

EXHIBIT A – SCOPE OF WORK

Owner is soliciting proposals for a fiber optic wide area network solution for key locations identified in the Scope of Services below, as well as Internet Access for the whole campus.

SCOPE OF SERVICES

Pecos Independent Schools District wishes to compare Lit Services and self provisioned fiber construction for the completion of their district Wide Area Network (WAN). The current WAN for the specific locations listed provides some fiber that can only provide up to 1 Gbps of bandwidth, the goal is to be able to provide a scalable solution that can provide 10Gbps between all facilities.

The district also wishes to upgrade the current Internet Access speed. The district is seeking Internet Access speed of at least 100Mbps scalable to 10Gbps. currently, the district has 45 Mbps of Internet Access delivered via a DS3.

The district will continue with existing services until the new service is available. The new service is being planned to begin on June 30, 2017.

All options can include special construction or one-time E-rate eligible non-recurring costs as well as E-rate eligible recurring circuit costs. Based on the bids and both a short term and long term cost effectiveness analysis, Pecos Independent Schools District will determine which, if any, of the lit service or self-provisioned fiber is the most cost effective, long term solution that meets the current and expected future needs of the school district. Weighted consideration for integration into the current district owned fiber optic WAN, and existing maintenance processes for that WAN, will be made during the evaluation process. The specifications related to each solution option are as follows.

Location Name	Latitude	Longitude	Address
WAN			
Elementary School+	35.579384	-105.679516	N HWY 63, Pecos, NM 87552
Middle School+	35.582456	-105.677842	N HWY 63, Pecos, NM 87552
High School *	35.582909	-105.679104	N HWY 63, Pecos, NM 87552
District Office+	35.582979	-105.680134	N HWY 63, Pecos, NM 87552
Transportation+	35.580484	-105.679512	N HWY 63, Pecos, NM 87552
Maintenance+	35.579786	-105.681496	N HWY 63, Pecos, NM 87552
HS Gym+	35.583773	-105.678439	N HWY 63, Pecos, NM 87552
Pre-K School+	35.579489	-105.680445	N HWY 63, Pecos, NM 87552
MS Portable+	35.581932	-105.677784	N HWY 63, Pecos, NM 87552
INTERNET ACCESS POINT			
High School	35.582909	-105.679104	N HWY 63, Pecos, NM 87552

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Sites indicated by * have fiber optic WAN connections that should be considered the 'point of entry' to the existing WAN for connecting all other sites on this list.

Sites indicated by + currently have 1Gbps WAN fiber.

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In each building, Contractor must run infrastructure or service to an existing network closet designated by the district.

The district is seeking options for bids. Contractors shall bid for one or more options. For all options selected below, Contractor shall provide a response.

The first option is a fully managed, lit fiber service WAN to these locations. The second option is for self-provisioned fiber construction (district owned fiber) to the designated locations and includes special construction, fiber maintenance and management. The options (as defined in the RFP) are as follows:

Lit Service:

The Owner must have dedicated Lit Transport Bandwidth throughput (upload and download) of 100 Mbps, 1 Gbps, upgradable to 10 Gbps, between the designated endpoints. The solution must be scalable from 100 Mbps, 1 Gbps to 10 Gbps with 1 Gbps cost increments cost increments.

Lit Service Price Proposal

The “Lit Pricing Sheet” worksheet in the attached spreadsheet includes columns for Contractors to provide 100 Mbps, 1G to 10G pricing (in 1Gbps increments) between the hub and the various endpoints. Price quotes are requested for 12 month, 36 month, 60 month, 120 month and 240 month terms of service. Prices shall be all inclusive.

Leased Dark Fiber

Contractors can quote a leased dark fiber network solution between the designated endpoints.

Lease Price Proposal

Each Contractor is required to complete the pricing matrix appended as the “Leased Dark Fiber” worksheet in the spreadsheet accompanying this RFP.

Additional Description

Each leased dark fiber response must also include description of proposal, description of maintenance, SLA, timeline, network diagram, demarcation, references, and Connect America Fund status as described in later sections. Management can be bid “bundled” with a leased dark fiber bid, or as a stand-alone bid and must be described as such.

IRU of Fiber

Contractors shall quote a **XX** year indefeasible right to use (IRU) price for four (4) strands (2 pair) of fiber between the designated endpoints.

IRU Price Proposal

Owner is interested in IRU-type pricing with a one-time capital cost payment for the 20 Year IRU combined with “all-in” recurring payments for maintenance costs for the entire length of the IRU.

Contractor is required to complete the pricing matrix appended as the “IRU” worksheet in the spreadsheet accompanying to this RFP.

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If special construction charges are requested by the vendor for the fiber proposed to be IRU'd, Owner expects significant reductions from prevailing market rates for the IRU fee and annual maintenance charges.

Each IRU response must also include description of proposal, maintenance, SLA, timeline, network diagram, demarcation, references, and Connect America Fund status. Management can be bid "bundled" with a leased dark fiber bid, or as a stand-alone service and must be described as such.

XSelf-Provisioned Fiber Construction

Owner requests that Contractors propose design and pricing for a self-provisioned new build of fiber to the designated endpoints. Twelve (12) strands (6 pair) of single-mode new build fiber are requested.

Contractors shall provide a proposal for an Owner owned fiber network based on a special construction project. New eligible fiber special construction charges as defined by the order include construction, design, engineering and project management. Project management should include all necessary paperwork and permits including but not limited to rights of way, easements, and pole attachments. The Owner desires a fully "turn-key" project so Contractors shall provide explanation for the Owner involvement in the process including ownership and sourcing of permits, etc.

Self-Provisioned Fiber Construction Price Proposal

Contractor is required to complete the pricing matrix appended as the "Self Provisioned" worksheet in the spreadsheet accompanying this RFP. The solution shall include all costs related to the deployment of the proposed circuit. Any additional costs, such as pole lease, etc. and/or recurring costs due after fiber installation shall be itemized and included.

XNetwork Electronics for Dark Fiber (Lease or IRU) and Self-Provisioned Fiber

Contractor is required to submit bids for the modulating electronics required to light the dark or self-provisioned fiber. The proposed solution should be turn-key and provide all of the components required to light the fiber including, but not limited to: LED/Laser fiber optic transceivers, routers, layer 3 switches, associated software, installation, and associated taxes.

Demarcation Point (demarc)

All solutions whether lit fiber, leased dark fiber, dark fiber IRU or self-provisioned fiber construction must terminate service or infrastructure to an existing network closet inside of the designated demarc address specified. Solutions bringing service to the property line but not inside of the demarc address are not acceptable.

All solutions whether lit fiber, leased dark fiber, dark fiber IRU or self-provisioned fiber construction must have a connection, or point of entry, into the existing district fiber optic WAN as indicated previously, alternatives are available through discussions with the district.

Contractor must specify your expected demarc setup included in base fees, e.g. fiber shelf with set-top box CPE and fiber or Cat6a handoff.

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References, Standards, and Codes:

Provided herein are references, standards, and codes applicable to plant communications systems design/construction. If questions arise as to which reference, standard, or code should apply in a given situation, the more stringent shall prevail. As standards, rules, regulations, and laws are modified over time, the latest edition and addenda to any standards, rules, regulations, and laws referenced herein shall be considered to be definitive.

The Contractor shall comply with all applicable Municipal, County, State of New Mexico, National Electrical Code, National Electric Safety Code, and Federal standards, rules, regulations, and laws. Construction and design method/techniques used by the Contractor shall be in accordance with the recommended practices and procedures published by leading industry manufacturers and trade associations, including but not limited to the following:

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
TIA/EIA – 758	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.

The references, standards, and codes referenced herein, are construction and design considerations for plant communications media (cable and connecting hardware) that are of particular concern to the Owner. Contractor is expected to, and in submitting a proposal thereby affirms, to be knowledgeable of, and shall apply the most recent, applicable standards, rules, regulations, and laws specific to the work and services provided under this RFP/Agreement.