monthly, quarterly, and annually.

At no point on the network may the subscription rate be more than two to one (2 to 1). That is, each link that carries traffic for two or more NCTN nodes must be at least half as large as the sum of the nodes that may contribute traffic to (or obtain traffic from) the shared link. Due to its semi-private network requirements, the network must have at least two (2) Internet gateways. These gateways must be at least 50 miles apart from each other and any other Internet gateway. Vendor must provide at least two (2) Domain Name System (DNS) servers. The DNS servers must be at least 50 miles apart. The Internet gateways and the DNS servers may be co-located. The subscription ratio for the Internet connections may be up to 4 to 1 (i.e. for each 10Mbps of throughput in the core network, there must be at least 2.5Mbps of Internet throughput available).

13. Ongoing Changes

HCP sites may change (increase or decrease) their available bandwidth or change other characteristics, up to the connection's full capability by adding/substituting the appropriate service type(s). The maximum cost will be based on the Standard Pricing Schedule. The vendor must complete the change within 60 days.

14. Site type PH: NCTN Site Broadband Service Type Requirements

This section contains a description of several types of network services. Each type is called a "service type". Each service type contains a description of the network requirements for sites designated as being in need of that service type. Some sites are described as requiring two service types; in such cases the total service requirements are the combined requirements of the two service types. The sites have been assigned an initial service type(s) in preparation for this RFP (See Appendix E. Participating Health Care Providers (HCPs): HCP Nomenclature) . Vendors may propose additional service types for use on the Standard Pricing Schedule.

a) Service type 1 – for county-connected Public Health Sites (PHS)

Supported site Description

It is fairly common for county (local) public health agencies in NC to have network services be provided as part of a network acquired and supported by county government. The network typically has fixed lines for all county agencies to one central place in the county. Typically, there is a shared connection from this central location to the Internet. These network services are usually land-based facilities leased from a communication provider but in some cases the county may own these facilities. PHS's also receive county technical support in this arrangement.

These sites are listed as requiring Service Type 1 services in the site database along with a location/contact for the county admin.

Connection

The NCTN connection from the PHS site to the county's central switch for a service type 1 site must be capable of sustained bidirectional throughput of at least ten (10) Mbps .

The connections from the central switch - to the key datacenters, to other NCTN sites, to the commercial Internet port,(and to Internet2 if proposed) must be capable of sustained bidirectional throughput of 5 Mbps for each HCP site . The vendor may propose to accomplish this by either upgrading existing equipment and services or by adding equipment/services in support of only the HCP. The county IT administrator must agree to the offered configuration.

The connection at the NCTN site should be handed off to the PHS's LAN as 10/100/1000 Mbps copper Ethernet. The vendor must provide at least 256 static and publicly routable IP addresses to each Service type 1 site or include arrangements to route any existing county or PHS-owned IP addresses.

Hardware requirements

All hardware must have redundant and hot swappable power supplies (i.e., two (2) or more power supplies with the devices continuing to function at full capacity if one (1) power supply completely fails). All hardware must have non-blocking architecture that allows for full throughput of at least 1,000 Mbps.

Service Level Agreements

The vendor is responsible for maintaining the connection from the site to A) the Internet connection (and Internet2 if proposed), B) the key datacenters, C) the county network, D) the other NCTN sites in a functional state, free of any interruption of service at least **99.99%** of the time, measured monthly, quarterly, and annually. The connection speeds of multiple connections, if any, may be combined to reach the required connection capacity stated above.

The vendor is responsible for responding to any interruption of service within four (4) hours, 13x5 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for priority restoration of service.

b) Service type 2 – for PHSs operating as a Multi-County Health group

Supported site description

Some counties in NC have combined public health operations into multi-county public health groups. These groups provide network facilities, ISP services, and technical support on the group administrated network. These networks are usually land-based facilities; designed in a star configuration (WAN) with one PHS acting as the central point of access. The vendor will support both the WAN, network facilities, and ISP services. In addition to the PHS having the capability to directly communicate with other consortium members in a cost sharing arrangement; they also receive valuable technical support thru the group. These sites are listed as requiring a Service Type 2 in the site list along with location/contact for the location/person currently acting as the network administrator.

Connection

For service type 2, the connection from each HCP site to the central switch must be capable of sustained bidirectional throughput of at least ten (10) Mbps .

The connections from the central switch (or a vendor-supplied switch connected to the central switch) -- to the key datacenters, to other NCTN sites, to the commercial Internet port, (and to Internet2 if proposed.) must be capable of sustained bidirectional throughput of 5 Mbps for each HCP site (e.g. if a service type 2 configuration has four sites then the bandwidth from the central switch to these other nodes would equal 20 Mbps).

The connection at the site should be handed off to the HCP's network as 10/100/1000 Mbps copper Ethernet. In most cases the Service type 2 network will have one centralized core location with circuits connected (WAN) to the individual PHC sites which they serve. These 10 Mbps WAN circuits must be included in the design and cost elements. The vendor must provide at least 128 static and publicly routable IP addresses to each Service Type 2 site or include arrangements to route any existing HCP-owned IP addresses.

Hardware requirements

All hardware must have redundant and hot swappable power supplies (i.e., two (2) or more power supplies with the devices continuing to function at full capacity if one (1) power supply completely fails). All hardware must have non-blocking architecture that allows for full throughput of at least 100 Mbps.

Service Level Agreements

The vendor is responsible for maintaining the connection in an up and reliable state, free of any interruption of service at least **99.99%** of the time, measured monthly, quarterly, and annually. The connection speeds of multiple connections, if any, may be combined to reach the required connection capacity stated above.

The vendor is responsible for responding to any interruption of service within four (4) hours, 13x5x365 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restorable of service.

c) Service type 3 –for First Responder sites

Supported site Description

Most PHS sites and some clinics operate as “First Responder” sites during a community disaster. They are required to continue complete operations in the immediate aftermath of a disaster and even during a disaster if feasible. The sites would generally have back-up power resources, facilities capable of withstanding certain disasters. The disasters envisioned must include hurricanes, ice storms, tornados, floods, forest fires and epidemics. For epidemics, consideration must be given to continuing network operations despite the loss of network support personnel (e.g. redundant trained personnel). The service type 3 designation is one that is given to sites that also have other service type designations (e.g. a typical PHS site would have a service type 3 and 1 or 2). The intention of adding service type 3 to these sites is to specify that their network connections must continue to operate under these disaster conditions.

Connection

The connection between the First Responder site and the core switches for the NCTN must be capable of sustained bidirectional throughput in a disaster that is required based on the site’s other service type designations (e.g. 10 Mbps for service type 1). The routing and addressing requirements for a First Responder site are also inherited from its other service type designations.

Site connectivity physical redundancy should be proposed where the site’s location and circumstances provide the capability of effectively providing redundant entry points to the facility, diverse routes to the site, and the appropriate network hardware needed to manage the redundant transmission facilities. The facilities must have high probability of remaining in operation during and after various community disasters including hurricanes, ice storms, tornados, floods, and epidemics. The vendor may propose using different technologies for each redundant connection (e.g. satellite for one connection and a wired solution for the redundant connection). The vendor must document the way in which this “hardening” requirement is met when offering the service to the site and the NCTN Administrator. Note that non-terrestrial services (e.g. satellite) may be proposed to support the hardening needed for First Responder sites.

Service Level Agreements

The vendor is responsible for maintaining the connection in an up and reliable state, free of any interruption of service at least **99.999%** of the time, measured monthly, quarterly, and annually. The SLA will include specific language about operational support during and after a disaster.

The vendor is responsible for responding to any interruption of service within four (4) hours, 13x5 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restorable of service.

d) Service type 4 – Individual PHS's or other sites

Supported site Description

Many individual PHS site(s) have and seek broadband services that are not connected to other private networks (e.g. not directly connected to the county network) Service type 4 is meant to support these PHS types. This service may also be used to serve non-PHS sites.

Connection

The connection between the PHS site and the core switches for the NCTN must be capable of sustained bidirectional throughput of at least ten (10) Mbps. The connection should be handed off to the HCP's network as 10/100/1000 Mbps copper Ethernet. The vendor must provide at least sixteen (16) static and publicly routable IP addresses to each Service type 4 site or include arrangements to route any existing HCP-owned IP addresses.

Hardware requirements

All hardware must have non-blocking architecture that allows for full throughput of at least 100 Mbps.

Service Level Agreements

The vendor is responsible for maintaining the connection in an up and reliable state, free of any interruption of service at least **99.99%** of the time, measured monthly, quarterly, and annually.

The vendor is responsible for responding to any interruption of service within four (4) hours, 13x5 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restorable of service.

e) Service type 5 – Individual FCs (Free clinics)

Supported site Description

A Free Clinic is a private, nonprofit, community-based organization that provides medical care at little or no charge to low-income, uninsured and underinsured persons through the use of volunteer health care professionals and partnerships with other health providers. No two Free Clinics are alike. They are custom-designed by communities to meet identified health care needs using the community's unique health care assets and resources. Free Clinics are governed by volunteer Boards of Directors representing a broad cross-section of the community. Free Clinics are private, nonprofit organizations supported primarily by cash and in-kind contributions from the private sector. **Most free clinics have and seek broadband connections that are not attached to other existing private networks.** Service type 5 is the service designed to support these sites.

Connection

The connection between the FC site and the core switches for the NCTN must be capable of sustained bidirectional throughput of at least five (5) Mbps. The connection should be handed off to the HCP's network as 10/100/1000 Mbps. The vendor must provide at least sixteen (16) static and publicly routable IP addresses to each Service type 5 site or include arrangements to route any existing HCP-owned IP addresses.

Hardware requirements

All hardware must have non-blocking architecture that allows for full throughput of at least 10 Mbps.

Service Level Agreements

The vendor is responsible for maintaining the connection in an up and reliable state, free of any interruption of service at least **99.99%** of the time, measured monthly, quarterly, and annually.

The vendor is responsible for responding to any interruption of service within four (4) hours, 13x5x365 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restorable of service.

(NOTE: Service type 6 and service type 7 are intentionally absent.)

f) Service type 8 – increments of throughput

Supported site Description

This service type is designed to support all sites by providing a way to add bandwidth to a site's capability at a predetermined cost. The service is to add an additional 10 Mbps from the site to the NCTN core and an additional 5 Mbps within the core and to key datacenters. A site may choose to apply service type 8 at the predetermined cost for up to 10 times. (e.g. A site that starts out at 10 Mbps can grow to 100Mbps by adding service type 8 9 times.)

Connection

The NCTN connection from the PHS site to the NCTN core must be capable of sustained bidirectional throughput of at least ten (10) Mbps more than its current connection.

The connections from the core - to the key datacenters, to other NCTN sites, to the commercial Internet port, (and to Internet2 if proposed) must be capable of sustained bidirectional throughput of an additional 5 Mbps for each HCP site. The vendor may propose to accomplish this by either upgrading existing equipment and services or by adding equipment/services in support of only the HCP.

The connection at the NCTN site should be handed off to the site's LAN as 10/100/1000 Mbps copper Ethernet.

Hardware requirements

The hardware requirements are to be inherited from the other service types that this site uses.

Service Level Agreements

The SLA requirements are to be inherited from the other service types that this site uses.

g) Service Type 9 - County Connector Service

Supported site Description

Many of the public health agencies serviced under this contract are a part of (or associated with) county governments. Most county governments have existing broadband networks. In cases where the public health agency site(s) in a county obtains NCTN services that are distinct from the county's network, there may be interest in providing a private (i.e. non-Internet or Internet2) connection between the NCTN site(s) to the county network. This Service Type 9 provides this sort of connection.

Connection

The NCTN connection from the PHS site to the county network must be capable of sustained bidirectional throughput of at least ten (10) Mbps.

The connection at the NCTN site and the county network should be handed off to the site's LAN as 10/100/1000 Mbps copper Ethernet.

Hardware requirements

The hardware requirements are to be inherited from the other service types that this site uses.

Service Level Agreements

The SLA requirements are to be inherited from the other service types that this site uses.

h) Service Type 10 - Private Connection Only

Supported site Description

Some NCTN subscribers will want a broadband service that supports data transmission across the NCTN's private network but does not directly provide for transmission across the Internet or Internet2. For example, some larger facilities may already have an Internet connection and not want to have (and pay for) an additional connection via the NCTN. For a given site, Service Type 10 is always to be used in combination with other service types that specify the bandwidth and other features of the combined service. The addition of service type 10 causes the service to exclude Internet and Internet2 access through this connection to the NCTN (though the site with service type 10 may use data flow to another NCTN site as part of means to reach the Internet and/or Internet2 through that NCTN site's Internet/Internet2 service or through independently provided Internet services).

Connection

Connection specifics are inherited from the other services that are combined with service type 10 at a given site.

Hardware requirements

The hardware requirements are to be inherited from the other service types that this site uses.

Service Level Agreements

The SLA requirements are to be inherited from the other service types that this site uses.

i) Service Type 11 - Fiber only

Supported site/service Description

Some NCTN subscribers will want access to fiber on which the site will operate its own opto-electronics to achieve a broadband service. A given request for this “dark fiber” service will contain the specifics of the number and type of strands, the path requested including the nominal “length” of the path. While pricing is up to the vendor, as one example, pricing may be based on maximum recurring costs per unit of length, non-recurring charges, costs to install, and costs per splice. Note that maximum standard pricing for this service must be stated in a way that applies to all instances of the implementation of this service.

Connection

The required connection points will be provided with each Service Type 11 request.

Hardware requirements

Industry standard fiber types (e.g. single mode, multi-mode) shall be offered

Service Level Agreements

The vendor is responsible for maintaining the connection (i.e. the fiber itself) in an up and reliable state, free of any interruption of service at least **99.99%** of the time, measured monthly, quarterly, and annually. Maintenance of the customer-provided opto-electronics will be the responsibility of site management but will be accommodated (e.g. physical access when needed) by the vendor.

The vendor is responsible for responding to any interruption of service related to the fiber itself within four (4) hours, 13x5x365 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All qualified connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restorable of service.

j) Service Type 12- Point-to-point

Supported site/service Description

Some NCTN subscribers will want a broadband service that supports data transmission only from one site on the NCTN to another site on the NCTN. As an example, a larger subscriber might want to build a hub and spoke arrangement with a larger full NCTN connection at the hub and service type 12's between the hub and each spoke.

For a given site, Service Type 12 is always to be used in combination with other service types that specify the bandwidth and other features of the combined service. Regardless of what the features are of other service types combined with service type 12, the transmission path for an instance of a service type 12 is only required to provide for movement of data between the specified endpoints. The purpose in providing such a service is that the cost of a point-to-point service of this type may be less than a full NCTN connection. Note that nothing in the definition of this service is meant to require the vendor to provide the point-to-point service across any particular physical path.

Connection

Connection specifics are inherited from the other services that are combined with service type 12 at a given site.

Hardware requirements

The hardware requirements are to be inherited from the other service types that this site uses.

Service Level Agreements

The SLA requirements are to be inherited from the other service types that this site uses.

VII. Site Type – H : Technical Requirements for the Backbone for Type “H” Sites.

The NCTN-EX site type H sites have similar technical requirements to the existing NCTN-H site types. The text below defines those requirements.

The backbone is defined as any network segment that supports the traffic from more than one site.

The vendor's proposal must detail how the proposed network will meet all of the requirements of this Section. Responses should include a network map, both physical and logical, and the manufacturer's hardware

specification/data sheet for each proposed model of equipment. These items may be provided as attachments to the proposal.

A. Requirements for the Backbone

1. Must be resistant to failure.
 - a. It is highly desirable that all backbone segments be redundant.
 - b. Any backbone network segment that supports more than twenty (20) sites in any Service Type must have redundant and diverse paths and interconnecting equipment.
 - c. All single points of failure that could affect more than one site, if any, must be identified and eliminated if possible.
2. The vendor will be responsible for maintaining the backbone in an up and reliable state, free of any interruption of service, at least **99.99%** of the time, measured monthly, quarterly, and annually.
3. Must follow the Open Systems Interconnection (OSI) model:
 - a. Layer three interfaces must be Internet Protocol version four (IPv4) with a capability to support version six (IPv6).
 - b. Layer two interfaces at each site will be Ethernet, meeting Metro Ethernet standards.
 - c. Layer one must be fiber optic cable, meeting the performance requirements specified.
4. Due to the nature of the health care industry, the proposed solution should be adaptive and scalable to meet the changing landscape.
5. At no point on the network may the subscription rate be more than two to one (2 to 1). That is, each link that carries traffic for two or more nodes must be at least half as large as the sum of the nodes that may contribute traffic to the shared link.
6. While vendors must describe the design of the NCTN-EX in their proposals in accordance with the services they shall deliver, it is conceivable that this network would utilize core/router configurations in the major metro areas across the state with each core connected to a facility within the state (e.g. redundant core routers).
7. The network must have reliable connection(s) to the commercial Internet only for transmission of traffic to non-NCTN-EX locations.
8. The centralized core must route all traffic within North Carolina (Peering) and only route the commercial IP traffic out/in of North Carolina. (Note: There is a single site in metropolitan Charlotte that is in SC.)
9. More peering with ISP's within the state will be an advantage to the health community and therefore will be favorably considered in the design, additionally, it's adaptability to current and future technologies as well as its ability to eliminate much of the overhead associated with large scale networks are required features.
10. Vendors must list in their response to this RFP what relevant standards the solution utilizes:
 - a. All equipment, transmission methods, and systems must be "industry-standard." Industry-standard is defined as the most current version of relevant standard(s) set by an American National Standards Organization (SDO), such as the Institute of Electrical and Electronics Engineers (IEEE), Telecommunications Industry Association (TIA) or Electronic Industries Alliance (EIA).
11. Technical, physical and administrative security:
 - a. The vendor must describe in its proposal the technical, physical and administrative security measures employed in providing the services.
 - b. The vendor allows the use of standard encryption and data integrity protocols in support of subscribers needs to comply with:
 - i. the HIPAA Security Regulation
 - ii. the security requirements of Business Associates in HIPAA (This does not imply that the vendor is a Business Associate of any of the NCTN sites that are Covered Entities under HIPAA.)
 - iii. in the American Recovery and Reinvestment Act of 2009.
 - iv. Credit Card Protection Act

12. The vendor will be responsible for monitoring, maintaining, updating/patching, repairing/replacing failed and failing components and ensuring that the equipment continues to function for the duration of the Contract.
 - a. Security related patches must be applied within 30 days of stable release from the manufacturer.
 - b. Non-security related patches must be applied within 60 days of stable release from the manufacture.
 - c. The vendor assumes replacement responsibility (with the right to bill the site at cost) for site-based equipment that is damaged, stolen, etc; beyond the vendor's control. Subscribers will be held responsible in cases of abuse or negligence in housing site-based equipment.
13. Equipment and Hardware:
 - a. All equipment must have a minimum documented mean time between failures (MTBF) of 150,000 hours.
 - b. All hardware must be manufactured by a manufacturer with at least 5 years of experience.
 - c. Provide, as an attachment to the response, manufacturer specification/data sheets of all hardware that is proposed.
14. All core links must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restoration of service.

B. Connection to the Internet

Requirements for the connection to the Internet:

1. Due to its semi-private network requirements, the network must have at least two (2) Internet gateways.
 - a. These gateways must be at least 50 miles apart from each other and any other Internet gateway.
 - b. Vendor must provide at least two (2) Domain Name System (DNS) servers.
 - c. The DNS servers must be at least 50 miles apart.
 - d. The Internet gateways and the DNS servers may be co-located.
 - e. The subscription ratio for the Internet connections may be no more than 2-to-1, i.e. the internet connection needs to be able to pass half of the maximum traffic generated to and from the subscribers.

VIII. Site Type – H : Technical Requirements for Site Connections to the NCTN-EX Backbone and Services for site type H sites.

This section describes the services desired by the individual hospitals for the connection to the NCTN-EX for network.

This section contains a description of several types of network services. Each type is called a Service Type. Each Service Type contains a description of the network requirements for sites designated as being in need of that Service Type. Some sites are described as requiring 2 or more Service Types; in such cases the total service requirements are the combined requirements of all the Service Types.

The project has gathered key information about each site via the registration process. The sites have been assigned an initial service type(s) in preparation for this RFP (See Appendix E)

Vendors may propose additional Service Types for use on the Standard Pricing Schedule.

The vendor will propose services in accordance with the needs specified for each site. Each is described in detail further below in this Section.

A. Common Requirements that Apply to Service Types 10 Mbps, 100 Mbps, 200 Mbps, 500 Mbps, 1 GBps, 2 GBps

Service Types 100 Mbps through 2GBps have the following common requirements:

1. Supported Site Description

Health care systems and independent hospitals have either in-house or outsourced IT staffs and established networks and connections to the internet. Most independent hospitals and some health systems will be using the NCTN connection to replace a current connection to the internet or to be an additional backup/Business Continuity/Disaster Recovery (BC/DR) connection. Health systems tend to have robust networks with significant intra-health system connections. Some health systems may connect their individual hospitals to NCTN to supplant or preclude an intra-health system connection.

The sites generally be hospitals or data centers. In some cases the site may be other buildings off the hospital campus such as an administrative building or surgical or oncology center.

2. Connection

- a. Each connection is required to support 3 different types of network communication/traffic:
 - i. Intra-network traffic (NCTN-EX site to NCTN-EX site)
 - ii. Inter-NCTN network traffic (meaning NCTN-EX network to NCTN-PH and NCTN-H network)
 - iii. Access to the commercial Internet and Internet2.
- b. Intra-network traffic is the baseline traffic and must be available at the full capacity of the connection as listed in each service type description.
- c. Specific performance requirements for intra-NCTN connections are:
 - i. Bandwidth: As specified by the Service Type for the site
 - ii. Latency: < 60ms; (between site and core routers/switches)
 - iii. Stability (video): jitter: good 0 – 20 ms, acceptable 20 – 50ms;
 - iv. Packet loss good 0 – 0.5%, acceptable 0.5 – 1.5%
 - v. Minimize the number of hops to the commercial internet
- d. Transport:
 - i. All transport facilities are to be fully provisioned from end-point to core or central core location.
 - ii. Physical facility installation to the demarcation point at each site, where needed, must be included in the bid.
 - iii. Transport is to be determined by vendor, but must be transparent to layer-3 and higher protocols.
- e. All sites on the network must support full interoperable IP services/ports and advanced services, including:
 - i. H.323 audio and video conferencing
 - ii. Large (100MB+) file transfers
 - iii. Web-based audio and video streaming
 - iv. ASP model business applications
 - v. Voice over IP (VoIP)
 - vi. Providing complete network convergence throughout the infrastructure.
- f. The connection between the hospital and the core switches for the NCTN-EX:
 - i. Must have a redundant diverse routing from the core switch to the facility, with separate approaches to the hospital.
 - ii. Note: Facilities with higher instantaneous data transfer rates may be needed to provide the required throughput.
 - iii. The connection should be handed off to the HCP's network as 10/100/1000 Mbps [copper Ethernet](#).

- iv. [The vendor must provide at least 256 static and publicly routable IP addresses to each site or include arrangements to route any existing HCP-owned IP addresses.](#)

3. Hardware Requirements

- a. Equipment and Hardware:
 - i. All equipment must have a minimum documented mean time between failures (MTBF) of 150,000 hours.
 - ii. All hardware must be manufactured by a manufacturer with at least 5 years of experience.
 - iii. Provide, as an attachment to the response, manufacturer specification/data sheets of all hardware that is proposed.
- b. All hardware must have redundant and hot swappable power supplies (i.e. 2 or more power supplies with the devices continuing to function at full capacity if 1 power supply completely fails).
- c. All hardware must have non-blocking architecture that allows for full throughput of at least the specified number of Mbps for the Service Type.

4. Service Level Agreements

- a. The vendor is responsible for maintaining the connection in an up and reliable state, free of any interruption of service at least **99.9%** of the time, measured monthly, quarterly, and annually.
 - a. For a few sites attaining service continuity of 99.9% may be problematic.
 - i. If a site needs 99.9% in the last mile then the site may have to put in a second line at additional cost (in order to get to 99.9% continuity).
 - ii. The vendor should clearly state if a site has deficiencies that make 99.9% problematic, such as lack of equipment, clean power, etc.
 - b. Single points of failure that affect only one site must meet the reliability requirements noted above.
 - c. The connection speeds of multiple connections, if any, may be combined to reach the required connection capacity stated in each Service Type.
 - d. Response times:
 - 1. For responding to any interruption of service within 4 hours, 24x7x365.
 - 2. For responding to all other issues within 8 hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays)
 - 3. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue.
 - 4. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.
 - e. All connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restoration of service.

B. Service Type 10 Mbps

1. Connection

The connection for Service Type 10 Mbps between the hospital and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput of at least 10 Mbps.

C. Service Type 100 Mbps

1. Connection

The connection for Service Type 100 Mbps between the hospital and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput of at least 100 Mbps.

D. Service Type 200 Mbps**1. Connection**

The connection for Service Type 200 Mbps between the hospital and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput of at least 200 Mbps.

E. Service Type 500 Mbps**1. Connection**

The connection for Service Type 500 Mbps between the hospital and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput of at least 500 Mbps.

F. Service Type 1 GBps**1. Connection**

The connection for Service Type 1 GBps between the hospital and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput of at least 1 GBps.

G. Service Type 2 GBps**1. Connection**

The connection for Service Type 2 GBps between the hospital and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput of at least 2 GBps.

H. Service Type INC (Increments of Throughput)**1. Supported Site Description**

Service Type INC is designed to support all sites by providing a way to add bandwidth to a site's capability at a predetermined cost. The service is to add an additional 100 Mbps from the site thru out the network in accordance with the service type and backbone requirements to the NCTN-EX core and provide any upgrades to the core needed to support the additional bandwidth while maintaining the required traffic subscription rates documented above. A site may choose to apply Service Type INC at the predetermined cost for up to 10 times. (e.g. diff A site that starts out at 100 Mbps can grow to 1 GB by adding service type 8 9 times.)

2. Service Requirement

Each instance of the use of this Service Type requires the vendor to support an additional 100Mbps bi-directional throughput for this site along with attendant changes in core network capacity.

I. Service Type FR (First Responder)**1. Supported Service Description**

Virtually all hospitals operate as "first responders" sites during a community disaster. They are required to continue complete operations in the immediate aftermath of a disaster and during a disaster if feasible. The sites would generally have back-up power resources and facilities capable of withstanding certain disasters. The facilities must have high probability of remaining in operation during and after hurricanes, ice storms, tornados, floods, forest fires, earthquakes and epidemics. For epidemics, consideration must be given to continuing network operations despite the loss of network support personnel (e.g. redundant trained personnel).

The intention of adding Service Type FR to a site is to specify that this NCTN site connection must continue to operate under these disaster conditions.

The Service Type FR designation is given to sites that also have at least one other Service Type (designating throughput).

2. Connection

The connection between the First Responder site and the core switches for the NCTN-EX must be capable of sustained bidirectional throughput in a disaster that is required based on the site's other service type designations (e.g. 100 Mbps for service type 100Mbps). The routing and addressing requirements for a First Responder site are also inherited from its other service type designations.

We expect the vendor to plan for high reliability during and in aftermath of disaster.

3. Service Level Agreement/Maintain the Service

1. The vendor will be responsible for maintaining the service in an up and reliable state, free of any interruption of service at least 99.9% during and in the aftermath of a disaster of the type described above.
2. The vendor will make their best efforts to be operational during and after a disaster.

4. Present Your Plan for Operations During and After a Disaster

Describe your plan for being operational in and after a disaster.

Below we are listing some likely features that will support high reliability. Your plan may have other or additional features and innovations that are not listed.

Features Supporting High Reliability During and After a Disaster

- a. Site connectivity physical redundancy should be proposed where the site's location and circumstances provide the capability of effectively providing:
 1. redundant entry points to the facility
 2. diverse routes to the site ; from different CO's (Or Communications switches).
 3. Both routes are not required to be HOT and operating at the same time but must be available when needed with a full test plan to insure this availability.
 4. appropriate network hardware needed to manage the redundant transmission facilities.
 5. The vendor may propose using different technologies for each redundant connection (e.g. satellite for one connection and a wired solution for the redundant connection).
- b. The vendor must document the way in which this "hardening" requirement is met when offering the service to the site and the NCTN-H Administrator. In some cases the vendor may need to propose acceptable route/equipment diversity from other connections and pay extra for it so that a line will be up independent of another line.
- c. Vendor should take into consideration other connections a hospital site has and is retaining when considering redundancy and diversity.
- d. Proposals should consider the physical robustness of the network and the limits on ability to provide service personnel under these circumstances.
- e. Use of highly independent means of connectivity (e.g. satellite-based services) is encouraged in circumstances where they may best support the need for high reliability.
- f. The site requires first repair response from communication providers (TSP).

J. Service Type Filter

1. Supported Site Description

We suspect that some sites today outsource filtering to their current provider and do not wish to provide this service in-house. This Service Type Filter is to provide filtering for the site.

2. Service Requirement

- a. The vendor would support filtering of traffic based on policies set by the site administrator (e.g. to exclude unwanted Internet traffic from the site or limit access to classes of web sites by site staff).
- b. These policies may change from time to time and the filtering mechanism must support this change.

K. Service Type CENTRAL**1. Supported Site Description**

The FCC requires that we list the Service Types that the hospital locations will receive. Service Type CENTRAL designates that a hospital location will be using services that are provided from a central source, such as the flagship hospital or a separate centralized data center. This information is primarily for the FCC and not the bidding vendors.

The Service Type CENTRAL designation is given to sites that also have at least one other Service Type (designating throughput). The additional Service Types are those of the central service site or data center site.

L. Service Type 10 - Private Connection Only**Supported site/service Description**

Some NCTN subscribers will want a broadband service that supports data transmission across the NCTN's private network but does not directly provide for transmission across the Internet or Internet2. For example, some larger facilities may already have an Internet connection and not want to have (and pay for) an additional connection via the NCTN. For a given site, Service Type 10 is always to be used in combination with other service types that specify the bandwidth and other features of the combined service. The addition of service type 10 causes the service to exclude Internet and Internet2 access through this connection to the NCTN (though the site with service type 10 may use data flow to another NCTN site as part of means to reach the Internet and/or Internet2 through that NCTN site's Internet/Internet2 service or through independently provided Internet services).

Connection

Connection specifics are inherited from the other services that are combined with service type 10 at a given site.

Hardware requirements

The hardware requirements are to be inherited from the other service types that this site uses.

Service Level Agreements

The SLA requirements are to be inherited from the other service types that this site uses.

M. Service Type 11 - Fiber only

Supported site/service Description

Some NCTN subscribers will want access to fiber on which the site will operate its own opto-electronics to achieve a broadband service. A given request for this “dark fiber” service will contain the specifics of the number and type of strands, the path requested including the nominal “length” of the path. While pricing is up to the vendor, as one example, pricing may be based on maximum recurring costs per unit of length, non-recurring charges, costs to install, and costs per splice. Note that maximum standard pricing for this service must be stated in a way that applies to all instances of the implementation of this service.

Connection

The required connection points will be provided with each Service Type 11 request.

Hardware requirements

Industry standard fiber types (e.g. single mode, multi-mode) shall be offered

Service Level Agreements

The vendor is responsible for maintaining the connection (i.e. the fiber itself) in an up and reliable state, free of any interruption of service at least **99.99%** of the time, measured monthly, quarterly, and annually. Maintenance of the customer-provided opto-electronics will be the responsibility of site management but will be accommodated (e.g. physical access when needed) by the vendor.

The vendor is responsible for responding to any interruption of service related to the fiber itself within four (4) hours, 13x5x365 (8 a.m. to 9 p.m. local time, five days a week, Monday through Friday) and within eight (8) hours, 8x5 (8 a.m. to 9 p.m. local time, Monday through Friday, excluding Federal holidays) for all other issues. Once on site or actively working on the issue, the vendor must work continuously through resolution of the service issue. The vendor is responsible for maintaining a Mean Time to Repair of four (4) hours, to be measured monthly, quarterly, and annually.

All qualified connections must be registered and remain registered for the duration of the Contract with the Telecommunications Service Priority (TSP) program; if not a transport circuit regulated by the FCC then vendor must provide the equal service for restorable of service.

N. Service Type 12- Point-to-point

Supported site/service Description

Some NCTN subscribers will want a broadband service that supports data transmission only from one site on the NCTN to another site on the NCTN. As an example, a larger subscriber might want to build a hub and spoke arrangement with a larger full NCTN connection at the hub and service type 12's between the hub and each spoke.

For a given site, Service Type 12 is always to be used in combination with other service types that specify the bandwidth and other features of the combined service. Regardless of what the features are of other service types combined with service type 12, the transmission path for an instance of a service type 12 is only required to provide for movement of data between the specified endpoints. The purpose in providing such a service is that the cost of a point-to-point service of this type may be less than a full NCTN connection. Note that nothing in the definition of this service is meant to require the vendor to provide the point-to-point service across any particular physical path.

Connection

Connection specifics are inherited from the other services that are combined with service type 12 at a given site.

Hardware requirements

The hardware requirements are to be inherited from the other service types that this site uses.

Service Level Agreements

The SLA requirements are to be inherited from the other service types that this site uses.

IX. Site Type H - Support Requirements

There are 3 models of internal support for the sites:

- There is support within the individual hospital for the site. This is the model of most of the independent hospitals.
- Support is provided by a centralized group in the health system. This is the model in a few of the health systems.
- A mixture of the 2—centralized and decentralized. This is the model in the rest of the health systems.

For purposes of this support section we will call the entity the vendor works with the health care provider (HCP) whether it represents decentralized or centralized support. Note this means that the vendor may be working with one entity or HCP for a group of sites.

A. Response/Network Operations Center

1. The vendor must manage the network. They must maintain a network operations center with the following minimum requirements: :

- a. Staffed during business hours (8am-9pm Monday through Friday)
- b. Support available 24 hours per day, 7 days a week, 365 days a year
- c. With a single telephone number to report network outages
- d. All calls must be answered/connected to a live network technician within ten (10) minutes.
- e. At its option, the subscriber may leave a voice mail message.
- f. Vendor support personnel must respond to any voice mail messages within one (1) hour of the message being left by the HCP.
- g. A web/text based reporting and status checking process in addition to the telephone number is desired.

B. Monitoring and Reporting

Many points of process in this RFP and in the Contract require communication of status and activity related to servicing the sites. We would prefer a process that depended on a web site with appropriate access by each party (e.g. vendor, NCTN Administrator, site manager, sub-contractor, auditor) to both provide information and obtain information related to NCTN construction and use. Proposals that include this feature will be preferred and will be part of the formal evaluation.

CHA shall monitor the operations of the network in a way that makes the achievement of the requirements of service (or not) transparent in a timely way to CHA, the vendor, the site contacts, and others. The vendor shall support this objective. Details of this support will be negotiated in good faith during the life of the project. At minimum, in furtherance of this objective, the vendor shall support the following:

1. The vendor must maintain a network operations center that:
 - a. Utilizes an automated system that actively monitors all network sites, traffic and circuits and alerts staff of any unusual or adverse events, traffic, or outages.
 - b. Alerts vendor staff to outages and problems 24/7/365
2. The vendor must provide a detailed description of automated systems including:
 - i. types of items/traffic monitored
 - ii. reports generated
 - iii. how alerts/notices are handled and escalated.
3. The vendor must monitor and report on:
 - a. The utilization of the local access link at each site
 - b. Report on a quarterly basis to the HCP site contact and the NCTN-H Administrator
4. The vendor must provide detailed reports to each HCP and the NCTN-H Administrator including but not limited to the following information:
 - a. Monthly, quarterly, yearly:
 - i. a list of interruptions of service (at each site), including dates, times, and durations
 - ii. the response time for issues reported
 - iii. mean-time-to-repair
 - iv. total usage summary by hour, day, and week
 - v. usage by network type (intra-network traffic, i.e., participating HCP to participating HCP; access to the Internet)
 - vi. usage for the top 25 sources and destinations
 - vii. usage by hour, day, and week by protocol/function (http, SSL, SSH, Telnet, FTP, etc.,) is desirable but not required
 - viii. access to log files
 - ix. indicators as to whether the service requirements for each site have been met during the reporting period or not and, if not, the nature of the short-fall in service.
 - b. Reports must be emailed to the HCP site contact at each site within 5 days of the end of the calendar month.

- c. The underlying data for the report must be available to the NCTN-H Administrator in a common machine-readable form (e.g. Excel spreadsheet, Access database).
5. The vendor will monitor and manage the network's performance and work with sites and the NCTN-H Administrator to make small changes as needed.
6. The vendor must track and log (maintain a database of) all interruptions of service.
 - a. NCTN-H Administrator and the HCPs must always have access to this log.
 - b. The NCTN Administrator and the HCPs reserve the right to independently track and log interruptions.
 - c. The vendor will work with the NCTN-H Administrator and the HCPs to ensure this option is available.

C. Problem Notification, Resolution Process and Escalation Process

1. The vendor must notify via voice communication, the HCP within thirty (30) minutes after determination that the customer's service is not available or is likely to fail.
2. The vendor must use a trouble ticket management system that:
 - a. identifies a trouble incident reported
 - b. type of trouble
 - c. time of trouble
 - d. time to resolution
 - e. generates monthly reports on trouble tickets
 - i. by site if needed
3. The vendor must provide a description of your automated trouble ticket system adequate to determine that it can support the requirement above.
4. The vendor must describe the problem escalation process.
5. The vendor shall collaborate with NCTN-H Administrator to develop detailed policies and practices for working with HCP sites for problem notification, resolution, and escalation procedures.

D. Maintenance

Maintenance that may or will cause an outage must be minimized.

1. The acceptable maintenance window for this network will be from 4:00 am to 12:00 pm (local time) on Sundays.
2. The vendor must provide notice of planned maintenance to the affected HCPs (e.g., on a Thursday prior to a Sunday's maintenance) and NCTN Administrator at least 30 days prior to the planned outage. The notice must include, at a minimum:
 - a. date and start time of the maintenance
 - b. anticipated duration
 - c. services and/or sites that will be affected
 - d. services and/or sites that might be affected
 - e. reason for the maintenance
 - f. any additional related information and links.
3. The vendor must provide a mechanism to hear a site's needs to change maintenance times for specific concerns. Describe this mechanism.
4. The vendor cannot take down both routes at the same time without specific written permission from the site.

E. Repair

1. The vendor must provide resources for repair, preferably locally across NC, including:
 - a. Repair facilities

- b. Staffing
- c. Spare parts inventory locations

X.Site Types H and PH - Additional Requirements

A. Service start-up

The startup of a service provided by the vendor must be done in collaboration with the site staff in a way that minimizes the disruption to the site's operations. Most of the sites are not in business 24X7. So, many service starts will likely happen after business hours. The switch –over process must be quickly reversible (i.e. return to the existing service) in case the new service does not pass its initial tests.

The start up process shall include a series of baseline throughput tests that demonstrate that the required throughput for the services type(s) is being met. This includes throughput tests to at least one other NCTN site, the key data centers, the Internet, and Internet2.. The site manager and the NCTN Administrator will receive copies of these test results (preferably via a web-based reporting tool) to be used with other acceptance criteria described below.

B. Training

The vendor must conduct a two-hour-minimum training and “hand-off” session with the site's IT personnel prior to service turn on; the live-interactive training may be provided over the web- with trainers in one location and trainees in another, The timing of the training must be coordinated with the site. CHA must have a confirmation from each site to ensure that the training has been provided *prior* to approving payment of the associated invoice. CHA will withhold approval until the required training has been conducted. Again, vendors should consider the use of a web site to collect and display the confirmations.

C. Ownership of Equipment

During the Contract term, all components supplied by the vendor to support the services will be owned by the vendor. This will include all building infrastructure, cabling, and passive and active electronics up to the demarcation point. At the end or termination of the Contract, the end-point equipment, and including routing/switching will become the property of the HCP. If an HCP ceases service prior to the end of the Contract, the equipment will remain the property of the vendor and may be removed from the site by the vendor at a mutually agreeable time.

D. Sustainability

The NCTN subscribers have an interest in assuring that the network is fiscally sustainable once RHCPP funding is not available. Arrangements with NCTN subscribers will contribute to the sustainability. Notably, 1) Each NCTN subscriber will agree to participate in creating a “transition plan” starting 24 months prior to RHCPP funding ends. 2) The NCTN program managers will seek to arrange for additional sources of funding during the life of the RHCPP funding.3) The service types are designed to assure that each site gets the optimal suite of network services without committing to network services whose full cost could not likely be borne without RHCPP funding (and the other measures above in place).

The vendor must agree to participate in a long-range cost management program in collaboration with the NCTN Administrator. The vendor will have the following obligations under this program:

- 1) Work with NCTN Administrator to keep long term costs consistent with realistic funding opportunities.
- 2) Participate in the forming of transition plans starting no later than 24 months before RHCPP funding ends.
- 3) In anticipation of the end of RHCPP funding, agree to offer subscribers individual contracts for their then current network services at costs not to exceed the total costs during the RHCPP funding.

The vendor may offer additional proposals designed to aid in the fiscal sustainability of the NCTN.

E. Subscription Agreement

Each NCTN subscriber shall agree to a subscription agreement. The agreement template is provided as in the Appendix.

The vendor must agree to participate as the NCTN-EX designer, implementer, and operator in a way that supports subscribers and CHA meeting their obligations and exercising their rights under this subscription agreement.

F. NCTN Management Succession Plan

The Cabarrus Health Alliance is the contracting party for the services under the contract pursuant to this RFP. In order to support a more robust and sustainable NCTN, the CHA and the subscribers will seek to change the contracting party to another party during the life of the contract. The new party will likely be a new public non-profit association of the subscribers, but may be an existing party.

Vendors must agree that this change of contracting party will be accepted as long as the other terms of the contract remain in force.

G. Audits

The vendor must agree to participate in any audits required by the CHA, as part of its obligations under the RHCPP, obligations under other Federal or State law, or as part of its responsibility to the NCTN subscribers. The vendor must agree that audit results may become public.

H. Work plan

The vendor must propose a work plan with milestones useful in tracking the implementation of services. The work plan must include a schedule that begins when the Contract is signed and ends when all of the services are functioning, the first invoicing cycle is complete, and the first round of quarterly reports are complete.

I. Excess Capacity

1. Avoiding misuse of RHCPP discounts in building excess capacity

The RHCPP program will not provide discounts for facilities beyond those used to service the discount-eligible health care providers who are part of the NCTN. This RFP does not envision the NCTN owning any facilities. So, opportunities to unintentionally misuse RHCPP discounts are expected to be minimal. Proposals that envision building network capacity beyond what is needed to service the NCTN subscribers must provide documentation of these excess capacities and demonstrate that the vendor is paying for the excess capacity. For example, if the proposal involves the vendor installing a 12-strand of fiber, only one of which is used by NCTN subscribers, the proposal must document that the NCTN is only asked to use RHCPP discounted funds for the use of that one fiber. The Standard Pricing Schedule should avoid significant one-time charges for services (e.g. installation charges) as one contribution to avoiding disallowed usage of RHCPP discounts.

2. Excess Capacity for Community Use

The RHCPP program will not provide discounts for facilities beyond those used to service discount-eligible health care providers. Nonetheless, the RHCPP allows for the bidding evaluation process to consider the provision of excess capacity to a community as a positive aspect of a proposal. There are significant limitations to the circumstances under which this provision of excess capacity can be considered; they are documented in FAQ #27 on the RHCPP web site at <http://www.fcc.gov/cgb/rural/rhcp.html#faq27>.

Proposals in response to this RFP are not required to provide excess capacity for community use. RFP responses including such a provision must provide the documentation required by the FCC in FAQ #27 in the proposal. The evaluation process has points set aside to be added to scores of any and all proposals that make attractive excess capacity provision proposals and are otherwise deemed to be the most cost-effective service or facility provider available.

For those who do choose to provide excess capacity provision proposals, consider the need for network services for ineligible entities with which public health and free clinics interact on a regular basis (e.g. private physician practices or for profit hospitals). These ineligible entities are likely to choose to obtain/upgrade broadband service over the next couple of years as the incentives for electronic health record systems use and health information exchange grows.

J. Invoicing Procedures

1. Invoicing Process Overview

The invoicing process is designed to be a sound but easy process for the sites. NCTN Administrator, the vendor and auditor. CHA will obtain all of the fees for NCTN usage once per month from all NCTN sites along with a subscription fee to cover program management activities. The last three months costs are collected from the subscribers at service initiation and used to pay for the subscriber portion of the service in the last three months of service. On a monthly basis,

- 1) The vendor will present an invoice for all services to CHA in a form that is usable for verifying that the invoiced services are the ones contracted for, for submission to USAC, and adequate for audit purposes. Note that we prefer the invoicing be done in electronic form in a way that verification is tractable. This will be part of the formal evaluation.
- 2) CHA will provide one check for ineligible amounts (approximately 15%) of the verified services each month and submit an attestation to USAC that it has done so.
- 3) CHA will request that USAC pay the other amounts (approximately 85%) to the vendor (Note the need for an FCC Service Provider Information Number (SPIN) to obtain payment) . USAC pays accepted invoices every two weeks.

2. Payment for Incurred costs only

The vendor will only be paid for incurred costs. Hardware will have to have been installed, tested, and formally accepted; installation will have to have been completed, tested, and formally accepted; and service will have to have been rendered *before* the vendor can invoice CHA for *any* hardware, installation, or service expenses, respectively. CHA will not process an invoice until all items subject to acceptance testing have been tested and accepted. Note that the vendor cannot charge for services provided before the Contract is in force for those services and any discounts (e.g. RHCPP/EHC) have been provided (via a Funding Commitment Letter); this is an FCC requirement.

3. Allocation of 100 Percent of Costs

The vendor must allocate *all* costs associated with the project—all nonrecurring (broadband network) infrastructure construction costs and recurring operating costs—to specific HCP participants in the RHCPP project. Any costs for items/services that support multiple participants (e.g., laying fiber optic cable, core routers, core transport services) must be allocated on a reasonable and demonstrable basis. Each site is uniquely identified by the combination of an

HCP identifier and a site id in the NCTN subscriber database. The vendor must use this identification in all invoicing transactions. Any cost that is not allocated to the health care network cannot be discounted with RHCPP funds and must not be invoiced.. For example, if only two strands of a new 48-strand fiber optic cable run support the health care network, then the vendor can charge only 2/48ths of the cost of the cable run to the project.

4. Participants Eligible and Ineligible for FCC Funding Assistance

The NCTN may allow non-RHCPP-eligible sites to have direct access to the NCTN. This option will be entertained for resources that are of importance to the NCTN subscribers but are not themselves RHCPP eligible. In these cases, the non-eligible sites will pay an amount equal to the full charge for the service type from the Standard Pricing Schedule directly to the vendor and will receive the same services as an eligible site.

Some of the configurations for sites using Service Types 1 and 2 will result in configurations in which some fair share of the services will be eligible for discounts and others will not. As noted above, CHA and the site management create a fair share proposal when the service is offered as part of deciding whether to accept service. In these “partially eligible” cases, the vendor will bill the ineligible portion of the services/goods directly to the party paying for this ineligible services. The fair share proposal will be subject to review and approval of the NCTN Administrator and may be subject to prior review by the FCC. Entities (i.e. HCPs) who use “fair share” arrangements will be liable for repayment for any part of the service that is discounted that the FCC later may determine is not eligible for discount under the RHCPP.

5. Network Cost Worksheet (NCW)

USAC mandates use of the Network Cost Worksheet (NCW) to process various one-time and recurring charges. The vendor will submit the invoice to CHA in a form that makes the completion of the NCW by CHA straight-forward.

6. Invoicing process detail

Below is the invoicing detail, the vendor and CHA may choose to alter the exact process by mutual consent.

a) Vendor Invoices CHA

At the beginning of each month, the vendor will provide CHA with an electronic invoice for all of the services and goods eligible to be paid under the Contract from the previous month. Every cost will be allocated to a specific site identified by the combination of the HCP id and the site id).

CHA will verify that the charges are correct or advise the vendor otherwise and resolve the difference in cooperation with the vendor.

CHA will issue a payment for 15% of the invoice to the vendor.

CHA will forward an attestation of the payment along with other required elements to USAC along with a request that USAC pay the other 85% of the invoice to the vendor. USAC routinely pays acceptable invoices every two weeks.

This process is designed so that payments to the vendor will be paid within 30 days after invoicing.

b) Invoice Requirements

At a minimum, every vendor invoice submitted to CHA must be in electronic form and contain the following data elements:

- Vendor invoice number
- Vendor invoice date
- Vendor Billing Account Number (BAN)
- Total invoice amount
- **Non-recurring costs.** Each and every identifiable one-time (non-recurring) cost to construct the NCTN must be allocated to one or more HCPs and described using the following fields:
 - Identification of the participating HCP that will receive the equipment or to whom the network construction costs are being allocated and the associated site id. These identifiers are supplied in the NCTN Subscriber Database.
 - General description of the item. The description of each hardware item must include the manufacturer and model number. If any costs are allocated among two or more HCPs, briefly explain why.
 - Equipment or service category (choose one The description must match one of the acceptable Component descriptions in the USAC list of eligible services. See table of choices in **Appendix F**)
 - Optional expanded description/details/comments
 - The number of items (e.g., two identical routers installed at the same site)
 - The cost per item
 - The total cost for this line item, i.e., the “number of items” times “the cost per item”
- **Recurring costs.** Monthly (recurring) service costs must be described using the following six fields:
 - Identification of the participating HCP (using the HCP nomenclature) and site.
 - The month and year of service
 - Equipment or service category (choose one The description must match one of the acceptable Component descriptions in the USAC list of eligible services. See table of choices in **Appendix F**)
 - The monthly service cost for access to the health care network
 - The total monthly service cost

Note that details of the invoicing process may be renegotiated by the parties from time to time in order to make invoicing more effective or efficient and/or meet FCC requirements.

Site Types H and PH - Proposal Submission Requirements

This section of the RFP describes the overall requirements and options for providing a proposal in response to this RFP for consideration by CHA. Only proposals meeting the requirements given here will be considered for contracting.

K. Proposing Party

The proposing party must be one entity. As noted above, this party may be the lead party (an integrator) that would enter into the Contract. This lead party may (likely will) have partners and sub-contractors who will contribute to executing a Contract.

L. Proposal Size and Format

The proposal should not exceed 175 pages of text, exclusive of attachments and appendices. The font should be clearly readable and no less than Times New Roman 10 point. All pages, exclusive of attachments and appendices, should be in 8.5” x 11” page format and have at least one (1) inch margins. The proposal content is described below.

M. RFP Process Calendar

All dates are offsets of the “Allowable Contract Date” (ACD) posted on the USAC website. The ACD is approximately the date the RFP is posted on USAC’s website plus 28 days. If any date falls on a weekend or federal holiday, the event will be moved to the next business day. Once an ACD has been set by USAC, an updated calendar with actual dates will be posted on <http://nctelehealthnetwork.com>.

DATE - NUMBER OF		
CALENDAR DAYS		EVENT
ACD ~ -14		Letter of intent to bid deadline (required)
ACD ~ -5		Last day to submit questions in writing
ACD ~ +0		Proposals due from vendors
ACD ~ + 10		Oral presentations/demonstrations by invitation (if applicable)
ACD ~ + 25		Contract negotiations begin
ACD ~ + 30		Contract negotiations end
ACD ~ + 35		Notification of intent to award
ACD ~ + 40		Contract start date

~ = approximately

CHA reserves the right to alter the RFP Process Calendar beyond the ACD.

N. Media

Each vendor must submit its proposal in ***both*** electronic and paper formats:

- **Electronic Submission Required.** One electronic copy of the proposal in Adobe Acrobat PDF format (searchable) must be e-mailed to Dave@KirbyIMC.com and Ryan McGhee (Ryan.McGhee@Cabarrushealth.org) no later than 5 p.m. on the 14th day following the “Allowable Contract Date” (ACD) posted on the USAC website. This should be approximately 43 days after the RFP is posted. The total size of any single e-mail should not exceed nine (20) megabytes. If any file(s) will cause the e-mail to exceed that size limit, please separate the submission into two or more separate e-mails and clearly labeled them “1 of *n*”, “2 of *n*”, and so forth (where *n* = the total number of e-mails).
- **Paper Submission Required.** Two hard copies printed on 8.5” x 11” paper, each copy in a separate three-ring binder, must be physically delivered to CHA no later than three (3) business days after the e-mail version is due. Delivery may be made by the U. S. Postal Service, by express delivery service, or in person using the following physical address:

Cabarrus Health Alliance
Attn: Ryan McGhee, NCTN Evaluation Team,
1307 S Cannon Boulevard
Kannapolis, NC 28083-6232

The submitter must guarantee that the electronic versions are identical to the printed copies.

- **Caveats.** Late bids will not be considered. If there is any variance between the electronic and printed versions, except for signatures, the Evaluation Committee may reject the proposal in whole or in part. Do not submit proposals by fax.

O. Acknowledgement

Within three business days of the receipt of both the electronic and paper versions of the vendor’s proposal, CHA will notify the primary contact by e-mail of successful receipt. If receipt of a vendor’s proposal is not acknowledged when expected, please contact Dave Kirby (Dave@KirbyIMC.com, 919-272-1157) . Do not contact CHA for acknowledgement until after three (3) days.

P. Vendor Qualifications

All vendors submitting proposals must meet the following minimum qualifications:

- The vendor must be capable of managing the implementation and operation of the entire project. However, the use of subcontractors is permissible.
- The vendor must have a proven history of executing large scale IP networks.
- The vendor must have a current FCC Registration Number (FRN). More information about obtaining an FRN can be found at <https://fjallfoss.fcc.gov/coresWeb/publicHome.do> .
- The vendor must have a current USAC Service Provider Identification Number (SPIN). More information about this process can be found at <http://www.usac.org/rhc-pilot-program/vendors/step01/service-provider-id.aspx> .

- The vendor must be in “good standing” with the FCC, the State of North Carolina, and local governments in the service area. Any bidder found to be in FCC “Red-Light Status” will be disqualified.
- The vendor must be thoroughly familiar and compliant with any rules or regulations related to this project, including, but not limited to:
 - 11. FCC Order 06-144¹
 - 11. FCC Order 07-198² including correction
 - 11. The Telecommunications Act of 1996³
 - 11. USAC’s RHCPP process⁴
 - 11. Local, State, and Federal Laws

Q. Use of Subcontractors

The vendor must identify all subcontractors that it plans to pay more than ten percent (10%) of the overall project budget. Additionally, the vendor must provide the role of each such subcontractor, each such subcontractor’s experience in that role, and the vendor’s relationship with each such subcontractor. All such subcontractors must have at least one year of experience in the services they will be providing. During the life of the Contract, the vendor must notify CHA of any sub-contract undertaken as part of the Contract.

In any subcontracts entered into by the vendor for the performance of services, the vendor shall require the subcontractor, to the extent of the services to be performed by the subcontractor, to be bound to the vendor by the terms of the Contract and to assume toward the vendor all of the obligations and responsibilities that the vendor, by the Contract, assumes toward the project. CHA reserves the right to receive copies of and review all subcontracts, although the vendor may delete or mask any proprietary information, including pricing, contained in such contracts before providing them to CHA. The management of any subcontractor will be the responsibility of the vendor, and the vendor shall remain responsible for the performance of its subcontractors to the same extent as if the vendor had not subcontracted such performance. The vendor shall make all payments to subcontractors or suppliers of the vendor. Except as otherwise agreed in writing by CHA and the vendor, CHA will not be obligated for direct payments for the services other than to the vendor. CHA’s written approval of any subcontractor engaged by the vendor to perform any obligation under the Contract shall not relieve the vendor of any obligations or performance required under the Contract.

R. Restriction on Multiple Submissions

Each vendor (based on federal tax ID) may submit only one proposal as a *primary* contractor. However, any such vendor may be named as a subcontractor in other proposals.

S. Letter of Intent to Bid

Any vendor who intends to respond to the RFP and bid on the project is required to submit a formal letter of intent to bid. The letter must be emailed to: Dave@KirbyIMC.com .

¹ http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-144A1.pdf

² http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-198A1.pdf

³ <http://www.fcc.gov/telecom.html>

⁴ <http://www.usac.org/rhc-pilot-program/vendors/>

Note that this is not a *commitment* to bid. The letter must acknowledge that the potential bidder has read, understands, and will abide by the terms of the RFP. Letters should be on company letterhead and be signed by an individual empowered to bind the vendor to the provisions of this RFP and any Contract awarded pursuant to it. Letters of intent to bid will be acknowledged by reply to the email.

T. Inquiries about the RFP

Any questions concerning this RFP must be submitted in writing to the project team by e-mail to Dave@KirbyIMC.com .

CHA will make a good faith effort to respond in a timely manner, but an answer may require a response from USAC or the FCC whose time to respond CHA can not control. CHA may post the question and response online; CHA will not identify the source of the question. However, vendors are responsible for phrasing questions in a way that does not reveal their identity, if desired.

U. What to Submit: Mandatory Proposal Content

1. Cover Letter

A cover letter must accompany the proposal documents. The letter should clearly identify the CHA RHCPP RFP; the vendor; the primary contact for the vendor's proposal; and his or her contact information, especially an e-mail address. The cover letter must be signed by an individual authorized and empowered to bind the vendor to the provisions of this RFP and any Contract awarded pursuant to it. Each proposal shall stipulate that it is predicated upon the terms and conditions of this RFP and any supplements or revisions thereof.

2. Vendor Questionnaire

Complete and attach the Vendor Questionnaire found in the Appendix of this RFP.

3. Certifications and Assurances

Complete, sign, and attach the Vendor Certification and Assurances found in the Appendix. Also, submit a sworn and notarized affidavit as described in the Conflicts of Interest Section .

Contractor Reliability: Bidders must describe their financial condition in a way that will allow the evaluation team to reliably assess the contractor's risk of financial distress. Bidders must describe their management team, highlighting experience relevant to this project.

Bidder ability to execute: The bidder should provide information that the RFP evaluation team can use to determine the bidder's ability to execute the workplan that it has put forward and, more generally, it's ability to meet its potential obligations under a contract based on this RFP. Examples of this information include – 1) reference to prior/existing customers with similar projects; 2) inventory of available and relevant resources (e.g. skilled staff, sub-contractors).

Workplan: Bidder must provide a high-level workplan network implementation and operation operation/maintenance. The workplan must provide:

- 1) milestones no less often than one month for design and implementation phases
- 2) relative dates for milestones (relative to the contract signing)
- 3) major tasks required to meet each milestone
- 4) resource types and amounts needed by the vendor, NCTN management, subscribers needed for each major task.

Each month that the contract is signed and that the NCTN sites are not operating represents a loss of opportunity to acquire discount under the RHCPP's 5-year funding period. The bidder should pay close attention to methods to speed the design phase and start operations as quickly as feasible.

4. Executive Summary

- Overview of the vendor's proposed solution(s)
- Vendor Capabilities. Describe the firm's experience and capabilities in providing services similar to those requested in this RFP. Identify projects, dates, and results.

- **Vendor References.** Vendors submitting proposals must include in their response the names of three customers, including points of contact (name, address, telephone number, and e-mail address), who can serve as references for work performed on similar network projects completed within the last five years. Selected organizations may be contacted to determine the quality of work performed and personnel assigned to the project. The results of the reference check will be provided to the Evaluation Committee and used in scoring the written proposal.

5. Technical

In this section vendors must respond in full and with specificity to *the* “Description of Infrastructure, Products, and Services Sought” part of this RFP. The vendor’s proposal must detail how the proposed network will meet all of the requirements of this RFP. Responses should include a network map, both physical and logical, and the manufacturer’s hardware specification/data sheet for each proposed model of equipment. These items may be provided as attachments to the proposal.

6. Costs

Appendix E lists the participating HCP sites and the Service type(s) selected for each site.

Each vendor responding to this RFP must detail:

- The one-time (non-recurring) costs of network construction (including the purchase and installation of all hardware). The vendor is responsible for all installation costs, including, but not limited to, labor, material, permit fees, access fees, easement costs, and make-ready costs. The vendor’s bid should reflect all of these costs.
- The monthly service fee that each HCP site will have to pay to access and use the health care network; this fee will be based on the level of service (service type) provided to the HCP site (e.g., Service type 1 versus Service type 7)
- **Pathway Construction Costs:** Pathway Construction Services and Items are defined here as any services or items at the site itself needed to provide the site’s internal network with a connection to the NCTN. These services/items include, but are not limited to:
 - conduit runs from the street to the demarc point at the site capable of supporting fiber,
 - conduit for short distances within the demarc point (room) to the backer board that supports the termination equipment,
 - backer board and mounting
 - electrical circuit to power the termination equipment.
- **Connection Costs .** These are any other non-recurring costs associated with the service.

a) One-Time (Non-recurring) Costs

Each and every identifiable cost to construct the health care network infrastructure—network construction costs (if any), hardware items, and hardware installation and connection costs—must

be allocated to one or more HCPs and itemized using the following spreadsheet format. (This table is provided as a simple example.)

HCP	Site	General Description of Item	Category	Component	Optional Expanded Description	# of Items	Cost per Item	Total Cost
HCP site # 1	Site Address	Brand X router, model Z	Network Equip	Router		2	\$1,000	\$2,000
...								
HCP site # 33	Site address	Cable, fiber	Infra-structure	Cable, fiber	UP trunk line allocated to HCP	1	\$25,000	\$25,000
HCP site # 33	Site address	Cable, fiber	Infra-structure	Cable, fiber	UP trunk line allocated to HCP	1	\$25,000	\$25,000
HCP site # 34		Cable, fiber	Infra-structure	Cable, fiber	UP trunk line allocated to HCP	1	\$25,000	\$25,000
HCP site # 35		Cable, fiber	Infra-structure	Cable, fiber	UP trunk line allocated to HCP	1	\$25,000	\$25,000
...								
...								
Grand Total								\$9,999,999

- Identification of the participating HCP and site that will receive the equipment or to whom the network construction costs are being allocated. This identification must use the “HCP nomenclature” shown as **Appendix E** and of this RFP.
- General description of the item. The description of each hardware item must include the manufacturer and model number. Network construction costs allocated to an HCP site must be described.
- Equipment or service category: choose one from the first column of **Appendix D**
- Component: choose one from the third column of **Appendix D**
- Optional expanded description/details/comments
- The number of items (e.g., two identical routers installed at the same site)
- The cost per item
- The total cost for this line item, i.e., “# of Items” times “Cost per Item”

The final line in the spreadsheet should be the **grand total of all “Total Cost” fields**. This figure must be the sum of all one-time costs to build and set up the network. Note that the

matching amounts coming from network subscribers will be collected on an annual basis and that we therefore prefer a service cost model that has little in the way of one-time costs.

b) Monthly (Recurring) Service Costs for Access to the Health Care Network

Each participating HCP site connected to North Carolina’s health care network may be charged a monthly access fee, which may vary by service type and other factors. This fee cannot be increased during the first five years of service provided to each site, although it may be decreased on an annual basis. In the vendor’s response to this RFP, these fees should be specified using the following spreadsheet format. (This table is provided as a simple example.)

Access to the Health Care Network		
Monthly Service Costs during		
HCP/site	Monthly Fee	Total for 60 Months
HCP site # 1/1	\$50	\$2,640
HCP site # 2/1	200	10,080
HCP site # 3/1	300	18,000
HCP site # 3/2	200	10,080
HCP site # 4/1	1,000	60,000
...		
HCP site # n	500	26,400
Grand Totals	\$150,000	\$8,640,000

- Identification of the participating HCP site to whom the service is being rendered. This identification must use the “HCP nomenclature” shown as *Appendix E* of this RFP.
- Monthly service cost for access to the network, Internet and Internet2

c) Monthly (Recurring) Service Cost for Access to the Internet2

The proposal must include a price for Internet2 access for the whole network and include apportionment of this cost to each site.

d) Standard Pricing Schedule

The vendor must propose maximum pricing for each Service Type and may propose different pricing in different regions for the same Service Type. These maximum prices per Service Type per region constitutes a Standard Pricing Schedule (SPS). The SPS pricing is to be applied to sites and services that are not part of the initial set of sites and service instances in Appendix E. The flexibility of allowing for regional differences in pricing is meant to allow a vendor to vary prices for a service based on the regional variation in costs to the vendor in providing the service. A region is a geographical area constructed so it does not overlap any other region and that it is clear whether or not a given site is in that region and only in that region. The combined regions must cover all of North Carolina.

While the bidder may choose and document region boundaries to fit their proposal, these regions will be fixed based on the selected vendor’s region set at the time the Contract is signed for the life of the Contract. Vendors should propose any additional Service Types that may be needed to service entities (e.g. costs associated with a site move). The format for the SPS (optionally per region) will expected to contain a row for each service type and columns for each component of cost (e.g. install costs, recurring costs, costs per mile(e.g. of dark fiber).) The table below shows an example; vendors are free to express pricing and components as desired as long as the pricing can be applied objectively to future instances of requests for service.

Standard Pricing Schedule for Region 1	Costs		One-time cost items				
	One-time cost	Monthly recurring cost	General Description of Item	Category	Component	Optional Expanded Description	# of Items
Standard Service Type							
Service type 1 – for county-connected Public Health Sites (PHS)							
Service type 2 – for PHSs operating as a Multi-County Health group							
Service type 3 –for First Responder sites							
Service type 4 – Individual PHS's							
.addl service types							

e) Summary of Costs to Be Evaluated

Each vendor’s proposal will be evaluated, in part, on cost. To summarize, the five cost components that will be evaluated are:

- One-time network construction costs detailed on a spreadsheet described above
- A spreadsheet listing all HCPs and how much each will be charged for access to the health care network, by year, for years one through five of operation, as detailed above
- The standard monthly (option requirement) Internet2 access fee.
- The Standard Pricing Schedule described above.

f) Implementation Schedule

Provide an implementation schedule, by year and quarter, showing when each site listed in Appendix E (“Participating Health Care Providers”) will be networked and fully operational.

Provide a brief overview of how the implementation schedule was devised and will be executed. This will become the basis for the implementation schedule to be incorporated into the selected vendor's contract.

g) Staffing

- Primary Contact Person and Alternate (complete contact information)
- Project Management Staffing and Qualifications. Provide resumes describing the educational background and work experiences for each of the key staff who will be assigned to the project. CHA prefers some or all of the project management staff to be certified Project Manager Professionals (PMPs).
- Subcontractors Coordination: Identify and provide the qualifications of key staff who will coordinate subcontractor activities, if any.
- Subcontractors: Identify and provide the qualifications of at least one (1) key staff person for each subcontractor, if any, as defined entitled "Use of Subcontractors" above.

h) Exceptions/Alternatives to These Requirements

All exceptions to the requirements of this RFP must be delineated in this section; otherwise, all requirements of this RFP will be considered to be acceptable by the vendor. For the proposal to be considered, proposed alternatives must be identified and explained in this section.

i) Miscellany

If any bidder plans to request that CHA include in the Contract all or a portion of the vendor's form of contract, that form must be attached to the proposal. The vendor's form of contract must include a copy of its SLA defining all network performance and uptime expectations as well as any and all remedies for non-performance.

j) Fixed Price Period

All prices, costs, and conditions outlined in a vendor's proposal shall remain fixed and valid for acceptance for 180 days starting on the due date for proposals.

V. Oral Presentations and/or Demonstrations

CHA may require any vendor to make oral presentations to supplement their proposals. CHA will make every reasonable attempt to schedule each oral presentation at a time and location that is agreeable to the vendor. Failure of a vendor to complete a scheduled oral presentation to CHA, if required, before the date established in the RFP Process Calendar may result in rejection of that vendor's proposal.

W. Incurred Costs to Propose

CHA is not liable for any costs incurred by any bidders or vendors prior to the execution of a Contract by all parties.

X. Errors and Omissions in a Proposal

A vendor may revise a proposal on its own initiative at any time before the deadline for submission. The vendor must submit the revised proposal in the same manner as the original was submitted. In no case will a statement of intent to submit a revised proposal, or commencement of a revision process, extend the proposal due date.

Y. Errors and Omissions in the RFP

If a vendor discovers any significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in this RFP, the vendor should immediately notify CHA (at Dave@KirbyIMC.com) of such error and request modification or clarification of the RFP document. In the event it becomes necessary to provide additional data or information, or to revise any part of this RFP, CHA will provide supplements and/or revisions via email to all vendors who have submitted a letter of intent to bid. CHA will also post the supplements and/or revisions on the project website, <http://nctelehealthnetwork.com>. Each vendor is responsible for ensuring that its proposal reflects any and all supplements and revisions issued prior to the proposal due date, regardless of how early in the process a vendor submits a proposal.

Z. Objections to RFP Terms

Should a vendor object on any ground to any provision or legal requirement set forth in this RFP, the vendor must send a written emailed letter setting forth with specificity the grounds for the objection. The letter must be received before the Allowable Contract Date posted on USAC's website. Letters should be sent to:

Dave@KirbyIMC.com. The letter will be acknowledged by reply to the email. The failure of a vendor to object in the manner set forth in this paragraph shall constitute a complete and irrevocable waiver of any such objection and the right to object.

AA. No Waiver of RFP Provisions

No waiver by CHA of any provision of this RFP shall be implied from any failure by CHA to recognize or take action on account of any failure by a vendor to observe any provision of this RFP.

BB. Ownership and Disclosure of Proposals Submitted in Response to This RFP

Proposals submitted in response to this competitive procurement shall become the property of CHA. CHA will share all proposals with internal staff and all the members of the Evaluation Committee. All proposals received shall remain confidential, with the exception of any information CHA is legally required to disclose.

CC. Acceptance of RFP/Proposal Content

The contents of this RFP and the vendor's proposal will become contractual obligations/rights, if and when a Contract ensues with the exception of any RFP-based obligations that are superseded in the Contract. Failure of the vendor to accept these obligations/rights will result in cancellation of the award.

XI. Site Type H and PH - Evaluation / Selection / Award Process

A. Evaluation Procedure

The evaluation and selection of a vendor will be based on the information submitted in the proposal, references, and any required oral presentations and/or demonstrations. Vendors should respond to ALL requirements of the RFP. Failure to respond completely may lead to rejection of a proposal.

B. Evaluation Committee

CHA's Evaluation Committee will consist of CHA staff and consultants. Vendors may not knowingly contact members of the Evaluation Committee (other than the primary and alternate RFP contacts) except at CHA's request. Any unauthorized contact may disqualify the vendor's proposal.

C. Evaluation Criteria and Weighting

The proposals will be reviewed first to determine if all mandatory requirements have been met. Failure to meet any mandatory requirement may result in the proposal being rejected. Both the vendor *and* any or all subcontractors identified in the proposal may be evaluated on these criteria.

Proposals will then be ranked using the following criteria:

- 30% - Cost
 - 20% - Recurring (monthly) cost(s) to participating HCPs, bandwidth rates (if any)
 - 10% - One-time (network construction) costs
- 25% - Technical solution
 - Ability of the proposed solution to meet all technical requirements
 - Resiliency/redundancy of the network; including peering in the state of NC
 - Scalability for existing and future demands and impact on the surrounding community
 - Network management and network administration process; including the use of web site to manage most project/network status/communication tasks.
- 25% - Qualifications, experience, and references
 - Demonstration that the vendor can complete the project on time and on budget and deliver a complete and solid solution
- 10% - Performance responsiveness
 - Overall capacity of the network to meet the anticipated demands

- The vendor's support and response plan
- Service Level Agreement (SLA) items
- 10% - Implementation
 - Implementation time frame
 - Implementation plan and approach
 - Vendor's project management process; including the use of web site to manage most project/network status/communication tasks.
 -
- 5% - Internet2 arrangements
- 5% - Excess capacity provisions for community use (optional)

D. Contract Award: Right to Reject Proposals and Negotiate Contract Terms

CHA expressly reserves the right to accept or reject any or all bids in whole or in part, to waive any irregularities therein, and to award the Contract(s) to other than the low bidder. CHA reserves the right to approve subcontractors for this project and to require the vendor to replace subcontractors who are found to be unacceptable. CHA reserves the right to award the Contract to a bidder who, in CHA's sole discretion, provides bid quotations that are in the overall best interests of CHA and this project. If a Contract is awarded, it will be granted to the most responsive and responsible vendor with whom CHA is able to negotiate a . The Contract will contain all of the requirements and terms set forth in this RFP, plus such additional and/or superseding terms as are acceptable to CHA and its legal counsel to carry out the intent of this RFP and address the information submitted by the bidder(s) in response to this RFP. Any Contract entered into as a result of this RFP will be contingent upon USAC and FCC approval. Vendor responses to this RFP will be a binding part of the Contract.

E. Notification of Intent to Award

Any selected vendor who responds to this RFP will be notified in writing (e.g., by e-mail) by the Director of CHA of its intent to award a Contract as a result of this RFP.

F. Contract Duration

Following submission of all bids, CHA will negotiate with bidders regarding the terms of the contract to be executed in connection with the award of services in this RFP (the "Contract"). The Contract will contain all of the requirements and terms set forth in this RFP, plus such additional and/or superseding terms as are acceptable to CHA and its legal counsel to carry out the intent of this RFP and address the information submitted by the vendor in response to this RFP. All bidders acknowledge and agree that their submissions are subject to this requirement and the ability to agree upon such a Contract, and that if a contract acceptable to CHA and its legal counsel cannot be agreed upon, CHA may reject any and all bids. The Contract shall be effective on the date indicated on the Contract (the "Contract Date").

The implementation period shall be detailed in the Contract.

The Contract is expected to have a duration of at least 10/21/2016. This is the date that the RHCPP discounts are no longer available. The Contract's duration may be much longer than this in order to provide subscribers with one option for access to subsequent FCC program discounts and, perhaps, continued service without discounts. The conditions under which the vendor will be required to provide service and be paid for service are expected to be conditioned on the availability of funds, including RHCPP discounts, subscriber funds, and other potential sources of funding.

The NCTN subscribers and the vendor will be required to participate in a "transition" planning exercise about 24 months before RHCPP discounts are scheduled to end. The transition planning will establish options for continuing service after the RHCPP discounts are no longer available. The options may include use of the traditional RHC program, funds from the sites, and new options for a reformed RHC program.

The Contract is expected to include options for renewal that support the interests of the sites and the vendor.

G. Acceptance Criteria and Testing

It is not the intent of this RFP to dictate how service is provisioned. However, the selected vendor will be required to demonstrate that the installed services are fully compliant with the Contract. Compliance will require demonstration of the following:

- Installation and configuration of all equipment and other items required by this RFP or the Contract have been completed.
- All equipment and other items required by this RFP or the Contract comply with the requirements of this RFP and the Contract, including, but not limited to, the applicable connection and speed requirements.
- Connection to the HCP's internal network has been completed and is fully functional – including any backup facilities
 - The HCP is fully and reliably able to access Internet resources. The connection must remain continuously reliable for at least seven (7) days.
 - The HCP is fully and reliably able to access Internet2 resources. The connection must remain continuously reliable for at least seven (7) days.
 - The HCP is fully and reliably able to access the key datacenter resources. The connection must remain continuously reliable for at least seven (7) days.
 - The HCP is fully and reliably able to access any other resources that are directly attached to the NCTN. The connection must remain continuously reliable for at least seven (7) days.
 - For the requirements above, "reliably able to access" includes a proven ability to achieve the required throughputs to/from the various resources.
- Documentation of the configuration and installation, and manuals for any and all hardware installed at the site, have been provided to the HCP's personnel in an organized manner.

- All equipment has been installed, mounted, and/or secured in an organized and neat manner. All wires are in a wire management device or otherwise secured.
- All equipment, wires, and connection points have been clearly labeled and match the documentation.
- Any required training and/or “hand off” to the HCP staff have been completed.
- The procedure, with contact information, for initiating a support or trouble call/issue has been provided to the HCP’s staff in an organized manner.
- Any information required by the RHCPP program is made available to the NCTN Administrator in a readily usable form.

For each HCP site, the selected vendor will be required to provide to CHA and the HCP:

- Detailed information relative to the circuits being installed
- A report on the network and Internet bandwidth provided
- A listing of all hardware components being provided
- Detailed configuration sheets for the hardware and throughput test results
- Pre-tests of throughput on the prior service and on the new service.

For each Service type 3 site (PHS’s operating as a First Responder site):

- Connectivity physical circuit redundancy must be tested (and pass) with a continuing plan to test each segment on a monthly cycle and report findings to the NCTN Administrator and the HCP site manager.
- Complete testing of all operating facilities must occur before approval, with a plan to perform this testing each three months and on request in the occurrence of a pending threat.

The site will be accepted after the foregoing information has been provided to and reviewed by CHA and the HCP confirms that the above criteria have been met and that the connections have been tested and passed as described above. Vendors should consider proposing a web site with individual authentication for each HCP that could be used to gather the attestations needed from HCPs. The site content should be made available to NCTN Administrator for the purpose of inspecting for the completion of the acceptance criteria.

XII. Site Types H and PH - Additional Requirements

A. Commitment of Funds

The Executive Director of CHA is the only individual who may legally commit CHA to the expenditures of funds for a Contract resulting from this RFP. No cost chargeable to the proposed Contract may be incurred before receipt of a fully executed Contract.

B. Laws That Apply

All proposals submitted in response to this RFP and any Contract shall be subject to all applicable laws and procedures, including, but not limited to, all FCC Orders, Statutes, State law and regulation, and USAC requirements mentioned in this RFP.

C. Indemnification

CHA and the participating HCPs are to be indemnified and held harmless by the vendor and all subcontractors for the vicarious liability of CHA and the participating HCPs as a result of this RFP and any resulting Contract(s).

D. General Indemnification

Vendor agrees to indemnify, defend, and hold harmless CHA, all participating HCPs, and their respective Boards of Directors, in their official and individual capacities, administrators, employees, agents, contractors, successors, and assignees, from and against any and all costs, expenses, damages, and liabilities, including reasonable attorney's fees, arising out of the: (i) acts or omissions of the vendor, its officers, directors, employees, successors, assignees, contractors, and agents; (ii) any breach of the terms of the Contract by vendor; or (iii) any breach of any representation or warranty by vendor under the Contract.

E. Environmental Indemnification

Throughout the term of the Contract, vendor shall not permit itself or any third party to use, generate, handle, store or dispose of any Hazardous Substances in, on, under, upon or affecting any HCP or CHA property in violation of any applicable law or regulation. Without limiting any other provisions of the Contract, vendor shall indemnify, defend and hold harmless all participating HCPs and CHA from and against all liabilities, claims, losses, costs and expenses (specifically including, without limitation, attorneys', engineers', consultants', and experts' fees, costs, and expenses) arising from (i) any breach of any representation or warranty made in this paragraph and/or (ii) environmental conditions or noncompliance with any applicable law or regulation that result, in the case of vendor, from operations or services in or about any HCP or CHA property by vendor or its agents or employees. As used herein, the term "Hazardous Substances" shall mean (i) any hazardous or regulated substance as defined by all federal, state and local environmental laws, including, but not limited to, Federal Water Pollution Control Act (33 U.S.C. §§ 1251 et seq.) ("Clean Water Act"), the Resource Conservation & Recovery Act (42 U.S.C. §§ 6901 et seq.) ("RCRA"), Safe Drinking Water Act (42 U.S.C. §§ 300f-j-26), Toxic Substances Control Act (15 U.S.C. §§ 2601 et seq.), Clean Air Act (42 U.S.C. §§ 7401 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. §§

9601 et seq.) (“CERCLA”), the Emergency Planning and Community Right to Know Act (42 U.S.C. §§ 11001 et seq.) (“EPCRA”), the North Carolina Natural Resources and Environmental Protection Act (MCL § 324.101 et seq.), the administrative rules and regulations promulgated under such statutes, or any other similar federal, state, or local law or administrative rule or regulation of similar effect, each as amended and as in effect and as adopted as of the Contract Date, (ii) any other pollutant, contaminant, hazardous substance, solid waste, hazardous material, radioactive substance, toxic substance, noxious substance, hazardous waste, particulate matter, airborne or otherwise, chemical waste, medical waste, crude oil or any fraction thereof, radioactive waste, petroleum or petroleum-derived substance or waste, asbestos, PCBs, radon gas, all forms of natural gas, or any hazardous or toxic constituent of any of the foregoing, whether such substance is in liquid, solid or gaseous form, or (iii) any such substance the release, discharge, or spill of which requires activity to achieve compliance with applicable law. This paragraph shall survive the expiration or earlier termination of the Contract.

F. Conflicts of Interest

All proposals must be accompanied by a sworn and notarized affidavit disclosing any familial relationship that exists between the vendor or any employee of the vendor and any member of the CHA Board or the Board of the NC Association of Free Clinics. Any proposal not accompanied by said sworn and notarized affidavit will not be considered or accepted by CHA.

G. Failure to Perform / Penalties / Termination

1. Installation Timeframes

Prior to finalizing the Contract, CHA and the selected vendor will create an installation schedule, including:

- Specific installation benchmarks based on priorities identified by CHA
- “Grace periods” applicable to these benchmarks
- Incentives for faster completion.
- Significant failure to meet the schedule may be treated as a breach of the Contract.

2. Network Interruptions

An interruption of service is defined as any two-minute (2 min) interval with a complete interruption of transmission, or a bit error rate of worse than 1×10^{-9} for a particular communication path within a route. The following shall not be deemed an interruption: (1) any period during which the customer fails to afford access to any facilities for the purpose of investigating and clearing troubles; (2) planned maintenance outages; (3) *Force Majeure* events (except at Service Type 3 sites) (4) interruptions of a service that is in whole or in part off-net to the vendor; and (5) interruptions caused in whole or in part by the customer equipment.

In the event of an interruption of service, allowances for the period of interruption, with respect to each route affected by such interruption, are defined as follows:

- For an interruption lasting four (4) hours or less, the HCP will be credited at the rate of $1/360^{\text{th}}$ of the monthly lease fee for each hour or fraction thereof for the entire outage period.
- When the interruption lasts more than four (4) hours but does not exceed twenty-four (24) hours, the HCP will be credited at the rate of $1/180^{\text{th}}$ of the monthly lease fee for each hour or fraction thereof for the entire outage period.

- When the interruption lasts more than twenty-four (24) hours but does not exceed seventy-two (72) hours, the HCP will be credited at the rate of 1/90th of the monthly lease fee for each hour or fraction thereof for the entire outage period.
- When an interruption exceeds seventy-two (72) hours, the HCP will be credited at the rate of 1/45th of the monthly lease fee for each hour or fraction thereof for the entire outage period.

The monthly invoice for services must clearly show the credits for service interruptions in the prior month.

Any 30-day period during which an HCP experiences outages totaling more than 100 hours, or any 365-day period during which an HCP experiences outages totaling more than 200 hours, will be considered a failure to perform. The vendor will be given notice and an opportunity to correct the network performance issues. Failure to do so will constitute a breach of the Contract. Specifics relating to breach of the Contract and remedies will be a part of the final negotiated Contract.

3. Failure to Meet Repair or Response Time Requirements

In the event that there is a noticeable failure on the part of the vendor to meet Response and Repair Times, using the trouble ticket log and HCP records, an audit of the vendor's Response and Repair Times will be undertaken. Failure to meet contracted Response and Repair benchmarks will be considered a failure to perform. The vendor will be given notice and an opportunity to correct these issues. Failure to do so will constitute a Breach of Contract. Specifics relating to Breach of Contract and remedies will be a part of the final negotiated Contract.

4. Right to Audit / Cooperation with FCC/USAC Auditors

CHA reserves the right to conduct, at its expense, an independent audit of the vendor's records pertaining to this project.

In the event any question arises during an FCC/USAC audit of CHA's project records, the vendor is required to reply to auditor questions about the RHCPP project within three business days

The FCC and or USAC may audit the winning vendor. Vendors are expected to cooperate fully.

Vendor's failure to cooperate at its expense with any audits may result in termination of Contract.

H. Maintenance of Requirements to Do Business and Provide Services

The vendor and any subcontractors, at their cost, shall obtain and maintain all licenses, permits and authority necessary to do business and render service under this RFP and any resulting contract(s) and, where applicable, shall comply with all applicable laws including, but not limited to, those regarding safety, unemployment insurance, disability insurance, and worker's compensation

I. Reasonable Accommodations

Upon request, CHA will provide reasonable accommodations, including the provision of informational material in an alternative format, for qualified individuals with disabilities. If you require accommodations, please contact the primary RFP contact.

J. EEO: Minority- Veteran- & Women-owned Business Participation

While CHA encourages minority-, veteran-, and women-owned businesses to submit a proposal or participate as a subcontractor to a vendor who is submitting a proposal, no preference will be given based on business type.

K. Disqualification from bidding, contracting, or provision of services:

Bidders must state that:

A) At the time of bidding they and any anticipated sub-contractors are not disqualified from bidding, contracting, or provision of products and services under the contract to the CHA, NCTN subscribers, or others within North Carolina.

B) During the contract period, they agree to notify NCTN program managers in writing if they or any existing or anticipated sub-contractors are disqualified from bidding, contracting, or provision of the products and services under the contract to the CHA, NCTN subscribers, or others within North Carolina.

C) That CHA may terminate the contract if it determines that the contractor or any existing or anticipated sub-contractors are disqualified from bidding, contracting, or provision of the products and services under the contract to the CHA, NCTN subscribers, or others within North Carolina.

L. Vendor Insurance Coverage

The vendor shall, at all times during the term of the Contract (including any contracts assigned to participating HCPs), maintain in full force and effect the insurance as listed below. All insurances shall be issued by insurers and for policy limits acceptable to CHA, and the vendor shall furnish to CHA certificates of insurance or other evidence satisfactory to CHA evidencing the required insurance has been procured and is in force. The certificates shall include the following express obligation:

“This is to certify that the policies of insurance described herein have been issued to the insured for whom this certificate is executed and are in force at this time. In the event of cancellation, non-renewal, or material modification affecting the certificate holder, thirty (30) days prior written notice will be given to the certificate holder.”

CHA and all participating HCPs shall be additional insureds on the vendor’s Commercial General Liability, Employers Liability, Automobile Liability, Excess/Umbrella Liability insurance, and all other insurance described below; and the extent of the additional insured coverage afforded shall be no less broad than General Liability and Umbrella/Excess Liability, for Auto Liability, and other coverages, or substitute equivalent coverage. The additional insured coverage afforded under the vendor’s policies shall include both ongoing operations (work in progress) and completed operations (completed work). The insurance coverage shall be purchased and maintained by the vendor and shall be primary to any insurances, self-insurance, or self-funding arrangement maintained by CHA, which shall not contribute therewith, and include severability of interests under the insurance policies.

Coverage	Minimum limits of liability, terms and coverage
Commercial General Liability	\$1,000,000 bodily injury and property damage each occurrence, including advertising and personal injury, products and completed operations \$5,000,000 products/completed operations, independent contractors liability, contractual liability, and coverage for property damage from perils of explosion, collapse, or damage to underground utilities, commonly known as XCU \$5,000,000 general annual aggregate
Auto Liability Insurance	\$1,000,000 each person, bodily injury and property damage, including owned, non-owned and hired auto liability
Workers' Compensation	Statutory limits
Employer's Liability	\$1,000,000 bodily injury by accident, each accident \$1,000,000 bodily injury by disease, each employee \$1,000,000 bodily injury by disease, policy aggregate
Umbrella/Excess Liability	\$5,000,000 each occurrence and annual aggregate Underlying coverage shall include General Liability, Auto Liability, and Employers Liability
Pollution Legal Liability	\$1,000,000 per claim \$1,000,000 annual aggregate covering damages or liability arising or resulting from vendor's services rendered, or which should have been rendered, pursuant to the Contract
Property	The vendor shall purchase and maintain property insurance covering machinery, equipment, mobile equipment, and tools used or owned by the vendor in the performance of services under the Contract. CHA shall in no circumstance be responsible or liable for the loss or damage to, or disappearance of, any machinery, equipment, mobile equipment and tools used or owned by the vendor in the performance of services under the Contract.

The vendor shall be responsible for the payment of any and all deductible(s) or retention(s) under the policies of insurance purchased and maintained by it pursuant to the Contract. To the extent permitted by law, all or any part of any required insurance coverage may be provided under an approved plan or plans of self-insurance.

All insurance shall be issued by insurance carriers licensed to do business by the State of North Carolina or by surplus line carriers on the North Carolina Insurance Commission-approved list of companies qualified to do business in North Carolina. All insurance and surplus line carriers must be rated A+ or better by A.M. Best Company.

M. CHA Miscellaneous contract terms

The Contract shall contain standard terms for contracting with CHA. These include:

Civil Rights: Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352), as amended, and all requirements imposed by or pursuant to the Department of Health and Human Services (45 C.F.R. Part 80), to the end that, in accordance with Title VI of that Act and the Regulation, no person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity covered by this Contract.

Rehabilitation Act: Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), as amended, and all requirements imposed by or pursuant to the Regulation of the Department of Health and Human Services (45 C.F.R. Part 84), to the end that, in accordance with Section 504 of that Act and the Regulation, no otherwise qualified handicapped individual in the United States shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity covered by this Contract.

The American with Disabilities Act 1990: ADA makes it unlawful to discriminate in employment against a qualified individual with a disability and outlaws discrimination against individuals with disabilities in State and local government services and public accommodations. The Contractor certifies that it and its principals will comply with regulations in ADA Title II (Public Services) and Title III (Public Accommodations) in fulfilling the obligations under this contract.

Confidentiality: All information as to personal facts and circumstances obtained by Contractor in connection with the provision of services or other activity under this Contract shall be privileged communication, shall be held confidential, and shall not be divulged without the responsible person's written consent except as may be otherwise required by applicable law or regulation. Such information may be disclosed in summary, statistical, or other form which does not directly or indirectly identify particular individuals. Contractor Employees must sign confidentiality pledges documenting the knowledge of and the agreement to maintain personal and medical confidentiality.

Subcontracting: The Contractor shall not subcontract with a party to perform more than 10% of the work contemplated under this contract without obtaining prior written approval from the Alliance. Any approved subcontract shall be subject to all conditions of this contract.

Hold Harmless: The Contractor agrees to indemnify and save harmless the Alliance against any claims of third parties arising out of any act or omission of the Contractor, its agents, employees, and subcontractors in the performance of this contract.

Conflict of Interest: The Contractor expressly states that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Contract. The Contractor shall not employ any person having such interest during the performance of this contract. The Contractor further agrees to notify the Alliance in writing of any instances that might have the appearance of a conflict of interest. Upon execution of this contract and prior to disbursement of funds, the Contractor shall submit to the Alliance a notarized copy of the Contractor's policy addressing conflict of interest in accordance with North Carolina General Statute 143-6.1.

Insurance: The Contractor agrees to furnish worker's compensation, liability insurance and other insurance as may be required to protect the Contractor and the Alliance against claims which may arise from the Contractor's performance.

Providing and maintaining adequate insurance coverage is a material obligation of the Contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized by the Commissioner of Insurance to do business in North Carolina. The Contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North

Carolina laws or this contract. The limits of coverage under each insurance policy maintained by the Contractor shall not be interpreted as limiting the Contractor's liability and obligations under the contract.

XIII. Site Types H and PH - Appendices

- A. Acronyms and Definitions
- B. Intentionally blank
- C. Vendor Questionnaire
- D. Vendor Certification and Assurances
- E. Participating Health Care Providers (HCPs): HCP Nomenclature
- F. List of USAC Category, Subcategory, Component, and Speed Options
- G. USAC Invoice Template

A. Acronyms and Definitions

Interruption of Service	For the purpose of this project an interruption of service as defined above. The following shall not be deemed an interruption: a) any period during which the customer fails to afford access to any facilities for the purpose of investigating and clearing troubles; b) planned maintenance outages; c) Force Majeure events; d) interruptions of a service that is in whole or in part off-net to the vendor; e) announced maintenance in the acceptable maintenance window; and f) interruptions caused in whole or in part by the customer equipment.
Internet2	A nationwide internet backbone infrastructure owned by a networking consortium consisting of the research and education communities
Invoice Template	The USAC Invoice Template is used by RHCPP participants to submit invoices.
IP	The Internet Protocol is a protocol used for communicating data across a packet-switched network using the TCP/IP suite of protocols.
IPS	An intrusion prevention system (IPS) is a computer security device that monitors network and/or system activities for malicious or unwanted behavior and can react, in real-time, to block or prevent those activities.
IPv6	Internet Protocol version 6
LOA	A Letter of Agency is required from each health care provider/facility participating in a RHCPP project.
Mbps	Millions of bits per second
Metcalf's Law	The value of the network is proportional to the square of the connections.
North Carolina FCC Pilot Program Collaborative	The North Carolina FCC Pilot Program Collaborative was a statewide collaborative of health care stakeholders created to provide structure and direction to North Carolina's effort to participate in the RHCPP.
MPLS	Multi-protocol label switching
MTBF	Mean time between failures
Network Convergence	The IP Multimedia Subsystem (IMS) is a concept for an integrated network of telecommunications carriers that would facilitate the use of IP (Internet Protocol) for packet communications in all known forms over wireless or landline. Examples of such communications include traditional telephony, fax, e-mail, Internet access, Web services, Voice over IP (VoIP), instant messaging (IM), videoconference sessions and video on demand (VoD). IMS was originally conceived in the late 1990s as part of a plan for worldwide deployment of mobile telecommunications networks that would interface with the public switched telephone network (PSTN). IMS is part of the Third Generation Partnership Project (3GPP).
NLR	National LambdaRail nationwide internet backbone infrastructure

Operation Date	<u>The date that is the later of the completion of the installation of a participating HCP site's broadband infrastructure/hardware/software, satisfactory testing of same, and formal acceptance of same.</u>
PC	The Project Coordinator for an RHCPP project.
PR	PR is the USAC-employed Project Reviewer for an RHCPP project. He or she is the direct point-of-contact for the PC/APC and helps guide them through the information submission and funding processes. He or she reviews forms and associated documentation submitted by the PCs.
RFP	Request for proposal
RHC	Rural health care
RHCPP	The Rural Health Care Pilot Program is an FCC project designed to help public and non-profit health care providers deploy a state or regional dedicated broadband health care network and optionally connect it to the larger internet system.
RUCA code	Rural-Urban Commuting Area code
Rural Area	In 2004 the FCC defined "rural area" for purposes of its rural health care support mechanism. While the actual definition is technical, in practical terms, a "rural area" is one that is not within or near a large population base.
Rural Health Care (RHC) Support Mechanism	The rural health care support mechanism is an FCC initiative (funded by monies collected through the Universal Service Fund) that implements the Telecommunications Act of 1996. The RHC support mechanism ensures that rural health care providers pay no more than their urban counterparts for their telecommunication needs in the provision of health care services.
SLA	Service level agreement
SONET	The synchronous optical networking standard for fiber optic networks that allows multiple technologies and vendor products to interoperate by defining standard physical network interfaces
SPIN	A Service Provider Identification Number is required for any entity providing services to RHCPP participants. It is obtained by submitting a Form 498 to USAC and is required to bid on this RFP
SSL	Secure Sockets Layer, a cryptographic protocol that provides secure communications on the Internet
Support Acknowledgement Letter	Letter USAC posts to SharePoint after it receives a completed Form 467
Telecommunications Act of 1996	The Telecommunications Act of 1996 mandated that rural health care providers be provided with "an affordable rate for the services necessary for the provision of telemedicine and instruction relating to such services." To implement this statutory directive, the FCC adopted the current rural health care support mechanism.
Telehealth	Telehealth is the delivery of health-related services and information via telecommunications technologies. Telehealth is an expansion of telemedicine, and unlike telemedicine (which more narrowly focuses on the curative aspect), it encompasses preventive, promotive, and curative aspects of health care.
Telemedicine	Telemedicine is the use of telecommunications technologies to provide health care services to distant locations.

Triple DES Encryption	Triple DES is a block cipher formed from the Data Encryption Standard (DES) cipher by using it three times.
TSP	The Telecommunications Service Priority Program is an FCC program used to identify and prioritize telecommunication services that support national security or emergency preparedness missions, including health care. TSP connections must be repaired first and are given priority in times of emergency.
USAC	The Universal Service Administrative Company is an independent, not-for-profit corporation that the FCC has designated to administer USF programs. USAC administers the RHCPP and ensures the Program's fiscal integrity.

B. Intentionally left blank

C. Vendor Questionnaire

Corporate
Name:

Federal EIN:

Corporate
Address:
Address (line
2):

DUNS
Number:

State of Incorporation:

FCC
Registration
Number
(FRN):

USAC Service Provider
Identification Number (SPIN):

Primary Point of Contact:
Name:
Address:
Primary
Phone:
Email:

Alternate Phone:

Alternate Point of Contact:
Name:
Address:
Primary
Phone:
Email:

Alternate Phone:

Reference 1:
Company:
Point of Contact
Name:
Email:
Description of
Project:
(approx. 100 words)

Phone:

Reference 2:
Company:

Point of Contact

Phone:

Name:

Email:

Description of

Project:

(approx. 100 words)

Reference 3:

Company:

Point of Contact

Phone:

Name:

Email:

Description of

Project:

(approx. 100 words)

Completed By
(Name):

Completed
Date:

D. Vendor Certification and Assurances

The Vendor must complete and sign this document. It must be signed, in the space below, by an individual empowered to bind the vendor to the provisions of this RFP and any Contract awarded pursuant to it.

Vendor's Legal Entity Name: _____

Vendor's Federal Employer Identification Number: _____

I/we make the following certifications and assurances as a required element of the proposal to which it is attached, understanding that the truthfulness of the facts affirmed here and the continuing compliance with these requirements are conditions precedent to the award or continuation of the related Contract(s):

1. I/we declare that all answers and statements made in the proposal are true and correct.
2. The prices and/or cost data have been determined independently, without consultation, communication, or agreement with others for the purpose of restricting competition. However, I/we may freely join with other persons or organizations for the purpose of presenting a single proposal.
3. The attached proposal is a firm offer for a period of 180 days following receipt, and it may be accepted by CHA without further negotiation (except where obviously required by lack of certainty in key terms) at any time within the 180 day period.
4. In preparing this proposal, I/we have not been assisted by any current or former employee(s) of the State of North Carolina, the CHA, or a participating Health Care Provider (HCP) whose duties relate (or did relate) to this proposal or prospective contract and who was assisting in other than his or her official, public capacity. Any exceptions to these assurances are described in full detail on a separate page and attached to this document.
5. I/we understand that CHA will not reimburse me/us for any costs incurred in the preparation of this proposal. All proposals become the property of the CHA, and I/we claim no proprietary right to the ideas, writings, items, or samples, unless so stated in this proposal.
6. Unless otherwise required by law, the prices and/or cost data that have been submitted have not been, and will not be, knowingly disclosed by the above-signed Vendor, directly or indirectly, to any other vendor or to any competitor prior to CHA opening bids.
7. I/we agree that submission of the attached proposal constitutes acceptance of the Request for Proposals (RFP) contents. If there are any exceptions to these terms, I/we have described those exceptions in detail on a page(s) attached to this document.

8. No attempt has been made or will be made by the Vendor to induce any other person or firm to submit or to not submit a proposal for the purpose of restricting competition.
9. I/we grant CHA the right to contact references and others, who may have pertinent information regarding the Vendor’s prior experience and ability to perform the services contemplated in this procurement.
10. I/we have read and understand the RFP, all related legal documents, and related laws applicable to this proposal and shall comply with all aforementioned items, including, but not limited to:
 - FCC Order 06-144
 - FCC Order 07-198 including correction
 - The Telecommunications Act of 1996
 - USAC’s program process
 - Local, State, and Federal Laws
11. I/we shall refrain from hiring any employee of any participating HCP during the bidding process.
12. I/we understand and, if selected, will comply with the following requirements listed in of this RFP:
 - The acceptance criteria and testing procedures described in the RFP.
 - The training requirements described in the RPF.
 - The performance bond requirements described in the RPF.
 - The invoicing and payment processes described in the RPF.
 - The insurance requirements described in the RPF.
 - The security provisions described in teh RFP.
13. I/we acknowledge receipt of Addendum _____ (if any).

On behalf of the firm submitting this proposal, my Signature below attests to the accuracy of the above statements.

Signature

Name (printed or typed)

Title

Date

E. Site Types H and PH - Participating Health Care Providers (HCPs): HCP Nomenclature

See the official posting of the FCC form 465 Attachment on the FCC web site for the list of participating HCPs and services per HCP site. Vendors should not contact the HCPs directly. Contact Dave Kirby (Dave@KirbyIMC.com) for any needed information.

The site type of each site is implied in column 29. “Narrative Description of Telecommunications and/or Internet Services Needed (including capacity sought)” of the 465 Attachment. The description of the service type(s) associated with a site listed in column 29 will be service type(s) associated only with either a PH or H site type.

F. List of USAC Category, Subcategory, Component, and Speed Options

CATEGORY	Sub-category
1: Network Design	1: Recurring
2: Network Equipment, including Engineering and Installation	2: Non-recurring
3: Infrastructure/Outside Plant (Engineering)	
4: Infrastructure/Outside Plant (Construction)	
5: Internet 2/NLR/Internet Connection	
6: Leased/Tariffed facilities or services	
7: Network Management/Maintenance/Operations Cost (not captured elsewhere)	
8: Other	

DESCRIPTION OF SERVICE, COMPONENT	
1: Antennas / Satellite Equipment	19: Microwave service
2: Asynchronous Transfer Mode (ATM)	20: MPLS
3: Broadband over Power Lines (BPL)	66: Network Equipment (other)
4: Cable, copper	23: Network Hardware on Provider Side of Demarc
5: Cable, fiber	24: Network Maintenance
6: Channel Service Unit/Data Service Unit (CSU/DSU) and switches	25: Network Management
7: Connectors / couplers / amplifiers	26: Network Operations
8: Copper-to-Fiber (TX-to-FX) converter	49: Pre-Paid Lease (15 Year)
9: Digital Subscriber Line (DSL)	50: Pre-Paid Lease (20 Year)
10: Ethernet	58: Professional Services
11: Fractional T-1	32: Routers
12: Frame Relay	33: Satellite service
13: Gateway to Internet2	51: Software for Network Management
14: Gateway to NLR	34: Switched Multimegabit Data Service (SMDS)
15: Gateway to Public Internet	35: T-1/DS-1
16: Integrated Services Digital Network (ISDN, BRI, PRI)	37: T-3 / DS-3
17: Interface/Edge Device	38: Uninterruptible Power Supply (UPS)/Battery Backup

17: Interface/Edge Device	38: Uninterruptible Power Supply (UPS)/Battery Backup
18: Jacks, panels, faceplates and wire managers	69: Other (please contact your Coach)
41: Construction	65: Network Server
43: Installation of Recurring Services	47: Warranty
44: Ineligible Expense	36: T-2
44: Installation of Equipment	39: Virtual Private Network (VPN)
46: Firewall	42: RFP Creation
48: IRU (20 Year)	40: Wireless
53: Bundled Network Management and Operation Services	22: Network Design
54: Construction - Management	30: OC-3
55: Construction - Inspection Services	28: OC-1
56: Construction - Infrastructure/Plant Upgrade by Carrier	27: Network Switches
57: Construction - Engineering	52: Network Shared Infrastructure
59: Construction - Mobilization	31: OC-n
61: Construction - Make Ready	29: OC-12
62: IRU (15 Year)	60: Wide Area Network (WAN)
63: License Fees	
64: Bonded T1	21: Multiplexer
69: Annual Internet2 Subscription	45: Maintenance Contract
70: Annual NLR Subscription	68: Managed MPLS

SPEED
3: 1.544 Mbps (T-1/DS-1)
6: 45 Mbps
7: 55 Mbps
9: 155 Mbps
10: 622 Mbps
11: 1 Gbps
12: 10 Gbps
13: 13.2 Gbps
14: 2.488 Gpbs
15: 39.8 Gpbs
16: N/A
17: 200 Mbps
18: 50 Mbps
19: 400 Mbps
20: 3 Gbps
21: 120 Mbps
22: 3 Mbps
23: 5 Mbps
24: 10 Mbps
25: 20 Mbps
26: 40 Mbps
27: 100 Mbps
28: 15 Mbps

29: 2.048 Mbps
30: 8.448 Mbps
31: 34.638 Mbps
32: 139.264 Mbps
33: 565.148 Mbps
34: 300 Mbps
35: 500 Mbps
36: 800 Mbps
37: 150 Mbps
38: 4.5 Mbps
39: 30 Mbps
41: 3.08 Mbps (2xDS1)
42: 4.62 Mbps (3xDS1)
43: 6.16 Mbps (4xDS1)
44: 9.24 Mbps (6xDS1)
45: 110 Mbps
46: 1.100 Gpbs
47: 10.78 Mbps
48: 101 Mbps
49: 1.001 Gpbs
50: Other (Please contact your Coach)

G.USAC Invoice Template



2.7.2 Invoice Template

Project Name Northwestern Pennsylvania Telemedicine Initiative		HCP Number 132456	FOR RHCD USE ONLY Header Verification _____ RHCD Processed Date _____ Number of Records _____ Number of Records Approved _____ RHCD Approved Total Amount	
Service Provider Name Verizon		FRN 123456789		
SPIN 12345		Funding Year 2007		
Service Provider Invoice Number 134354789				
Invoice Date to RHCD (mm/dd/yyyy) 1/25/2008				
Billing Account Number (BAN) 3216547				
Total Invoice Amount \$0.00				

Line Item	NCW Df	Category	Sub Category	Item	Speed	Total # of Items Approved	# of Items requested this invoice	Approved Cost per Item	Actual Cost Per Item	Total Cost	RHC Funding % Requested (max 85%)	Participant Contribution Amount	Support Amount to be paid by USAC	Code
1														
2														
3														
4														
5														
6														
7														
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Service Provider Certification

1. I certify that I am an authorized representative of the above-named service provider, that I have examined the information provided in the Rural Health Care Pilot Program Invoice, and to the best of my knowledge, information and belief, all costs contained in this invoice are true and correct and represent actual incurred costs for network build-out or related services received by each participating health care provider.

Signature: _____ Date: _____ Phone #: _____

Print Name: _____ Email: _____

Project Coordinator Certification

1. I certify that I have examined the information provided in the Rural Health Care Pilot Program Invoice, and to the best of my knowledge, information and belief, the participating health care providers have received the network build-out or related services itemized on this invoice. I certify under penalty of perjury that the 15 percent minimum funding contribution for each item on this invoice required by the Rural Health Care Pilot Program rules was funded by eligible sources as defined in the rules and has been provided to the service provider.

Signature: _____ Date: _____ Phone #: _____

PC Name: _____ Jed Carr _____ Email: _____