



REQUEST FOR PROPOSAL NETWORK INFRASTRUCTURE

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Responses due February 22nd, 2019

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2 General Information

2.1 Objective

The purpose for this Request for Proposal (RFP) is to solicit proposals from qualified Vendors to perform a complete Network Infrastructure upgrade for Pershing County Government Information Technology Department (PCIT).

PCIT is seeking proposals that includes all elements of the design, build, install, provisioning and some aspects of the technical support for the wide area information network that connects all County offices. Vendor proposals should include:

- A proposed network design
- Quotes for the purchase, test, installation, initial provisioning and warranty maintenance of the network equipment which are included in the proposed network design
- A specification and quote for the construction and/or lease of the layer one infrastructure (fiber, fixed wireless or alternative transport medium) that will interconnect county government sites
- A specification and quote for the operation and maintenance of the layer one infrastructure (fiber, fixed wireless or alternative transport medium)

A specification and quote for the emergency maintenance, repair or replacement of the network equipment. This can be included in the warranty maintenance section of the equipment proposal.

Proposals from a single Vendor or from multiple Vendors working as a team will be considered. The preference of PCIT is to award a single contract and to have a multiple vendor solution provide a single point of contact for management of this Equipment and Network Infrastructure upgrade. The ideal Vendor(s) will also have qualified network security staff assigned to this project and have experience (within the last 2 years) performing network design and implementation for businesses and/or local government agencies of similar size or larger to Pershing County.

2.2 Pershing County Background

Pershing County covers 6,037 square miles of Northern Nevada and is bordered by Washoe, Humboldt, Churchill, and Lander counties. The City of Lovelock serves as the County Seat. Pershing County's population is approximately 6,753. Pershing County has approximately 133 full- and part-time employees.

2.3 Pershing County Technology Environment

Pershing County has approximately 106 PCs and laptops and 13 servers. The County's network consists of 10 locations with LAN subnets with site-to-site IPSec VPNs (See Sections [3.1](#) and [6.5.1](#) for location details). We currently use Cisco ASA 5500 series firewalls (reaching end of life) and ISR routers (reaching end of life), HP and Netgear switches, and a Nortel NorStar MICS PBX phone system.

PCs are primarily Dell OptiPlex desktop models ranging from 3 to 10 years of age, and HP All-In-One Business PCs. The standard operating systems are Windows 7 Pro 64-bit and Windows 10 Pro 64-bit.

Server locations are split between four small server rooms at different county buildings (See map for details):

- Pershing County Administration Building
- Pershing County Courthouse – District Attorney’s Office
- Pershing County Courthouse – Judge’s Chambers
- Pershing County Sheriff’s Office
- Pershing County Annex Building – Child Support Division Office

They consist of a mix of rack mounted Dell PowerEdge and HPE ProLiant DL380 and DL360 servers with redundant power supplies, and direct attached storage arrays. The environment is completely physical with no virtual machine guests. The typical storage configuration consists of a RAID 1 array (OS) and a RAID 5 array (DATA). The network is an unmanaged TCP/IP switch Ethernet flat network with IPsec site-to-site VPNs connecting certain geographically dispersed locations. Critical servers are backed up with Symantec Backup Exec and Unitrends Backup and Disaster Recovery.

3 Proposal Overview

3.1 Project Overview

In addition to life-cycling equipment components at end-of-life (EOL), the project is expected to upgrade the County’s network topology from separate flat networks to a hub and spoke topology. Proposals and the associated installation sequence/timeline shall be structured to provide the County with the most favorable pricing and least amount of disruption to County services while maintaining adequate security.

A successful vendor proposal will include:

- All ordering, delivery, and warehousing of equipment. PCIT will provide storage space but the vendor should be present for the delivery and acceptance of the equipment.
- Furnishing, installation, testing, and configuration of selected network components. Then vendor should describe the test data it will supply to PCIT prior to acceptance of the equipment and configuration. This description should include adherence to the security, VLAN, QoS, diagram, and logistics standards set forth in this section.
- Strict inter-VLAN access rules to improve network and data security (identification, isolation and control of illegitimate traffic or system anomalies).
- Segregated and hardened network segments for NCJIS and DMV access complying with state and federal standards (See Section [6.5.4](#)).
- QoS controls to guarantee bandwidth allocation and prioritization for mission critical application traffic, de-prioritization of less critical network traffic, and VoIP capability.

- Necessary, scalable network capacity to support future technologies including hybrid cloud services and internet bandwidth transfer support of 1 Gb and internal 10 Gb internal network traffic support.
- Network resilience with 99.99999% uptime
- Detailed bill of materials (BOM) of equipment and services to upgrade the entire system of all buildings at all locations.
- Spare parts inventory that supports an appropriate balance of downtime risk, investment cost, and procurement latency of warranty replacement components. PCIT desires to have at least one complete spare switch (include cables and modules) for any switch model that has more than four switches in the network design. PCIT also desires vendor to carry replacement inventory of any switches in the network design within a four-hour drive of Lovelock.
- A specification and quote for the construction and/or lease of the layer one infrastructure (fiber, fixed wireless or alternative transport medium) that will interconnect county government sites.
- A specification and quote for the operation and maintenance of the layer one infrastructure (fiber, fixed wireless, or alternative transport medium).
- A specification and quote for the emergency maintenance, repair or replacement of the network equipment. This can be included in the warranty maintenance section of the equipment proposal.
- Diagrams, in printed and electronic formats, of physical network interconnections
- Diagrams, in printed and electronic formats, of logical network interconnections

Services are expected to be delivered from the county hub, the Pershing County Administration Building (or another suitable County location) at:

Pershing County Sheriff's Office	355 9 th Street, Lovelock, NV 89419	40.17923, -118.47622
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Service is expected to be delivered to the eligible service locations from the county hub at the following locations. The preference is for these sites, in Lovelock, to be served by a fiber connection between the hub and the endpoint for direct connection and LAN/VLAN management.

Pershing County Courthouse	400 Main Street, Lovelock, NV 89419	40.18098, -118.47661
Pershing County Administration Building	400 Main Street, Lovelock, NV 89419	40.18098, -118.4758
Pershing County Annex Building	535 Western Avenue, Lovelock, NV 89419	40.18004, -118.47794
Pershing County Senior Center	630 Western Avenue, Lovelock, NV 89419	40.18057, -118.4795
Pershing County Road Department	1075 Arobio Lane, Lovelock, NV 89419	40.17979, -118.49667

Pershing County Community Center	820 6 th Street, Lovelock, NV 89419	40.176371, -118.48127
Pershing County Buildings & Grounds Shop	795 Western Avenue, Lovelock, NV 89419	40.17995, -118.4828
Pershing County Juvenile Probation Office	795 Western Avenue, Lovelock, NV 89419	40.1796, -118.48282

Optionally, service to these locations can be included for Internet connectivity. For these sites in Lovelock, the preference is that they be served via Fiber connection.

Marzen House Museum	25 Marzen Lane, Lovelock, NV 89419	40.17043, -118.48238
Lovelock Fire Department	1180 Cornell Ave, Lovelock, NV 89419	40.18143, -118.4727

Optionally, service to these locations can be included for Internet connectivity. For these sites, outside of Lovelock (or a distance away from the center of Lovelock), the transport medium can be fiber, fixed wireless, or other option that meets the bandwidth and service standards.

Imlay Fire Department	850 Pacific Avenue, Imlay, NV 89418	40.6575, -118.16178
Rye Patch Fire Department	Old Victory Highway, Lovelock, NV 89419	40.44616, -118.2688
Grass Valley Fire Department	5505 Katrena Drive, Grass Valley, NV 89445	40.83135, -117.74658
Derby Field Airport	1 Derby Field Road, Lovelock, NV 89419	40.07044, -118.56932

Google Maps Link for details: [Pershing County Government](#)

3.2 RFP Official Contact

Upon release of this RFP, all Vendor communications concerning the overall RFP should be directed to the RFP Coordinator listed below. Unauthorized contact regarding this RFP with other County employees may result in disqualification. Any oral communications will be considered unofficial and non-binding on the County. Vendors should rely only on written statements issued by the RFP Coordinator.

Name: Justin Abbott, IT Technician

Address: Pershing County Administration Building
Information Technology
398 Main Street
P.O. Box 1656
Lovelock, Nevada 89419

E-mail: jabbott@pershingcounty.net

3.3 Proposal Schedule

The procurement schedule for this project is as follows:

Note: Pershing County reserves the right to adjust this schedule as necessary.

Milestone	Date
Release of RFP to Vendors	December 28 th , 2018
Optional walkthrough of County facilities	January 4 th , 2018
Vendor questions (if any) and letters of intent due	January 11 th , 2019
Responses to Vendor questions (if any)	January 18 th , 2019
Proposal responses due	February 22 nd , 2019
Vendor selection during regular meeting of the Pershing County Board of Commissioners	July 3 rd , 2019

3.3.1 Project Deadlines

Project must be completed on or before August 31, 2022, when the Cisco ASA 5505s and Cisco ASA 5515-X reach end of life. Phase 2 is dependent upon the completion of Phase 1.

3.3.2 Deadline for Proposals

Proposals must be received by 5:00 P.M. Pacific on Friday, February 22nd, 2019. Vendors are required to prepare and submit, at their own cost, one signed, original proposal. Submissions must include the Vendor's full response including *all attachments, product services, and specifications*. Proposals sent via electronic mail are acceptable and must be sent in PDF or Microsoft Word format, and received by the published deadline.

Proposals sent via Postal Service must arrive by the published deadline to be considered.

3.4 Letter of Intent

Vendors wishing to submit proposals are encouraged to provide a written letter of intent to propose by January 28th, 2019 at 5:00 PM Pacific. An email attachment sent to jabbott@pershingcounty.net is acceptable. The letter must identify the name, address, phone, and e-mail address of the person who will serve as the key contact for all correspondence regarding this RFP.

A letter of intent is required for the County to provide interested Vendors with a list of any questions received and the County's answers to those questions. Those providing a letter of intent will also be notified of any addenda that are issued.

3.5 Questions Regarding the RFP

Requests for clarification are encouraged. Vendors who request a clarification of the RFP requirements must submit written questions to the RFP Coordinator by 4:00 PM Pacific on January 11th, 2018. Written copies of all questions and answers will be provided to all Vendors who have submitted letters of intent. An email attachment sent to jabbott@pershingcounty.net is acceptable. Responses to all questions submitted by this date will be emailed to Vendors who submitted a letter of intent by 5:00 PM Pacific on January 18th, 2018.

Pershing County reserves the right to deny access of this information to individuals it cannot authenticate as a legitimate contractor or service firm. This is not a process to deny any firm from responding to the RFP, but to ensure that the information remains only in the hands of qualified bidders and limit risk.

3.6 Confidential and Proprietary Information

Pershing County is subject to the Freedom of Information Act and the Nevada Open Meeting Statute ([NRS 241](#)). Vendors must understand that information and other materials submitted in response to this RFP or in connection with any contract because of this RFP may be subject to disclosure as a public record. Therefore, submission of trade secrets or proprietary information or materials is discouraged. Confidential information in the RFP should be clearly marked.

3.7 Worksite Examination

Vendors are invited to walkthrough the worksites on January 4th, 2018. Failure to do so will not relieve the successful Vendor from providing any product or performing any labor or services that may be required to carry out the intent of the contract. Respondents should contact Justin Abbott, IT Technician, jabbott@pershingcounty.net, to schedule.

3.8 Proposal Preparation

3.8.1 General information

The proposal must provide a summary of the firm's qualifications to perform the duties outlined in the requested services section. A complete proposal should include the following sections and statements:

- 1) Cover Letter
 - a) "Proposal may be released in total as public information in accordance with the requirements of the laws covering same." (Proprietary information must be clearly marked)
 - b) "Proposal and cost schedule shall be valid and binding for three hundred and sixty (360) days following proposal due date and will become part of the project that is negotiated with Pershing County."
 - c) Name, title, address, e-mail address, and telephone number of the person or persons to contact who are authorized to represent the firm and to whom correspondence should be directed.
 - d) Proposals must state proposer's federal and state taxpayer identification numbers
 - e) Please complete and attach the following documents from [Section 6.5](#) of this RFP
 - i) Non-Disclosure Agreement
 - ii) Professional Services Agreement
- 2) Proposal Summary
- 3) General Supplier Information
- 4) Scope of Services. The scope of services section should include the following:
 - a) The scope should include development and design objectives for the County network design. The objectives must be defined sufficiently to direct network designs for 10 to 15

years and will include such objectives as increased reliability of County administrative computing functions and data storage, increased protection against cyber security threats, increased accessibility, flexibility, and expansion, increased use of cloud-based services and enhanced network security for both business and NCJIS-standards restricted networks.

- b) A detailed view of the tasks included in the current network assessment; the new network design, network construction, and network equipment acquisition/provisioning
 - i) A timeline for the current network assessment
 - ii) A timeline for the new network design
 - iii) a timeline for test and eventual turnover of the infrastructure/transport medium to Pershing County.
 - c) The transport medium fiber/fixed wireless or other transport medium proposed to service each Pershing County location.
 - d) The terms and conditions of access to the transport medium used to serve each location, namely will the transport medium be:
 - i) Built for and owned by Pershing County
 - ii) Built for and owned by a third-party service provider and leased to Pershing County
 - e) The timeline for order, receipt, test, and installation of the equipment necessary to provision the new Pershing County Government Network
 - f) The scope of work included in the ongoing maintenance and operation of the transport medium.
 - g) The scope of work included in the ongoing technical support of the network equipment.
- 5) Price Proposal
 - 6) Customer Reference
 - 7) Examples of Prior Work
 - 8) Key Project Staff Background Information

NOTE: In addition to the included forms, Vendor must provide at least one example report from previous similar work. Sensitive customer information may be redacted if necessary.

3.8.2 Proposal Preparation Costs

The Vendor is responsible for all costs incurred by the Vendor or their subcontractors in responding to this request for proposal.

3.8.3 Right to Request Additional Information

Pershing County reserves the right to request any additional information, which might be deemed necessary after the completion of this document.

3.8.4 Ownership of Responses

All materials submitted, including but not limited to proposals, attachments, and supporting documents shall become the property of Pershing County and will not be returned.

3.9 Selection Criteria

Vendors will be evaluated based on the following selection criteria.

3.9.1 Compliance to Specifications

- a) Submission deadline compliance.
- b) Proposal format.
- c) Completeness of information supplied.

3.9.2 Experience

- a) Success with similar projects. Vendor should include reference contact information.
- b) Experience with similar tools and applications.
- c) Pertinent experience, qualifications, certifications, and past performance of proposed personnel that will be directly involved in providing services, including Subcontractors.
- d) Experience in similar government environments.
- e) Ability to provide timely on-site services, problem resolution, and telephone support.
- f) Overall capacity of Vendor to successfully provide the required services.
- g) Credentials of installation team members.

3.9.3 Proposal Price and Value

- a) Alignment of response to needs.
- b) The flexibility to stage implementation to minimize disruption.
- c) The ability of equipment to interoperate with existing systems or those of a different manufacturer should one vendor offer products that fill the requirements better and provide more features.
- d) Management system features.
- e) Comprehensiveness of reporting.
- f) Cost
- g) Reference checks

3.9.4 Federal or State Sales, Excise or Use Taxes, and Permits

Vendors shall include all applicable taxes (Federal, State, and Local) in the proposal price.

Pershing County is exempt from Nevada sales tax. Vendor shall be responsible for obtaining any applicable permits should their proposal include special construction.

3.9.5 Selection Process

- a) Pershing County staff will evaluate, and rate proposals based on the written information provided in the proposal.
- b) A selection of recommended Vendors will be contacted and given the option to present their proposal at a regular meeting of the Pershing County Board of Commissioners.
- c) Based on the written proposal and presentation, the Pershing County Board of Commissioners will select a winning bidder.

3.9.6 Right of Refusal

Pershing County reserves the right to reject any or all proposals, either in whole or in part, or to waive any informalities or irregularities therein that are in the best interest of the County.

Pershing County also reserves the right to postpone or cancel the award or execution of a contract for any reason prior to contract execution.

3.9.7 Turnkey Solution and Right to Negotiate Price

The proposal price will be the total dollar amount of all services, materials, taxes, shipping, travel/lodging/meals and labor described herein inclusive of warranties and shipping. The proposal amount is to be held firm for at least 360 days from the proposal opening date.

All prices quoted must include

1. All costs related to the completion of the current network assessment and completion of the proposed new network design.
2. All costs of the proposed equipment necessary to make the system specified fully operational for the intended function and purposed stated herein.
 - a. All costs related to network design and engineering of the equipment
 - b. All costs related to the order, receipt, storage, test, installation, provisioning and transition from current network to new network.
3. All costs in fiber/fixed wireless or other transport medium construction or lease. If Pershing County will own the transport medium that creates the Pershing County hub and spoke network. Costs should include:
 - a. All labor and materials.
 - b. All permitting, pole attachment fees, easement fees.
 - c. All project management costs.
 - d. All engineering costs including any environmental assessments.
 - e. All other costs related to construction preparation, construction planning, and construction work.
4. All costs involved in lease of fiber/fixed wireless or other transport medium if a third-party will own the proposed transport medium and will lease the transport medium to Pershing County Government.
5. All costs related to ongoing maintenance of the transport medium to each site for at least the first 5 years of operation. Specifications for maintenance and operation of the transport media are in Appendix B.
6. All costs related to ongoing technical support of the network equipment for at least the first five years of Pershing County ownership.
7. All costs of other activities proposed by the vendor as part of this project.

Pershing County reserves the right to negotiate all final terms of the proposal, including price.

3.9.8 Proposal to Become Part of Agreement

This RFP, Vendor's response and any subsequent written communications, along with any formal, signed agreement will become part of the contract documentation governing performance of this project. Where conflicts exist, the later dated document will govern.

3.9.9 Approval by Board of Commissioners

Final contract award is subject to approval by the Pershing County Board of Commissioners (PCBOC) during the regular meetings held the first and third Wednesday of each month.

4 Work Description

Vendor proposals should address how each phase of work and each task will be undertaken

4.1 Scope of Work

Phase 1 will be the preparation phase for implementation of the new network. This phase will include a well-defined process for decommissioning of the current network and transition to the new network.

All decommissioning work should describe the transition of equipment and services (including voice, firewall, and other security) from the previous network environment to the new network environment.

Phase 2 will be engineering, design, and construction of the new network transport medium.

For the new network environment, PCIT proposes that the following network equipment or equivalent makes and models be considered for use in the network design:

- Core: Cisco Catalyst 3850 or 9400
- Firewall: Cisco ASA 5545-X w/FirePower HA Pair or Watchguard Firebox M270 HA Pair
- Distribution: Cisco Catalyst 3850 or 9300
- Access: Cisco Catalyst 2960 or HPE 1950 (if compatible with layer 2 MACSec to meet CJS standards)

For construction of fiber/fixed wireless or any new transport medium, Pershing County requests that the aerial and buried fiber construction standards listed in [6.6.1 Appendix A](#) of the RFP be used as standards to determine a cost to design, engineer, manage the project, and construct the new network.

Phase 3 will involve ordering, receiving, preparing and deploying the core switching, including any outside plant construction preparing and deploying distribution switches and devices, including support for a VoIP phone system, preparing and deploying the access layer devices and performing server and workstation cutover to new network infrastructure, and training PCIT personnel to manage and maintain new network infrastructure.

4.1.1 Phase 1: Discovery and Direction

4.1.1.1 Review Current Network

PCIT expects that proposals in response to the RFP will include, at a great level of detail, a new network design including equipment, transport medium/infrastructure, and ongoing maintenance and operations. PCIT also understands that there will be a period of discussion between PCIT and the awarded vendor where design modifications that do not significantly impact quoted costs, will be undertaken. This phase of work will cover these discussions.

Currently, each county facility contains its own flat network or networks. There are no interconnections between facilities. The telephone is based on the out-of-service Nortel NORSTAR MICS PBX system.

Considerations to review in the Discovery phase include:

- Physical copper cable plant
- Network readiness for VoIP Services
- Network readiness for Security Camera Services over IP
- Network Equipment firmware versions and resolved issues
- Network capacity to support NCJIS communications including:
 - Network security in the Pershing County Sheriff's Office
 - Network security in the Pershing County District Attorney's office
 - Secure remote access for Sheriff's deputies from vehicles and/or substations in Rye Patch, Imlay, and Grass Valley.
- Network resiliency

4.1.1.2 Describe Current Needs

- Several single points of failure exist due to the organic design and growth of the current network infrastructure. Resiliency through VLAN connections is desired by PCIT. Vendors should highlight how their design minimized single points of failure.
- Network and security devices need replacement.
- Network segmentation to isolate and secure data is needed.

4.1.1.3 Deliverables (PDF and Source Files)

- Summaries of meetings
- Summary of findings and recommendations
- Cloud-based index of all discovered information

4.1.2 Phase 2: Network Design

4.1.2.1 Design and Documentation

Prepare and present final formal design documentation, including drawings, plans, spreadsheets, specifications, Bill of Materials, technical specifications for layer 1 connectivity, and estimated construction costs that address the current needs and support the approved design objectives. Provide draft copies for review and comment. Incorporate comments from Pershing County staff and provide final copies of network design documents.

4.1.2.2 Deliverables (PDF and Source Files)

- Drawing – Proposed Logical Network Topology
- Drawing – Proposed Physical Network Topology including recommendations for spares
- Drawings – Signal Plans showing all existing and proposed fiber optic equipment locations and conduit routing (Fiber Optic Network)
- Diagrams and Maps – Proposed Transport Medium to each served location. These will be replaced by as-builts in the construction phase.
- Drawing – Proposed security architecture showing logical firewall boundaries, proposed Intrusion Prevention Systems, and proposed endpoint protection methods to protect NCJIS Standards restricted infrastructure (Demarcation Network)
- Supporting layer 1 connectivity technical specifications that support network design
- VLAN Segmentation plan

- Spreadsheet – Proposed Bill of Materials
- Electronic Vendor Datasheet for each piece of equipment proposed
- Outline specifications covering products and installation
- Estimate of probably construction cost
- Cloud-based storage of draft and final deliverables

4.1.3 Phase 3: Procurement Assistance and Implementation

4.1.3.1 Cost Finalizing and Construction

A cost estimate will be provided in the RFP response. This phase will allow for cost modifications of an immaterial nature.

This task covers the equipment procurement along with the implementation costs for the recommended equipment and infrastructure. Notice to proceed may be given for this task only after Phase 2 Network Design Deliverables has been approved and associated costs have been agreed upon.

Feature Guidelines

Switch Features Required

- DHCP Snooping
- ARP Protection/Inspection
- Stacking Capability
- GUI Management
- Layer 2 Encryption (MACSec) on Distribution layer conforming to FIPS 140-2
- Layer 3 Encryption (IPSec) on Core layer conforming to FIPS 140-2
- Quality of Service controls for VoIP

Wireless Features Required

- 802.1X Authentication
- Automatic Roaming
- Guest Wireless access with temporary passwords
- GUI Management

Firewall Features Required:

- High Availability
- FIPS 140-2 Compliant
- Intrusion Detection and Prevention
- Botnet Prevention
- Command & Control Prevention
- Deep Packet Inspection
- Content Filtering (quota time features optional but preferred)
- Application awareness and quality of service controls
- Multi-factor authentication for client-based, clientless, and/or site-to-site VPN connections
- Multiple VLAN support

- VoIP compatibility controls

Quoting Guidelines

Actual equipment procurement will be based on previous tasks. For this phase, prepare a quotation for equipment based on the final network design from Phase 2. The quotation should include a per-device implementation cost.

4.1.3.2 Training

Provide the cost for the following onsite training time:

- 24 hours (3 business days) training on switching infrastructure management.
- 8 hours (1 business day) training on firewall administration.
- 8 hours (1 business day) training on monitoring tools.
- 12 hours of on-call training support for each area.

4.1.3.3 Deliverables (PDF and Source Files)

Provide the following documents:

- Spreadsheet of all usernames, passwords, IP addresses, serial numbers, and location of installed equipment.
- Drawings – As-Built Logical Network Topology
- Drawings – As Built Physical Network Topology and Signal Plans
- Drawings – As-Built Security architecture showing logical firewall boundaries, proposed Intrusion Prevention Systems, and proposed endpoint protection methods to protect CJIS- Standards restricted networks
- Drawings – As-Built Equipment Rack Elevations

Provide cloud-based storage of drafts and finals for all drawings, training syllabi, equipment manuals, and all other printed material developed for this task.

5 Budget & Schedule

All Vendors must fill out the following cost breakdown for their proposal for Pershing County’s project as described in this RFP. The Vendor must agree to keep these prices valid for 90 days as of the proposal response due date.

5.1 Fee Proposal

All Vendors must provide an estimated cost summary in the fee proposal that includes all items shown below:

Phase Description	Hours	Rate	Subtotal	Expenses	Total
<i>1 – Discovery and Direction</i>					
<i>2 – Network Design</i>					
<i>3.1 – Equipment Cost Purchase Price</i>					
<i>3.2 – Implementation</i>					

<i>Phase Description</i>	Hours	Rate	Subtotal	Expenses	Total
<i>Project Cost Totals</i>					

5.2 Schedule

All Vendors must provide a project schedule in GANNT chart form for all tasks.

5.3 Invoicing

The winning Vendor will be paid monthly for services completed during the previous month. The monthly invoice will include a progress report and a billing report showing hours billed by individual hourly rates, labor subtotal, and other expenses. These expenses will be summarized per task and must support the budget summary in the progress report.

6 Additional Information

6.1 Personal Information

6.1.1 General

Depending on the circumstances, Pershing County may require information related to the qualifications, experience, and availability of Vendors who are proposed to provide services. This may include, but is not limited to, the Vendor's income statement and balance sheet for each of the two most recently completed fiscal years certified by a public accountant, resumes, documentation of accreditation, and/or letters of reference.

Any personal information that is requested from this RFP by Pershing County shall only be used to *consider* the qualified individuals to undertake the project/services and to confirm that the work performed is consistent with these qualifications. It is the responsibility of the Vendor to obtain the consent of such individuals prior to providing the information to Pershing County. Pershing County will assume that the appropriate consents have been obtained for the disclosure to and use by Pershing County of the requested information for the purposes described.

6.1.2 Consent for Criminal Justice Information Background Checks and Training

In accordance with state and federal policies, the winning Vendor must sign a security addendum which specifically authorizes and restricts access to those systems. In addition, any employees which will work on CJIS-Restricted systems must consent to the following:

- Fingerprint-based background check
- Wants and warrants checks
- CJIS security awareness training

6.2 Governing Law

This RFP and the response shall be governed by the laws of the State of Nevada.

6.3 Statement of Liability

Pershing County shall not be liable to any person or entity for any losses, expenses, costs, claims, or damages of any kind:

- Arising out of, by reason of, or attributable to, the Vendors responding to this RFP; or
- As a result of the use of any information, error, or omission contained in this RFP document or provided during the RFP process

6.4 Entire RFP

This RFP, any addenda to it, and any attached schedules, constitute the entire RFP.

6.5 Attachments

6.5.1 Service Locations Map

A map of public facilities in Pershing County can be accessed at:

[Pershing County Government Location Map](#)

A Google Earth KML file may be provided on request.

6.5.2 Non-Disclosure Agreement

To be sent after receiving letter of intent.

6.5.3 Professional Services Agreement

To be sent after receiving letter of intent.

6.5.4 US-DOJ/NV-DPS Security Standards

- [FBI Criminal Justice Information Systems Security Policy](#) - Refer to Sections 5.5 through 5.10 and 5.13 of the CJIS Security Policy.
- [Nevada Criminal Justice Information System Administrative Policies](#) – Refer to Section 3 of the NCJIS Administrative Policies.
- [NIST FIPS 140-2](#)

6.6 Appendices

6.6.1 Appendix A: Fiber Construction Guidelines

6.6.1.1 Material Requirements

- Material will comply with those standards as established by UL or NEMA and shall be commercial grade. All materials will be new and free from defects.
- Selected contractor and its subcontractors will provide all material management to ensure that the project remains on track according to the project milestones.
- All due caution will be exercised in transporting and off-loading all materials to prevent any damage during shipping or placement. Any damage to any materials after the initial receipt and inspection by the respondent will be the sole responsibility of the respondent, who will replace such damaged material at no additional expense to PCIT.
- If a buried proposal, all buried conduit shall be EMT (Electrical Metallic Tubing) multi-duct with at least three innerducts. EMT fitting shall be gland or set screw type, and each conduit shall be equipped with a graduated pull tape or rope.
- If a buried proposal, the exact requirements for location and type of conduit within the building shall be verified with building owner.
- If a buried proposal, all Hand Holes shall be Nevada Department of Transportation (NDOT) approved, 45,000 lb. load-rated CDR or comparable enclosures on roadways and railways, and pedestrian-rated hand holes for non-roadways and railways.
- If a buried proposal, large-radius sweeps shall be provided where required for offset or change in direction of conduit. Bend radius rating of the cable must be adhered to for all conduit bends, pull boxes, and hand holes.

- Fiber must be single-mode with the following specifications:
 - TU-T G.652.C/D compliant
 - Maximum attenuation @ 1310nm: 0.34 dB/km
 - Maximum attenuation @ 1385nm: 0.31 dB/km
 - Maximum attenuation @ 1550nm, 0.22 dB/km
- Connector types should be LC unless otherwise specified by PCIT.
- Any warranties associated with the fiber and any other outside plant materials must revert to PCIT as the fiber owner upon completion of construction.

6.6.1.2 Specifications

Survey

- Comply with all ordinances and regulations. Where required, secure permits before placing or excavating on private property, crossing streams, pushing pipe, or boring under streets and railways. Pre-survey shall be done prior to each job.
- If a buried proposal, respondent will locate underground lines of third-parties in cable route area.

Permits and Traffic Control

- The respondent must adhere to all applicable laws, rules, and requirements and must apply for permits to place infrastructure per specification per county or city ordinance applicable to where the infrastructure is being placed.
- All traffic control, in accordance with local, state, county, or permitting agency laws, regulations, and requirements, will be the respondent's responsibility. The respondent's construction schedule will take into consideration enough time for the development and approval of a traffic control plan.

Tracer Wire Installation

- If a buried proposal, tracer wire shall be placed with all conduit installed unless armored or traceable cable is used. The respondent will provide the tracer wire and shall install, splice, and test (for continuity) the tracer wire. If the tracer wire is broken during installation, the wire should be repaired and tested for continuity after repair.
- If a buried proposal, for multi-duct installation, install a 5/8" x 8" copper-clad ground rod in the hand-hole located on public right-of-way. Place a #12 insulated copper locate wire from the ground rod to the fiber optic termination room or place a ground rod on the outside of the building. Locate block in an accessible location. This is for "locate purposed only," not for grounding purposes. Not on as-built where ground is placed, and tag located wire as "locate wire."

Depth of Burial (if a buried proposal)

- Except where otherwise specified, the cable shall be placed to a minimum depth of 36" along roadways and 24" on private property. Greater cable depth will be required at the following locations:

- Where cable route crosses roads, the cable shall be placed at a minimum depth of 48” below the pavement or 36” below the parallel drainage ditch, whichever is greater, unless the controlling authority required additional depth, in which case the greatest depth will be maintained.
- Where cable crosses existing sub-surface pipes, cables, or other structures: at foreign object crossings, the cable will be placed to maintain a minimum of 12” clearance from the object or the minimum clearance required by the object’s owner, whichever is greater.

Highway, Railroad, and Other Bored Crossings (If a buried proposal)

- All crossing of state or federal highways and railroads right-of-way shall be made by boring and placing a pipe casing. The cable shall be placed through the pip casing. Country road and other roadways shall be bored, trenched, or plowed as approved by the appropriate local authority.
- All work performed on public right-of-way or railroad right-of-way shall be done in accordance with requirements and regulations of the authority having jurisdiction there under.
- Respondent shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn.
- Where the cable route crosses railroad right-of-way, the cable shall be placed at a minimum depth of 60” below the railroad surface or 36” below the parallel drainage ditch, whichever is greater, unless the controlling authority requires additional depth, in which case the greatest depth will be maintained.

Cable Markers (If a buried proposal)

- Cable markers shall be placed within 48 hours of cable installation. Unless the right-of-way or property owner specifies otherwise, cable markers shall be placed at all change in directions, splices, fence line crossings, at road and stream crossings, and other points on the route not more than 1,000 feet apart.
- In addition, on highway right-of-way, the markers shall be located at the highway right-of-way line. Markers shall always be located so that they can be seen from the location of the cable

Hand Holes (If a buried proposal)

- Hand holes will be placed in accordance with standard industry practice following the specifications provided in the construction plans, typical drawings, and detail drawings. Special attention and planning must be exercised to ensure accessibility by other groups after construction has finished.
- All hand holes, unless otherwise stipulated by the drawings, will be buried with 12” to 18” of cover at final grade.
- Immediately after placement, the soil around and over the hand hole will be tamped and compacted. Should a wash-outs occur, the respondent will be responsible for correcting the problem immediately without additional cost to PCIT.
- After cable placement, all ducts will be sealed.
- All splice hand holes/manholes will be grounded.

- A minimum of 1—' coil of cable shall be left in each hand hole/building for splicing use.

Splicing (both buried and aerial)

- Fiber to fiber fusion splicing of optical fibers at each point, including head ends, is required.
- Complete testing services, such as end to end, reel testing, and splice loss testing, ORL, power meter/laser source testing and WDM testing is required.
- Individual splice loss will be 0.10 dB for single-mode unless after 3 attempts these values cannot be achieved, then the fibers will be re-spliced until a splice loss within 0.05 dB of the lowest previous attempts is achieved. Splice loss acceptance testing will be based on the fusion splicer's splice loss estimator.
- All cables to buildings shall be fusion spliced within a minimum of 50' of entering a building at a location to be determined by the owner with an existing single-mode fiber and terminated at customer's rack.

Aerial Plant

- PCIT is open to aerial fiber runs using existing utility poles, but respondent must adhere to pole owners' requirements for clearances, spans, grounding, guys, and attachments.

Testing Cable (both buried and aerial)

- The respondent shall be responsible for on-reel verification of cable quality prior to placement.
- Completed test forms on each reel shall be submitted to PCIT.
- Respondent assumes responsibility for the cable after testing. This responsibility covers all fibers in the cable.
- The respondent shall supply all tools, test equipment, consumables, and incidentals necessary to perform quality testing.
- The cable ends shall be sealed upon completion of testing.
- In addition to splice loss testing, selected respondent will perform end-to-end insertion loss testing of single-mode fibers at 1310nm and 1550 nm from one direction for each terminated fiber span in accordance with TIA/EIA-526-7 (OFSTP 7). For spans greater than 300 feet, each tested span must test to a value less than or equal to the value determined by calculating a link loss budget.

Restoration (both buried and aerial)

- All work sites will be restored to as near their original undisturbed condition as possible. All cleanup will be to the satisfaction of PCIT and any permitting agencies.
- Respondent shall provide a brief description of restoration plans in the response, with the expectation that a more detailed restoration plan will be delivered prior to beginning construction.
- Work site restoration will include the placement of seed, mulch, sod, water, gravel, soil, sand, and all other materials as warranted.

- Backfill material will consist of clean fill. Backfilling, tamping, and compaction will be performed to the satisfaction of PCIT, the representative of any interested permitting agency, and/or the railroad representative.
- Respondent will be responsible for any restoration complaints arising within one year after PCIT's final acceptance.
- Excess material will be disposed of properly.
- Debris from clearing operations will be properly disposed of by the respondent/subcontractors as required by permitting agencies or the railroad. Railroad ties, trees, stumps, or any foreign debris will be removed, stacked, or disposed of by the respondent as per requirements by other interested permitting agencies, and/or PCIT.
- Road shoulders, roadbeds, and railroad property will be dressed up at the end of each day. No payment for installation will be permitted until cleanup has been completed to the satisfaction of any permitting agencies, and/or PCIT.
- Site clean-up will include the restoration of all concrete, asphalt, or other paving materials to the satisfaction of the other interested permitting agencies, and/or PCIT.

Documentation (both buried and aerial)

As-built drawings will include:

- Fiber cable routes.
- Drawings, site drawings, permit drawings, and computerized design maps and electronically stored consolidated field notes for the entire route must include:
 - Verification of as-built and computerized maps
 - Splicing locations
 - Optical fiber assignments at patch panels
 - Optical fiber assignments at splice locations
 - Installed cable length
 - Date of installation
 - Aerial installation documents should include:
 - Pole attachment inventories
 - Pole attachment applications
 - Pole attachment agreements between respondent and other utilities
 - GPS points of reference for utility poles
 - Photo images of poles to which fiber is attached
 - Underground installation documents should include:
 - Conduit design and detailing
 - Manhole detailing
 - Preparation of all forms and documentation for approval of conduit construction and/or installation
- Fiber details will include:
 - Manufacturer
 - Cable type and diameter
 - Jacket type: single-mode
 - Fiber core and cladding diameter

- Fiber attenuation per kilometer
- Fiber bandwidth and dispersion
- Index of refraction
- OTDR documentation will include:
 - Each span shall be tested bi-directionality from endpoint to endpoint
 - Each span's traces shall be recorded and mapped. Each splice loss from each direction and the optical length between splices as well as any of the information required by Span Map
 - Reel acceptance
 - Individual fiber traces for complete fiber length
 - Paper and computer disk records of all traces
 - Losses of individual splices
 - Anomalies
 - Wavelength tests and measurement directions
 - Manufacturer, model, serial number, and date of last calibration of OTDR
- Power Meter documentation will include:
 - Total link loss of each fiber
 - Wavelengths tested and measurement directions
 - Manufacturer, model, serial number, and date of last calibration for all equipment used

6.6.1.3 References, Standards, and Codes

Specifications in this document are not meant to supersede state law or industry standards. Respondents shall note in their response where their proposal does not follow the requested specification to comply with state law or industry standard. The following standards are based upon the *Customer-Owned Outside Plant Design Manual (CO-OSP)* produced by BICSI, the *Telecommunications Distribution Methods Manual (TDMM)* also produced by BICSI, ANSI/TIA/EIA and ISO/IEC standards, and NEC codes, among others.

It is required that the respondent be thoroughly familiar with the content and intent of these references, standards, and codes and that the respondent be capable of applying the content and intent of these references, standards, and codes to all outside plant communications system designs executed in behalf of PCIT.

Listed in the table below are references, standards and codes applicable to outside plant communications systems design. If questions arise as to which reference, standard, or code should apply in a given situation, the more stringent shall prevail. As each of these documents are modified over time, the latest edition and addenda to each of these documents is considered to be definitive.

Table 1 — References, Standards, and Codes

Standard/Reference	Name/Description
BICSI CO-OSP	BICSI Customer-Owned Outside Plant Design Manual
BICSI TDMM	BICSI Telecommunications Distribution Methods Manual
BICSI TCIM	BICSI Telecommunications Cabling Installation Manual
	Customer-Owned Outside Plant Telecommunications Cabling Standard
TIA/EIA – 568	Commercial Building Telecommunications Cabling Standard
TIA/EIA – 569	Commercial Building Standard for Telecommunication Pathways and Spaces
TIA/EIA – 606	The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
TIA/EIA – 607	Commercial Building Grounding and Bonding Requirements for Telecommunications
TIA/EIA - 455	Fiber Optic Test Standards
TIA/EIA - 526	Optical Fiber Systems Test Procedures
IEEE 802.3 (series)	Local Area Network Ethernet Standard, including the IEEE 802.3z Gigabit Ethernet Standard
NEC	National Electric Code, NFPA
NESC	National Electrical Safety Code, IEEE
OSHA Codes	Occupational Safety and Health Administration, Code of Federal Regulations (CFR) Parts 1910 - General Industry, and 1926 - Construction Industry, et al.

6.6.2 Appendix B: Transport Medium Maintenance Specifications

Maintenance Terms and Conditions

Respondent shall maintain the applicable fiber or other transport medium seven days per week, twenty-four hours per day for at least the first 60 months of use. Upon notification from PCIT of a malfunction relating to the applicable fiber or other transport medium, respondent shall respond to such malfunction within two (2) hours and thereafter proceed to correct the malfunction with reasonable diligence. When pricing maintenance, the respondent should include an overview of maintenance practices including:

- Routine maintenance and inspection
- Scheduled maintenance windows and scheduling practices for planned outages

- Marker and hand-hole inspection and repair (fiber only)
- Handling of unscheduled outages and customer problem reports
- What service level agreement is included and what alternative service levels may be available at additional cost
- What agreements are in place with applicable utilities and utility contractors for emergency restoration
- Repair of fiber breaks (fiber only)
- Mean time to repair
- Replacement of damaged fiber (fiber only) or other transport medium
- Post repair testing
- Replacement of fiber or other transport medium that no longer meets specifications (fiber only)
- Policies for customer notification regarding maintenance
- Process for changing procedures, including customer notification practices
- Process for moves, adds, and changes
- Process for and costs related to responding to locate requests (fiber and/or other in-ground transport medium)