

## **EXHIBIT A – SCOPE OF WORK**

<Amy Biehl Charter High School> is soliciting proposals for a fiber optic wide area network solution for key locations identified in the Scope of Services below.

### **SCOPE OF SERVICES**

<Amy Biehl Charter High School> wishes to compare Lit Services, Leased Dark Fiber, IRU (Infeasible Right of Use) Fiber, and self provisioned fiber construction for the completion of their district Wide Area Network (WAN). The current WAN for the specific locations listed provides <fiber>.

Location Name	Latitude	Longitude	Address
<b>Main Building</b>	35.08185	-106.652082	123 4 <sup>th</sup> St SW Albuquerque, NM 87102
<b>Simm’s Building Annex</b>	35.088140	-106.652012	400 Gold St SW Suite 106 Albuquerque, NM 87102

< Amy Biehl Charter High School > has fiber optic WAN connections to the sites indicated by \* and these should be considered the 'point of entry' to the existing WAN for connecting all other sites on this list.

In each building, respondent must run infrastructure or service to an existing network closet designated by < Amy Biehl Charter High School >, identified by site walk-through.

The new service is being planned to begin on <July 1, 2018>.

< Amy Biehl Charter High School > is seeking four options for bids. Respondents may bid for one or more options. The first option is a fully managed, lit fiber service WAN to these locations. The second option is for a leased dark fiber solution that includes special construction, the monthly lease fee, maintenance, and management. The third option is for a dark fiber IRU solution that includes special construction, the IRU fee, fiber maintenance, and management. The fourth option is for self-provisioned fiber construction (district owned fiber) to the designated locations and includes special construction, fiber maintenance and management.

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, < Amy Biehl Charter High School > will determine which, if any, of the lit service, leased dark fiber, IRU, 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.

**Leased Lit Fiber:**

The < Amy Biehl Charter High School > must have dedicated Lit Transport Bandwidth throughput (upload and download) of 500 Mbps upgradable to 10 Gbps, with Service Level Agreement (SLA) guarantees between the designated endpoints. The solution must be scalable from 500 Mbps to 10 Gbps with 1 Gbps cost increments cost increments. **All respondents must be capable of providing telecommunication services under the Universal Service Support Mechanism.**

*Lit Service Price Proposal*

The "Lit Pricing Sheet" worksheet in the attached spreadsheet includes columns for respondents to provide 500 Mbps, to 1G pricing (in 100 Mbps increments) between the hub and the various endpoints. Price quotes are requested for 12 month and 36 month terms of service. Prices should be all inclusive. All inclusive in this case means, including all **special construction or non-recurring costs (NRC)** (see description in later section) required by the vendor to commence service and all **monthly recurring costs (MRC)** should be included in the requisite columns of the pricing sheets. No increased pricing will be allowed during the term of the quoted special construction/NRC and MRC rate in each pricing cell of the spreadsheet.

*Additional Description*

Each lit service response must also include description of proposal, SLA, timeline, network diagram, demarcation, references, and Connect America Fund status as described in later sections.

**Internet Access & Transport Bundled:**

This is for non-fiber services provided over third party networks that include commercial Internet Access service.

**Transport Only - No ISP Service Included:**

*Transport Only- No ISP Service Included option. Applicant desires an XG point to point service be quoted as a comparative option to self- provisioning. This is **any service wired or wireless delivered over a third party owned (Service Provider or other) network that meets the following bandwidth, latency, jitter, packet loss, contention and other Service Level Agreement specifications.***

*Fiber Network Availability: the provider will make all reasonable efforts to ensure 99.99% network availability of each circuit.*

Lit and Operations proposals only: Frame/packet loss .25% commitment

Lit and Operations proposals only: 25 ms Network Latency Commitment

Lit and Operations proposals only: 10 ms Network Jitter Commitment

There is no right of provider to limit or throttle the capacity of the circuit at any time for *Any reason*

**Internet Access: ISP Service Only:**

This is for commercial Internet Access service.

*Remember: This does not contain any type of transport, including leased lit fiber. Do not use this for a leased lit fiber solution.*

**Leased Dark Fiber**

As an alternative, respondents can quote a leased dark fiber network solution between the designated endpoints.

*Lease Price Proposal*

Each respondent is required to complete the pricing matrix appended as the "Leased Dark Fiber" worksheet in the spreadsheet accompanying this RFP. Respondents are encouraged to separate special construction charges as defined by E-rate eligibility rules. Preference will be given to proposals that offer pricing with most of the costs being paid up-front and minimal MRC and annual maintenance costs.

*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.

**Leased IRU of Fiber**

As an alternative, respondents can quote a 5-20 year infeasible right to use (IRU) price for two (2) strands of fiber between the designated endpoints.

### *IRU Price Proposal*

< Amy Biehl Charter High School > 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. Optional installment plan payments of the one-time capital costs spread over 1 to 4 years is acceptable based on offeror’s interest in allowing this. If payments of one-time capital costs are allowed to be made over multiple years please clearly indicate this in the RFP response.

Each respondent is required to complete the pricing matrix appended as the “IRU” worksheet in the spreadsheet accompanying to this RFP. Respondents are encouraged to separate special construction charges as defined by E-rate eligibility rules. Proposals that offer pricing with most of the costs being paid up-front and minimal annual maintenance costs will be viewed favorably, when comparing proposals.

If special construction charges are requested by the vendor for the fiber proposed to be IRU’d, < Amy Biehl Charter High School > 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 as described in later sections. Management can be bid “bundled” with a leased dark fiber bid, or as a stand-alone service and must be described as such.

### **Self-Provisioned Fiber Construction**

As a fourth alternative, < Amy Biehl Charter High School > requests that respondents 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.

Respondents are requested to provide a proposal for a < Amy Biehl Charter High School > 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 < Amy Biehl Charter High School > desires a fully “turn-key” project so respondents should provide explanation for the < Amy Biehl Charter High School > involvement in the process including ownership and sourcing of permits, etc.

Respondents should take note that E-rate Modernization order allows fiber construction vendors to place additional strands, beyond the 12 strands required by < Amy Biehl Charter High School >. On approved projects that meet the E-rate specifications for competitive bid and cost effectiveness, E-rate will pay special construction charges, defined in the Second E-rate Modernization Order as construction, design, engineering and project management fees including the first 12 strands of fiber only. The successful respondent will pay for the incremental cost of additional fibers to the premise of the eligible applicant and then 100% of all incremental construction charges to ineligible applicants.

### *Self Provisioned Fiber Construction Price Proposal*

Each respondent is required to complete the pricing matrix appended as the “Self Provisioned” worksheet in the spreadsheet accompanying this RFP. Preference will be given to proposals that offer pricing with most of the costs being paid up-front and minimal annual maintenance costs. The solution should include all costs related to the deployment of the proposed circuit, such that there are no additional costs that are expected to be incurred by the district.

#### *Self Provisioned Fiber Construction Specifications*

- Respondent shall describe the technical specifications of their design, highlight any specifications that are outside of normal standards, and for what reason,
- Respondent shall identify all potential Right of Way hazards,
- Respondent shall indicate ownership of all poles, conduit, etc on the fiber path,
- The < Amy Biehl Charter High School > shall be responsible for the payment of any permitting fees and shall be the owner of said facilities, but the respondent shall manage the paperwork and filing of the permits,
- All highway shoulders, schoolyards, and ditch lines will be compacted and restored to satisfactory condition,
- Respondent shall perform an end-to-end continuity and loss test on each spliced fiber segment and provide the owner with the db loss of each fiber segment,
- < Amy Biehl Charter High School > will provide, at their discretion, a person(s) to witness any final testing or construction verification. The person designated by < Amy Biehl Charter High School > will be required to initial/provide acceptance of any results. This person(s) will represent < Amy Biehl Charter High School > during any and all acceptance testing. This does not relieve the selected contractor from providing agreed upon documentation or absolve the selected contractor of any warranty support,
- Any warranties associated with the fiber and any other outside plant materials must revert to the district as the fiber owner upon completion of construction,
- Upon completion of project, respondent shall furnish an as-built drawing to the owner.

Each self provisioned fiber build response must also include description of proposal, timeline, network diagram, demarcation, references, and Connect America Fund status as described in later sections. Maintenance and/or management can be bid “bundled” with a self provisioned fiber construction bid, or bid as a stand alone service and must be described as such with a costing sheet for services available.

#### **Other - Network 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 turnkey 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.

### **General Terms for Leased Dark Fiber, IRU, or Self Provisioned Fiber Projects**

The following are general terms that apply to leased dark fiber, IRU, or self provisioned fiber builds. Respondents may offer maintenance services, equipment purchase, installation, and management either themselves or through 3rd party subcontractors. In the case that respondents use external 3rd party service providers or contractors to deliver some or part of the solution, these should be clearly indicated in the response.

#### *Fiber Specification*

#### *Maintenance*

The < Amy Biehl Charter High School > requires on-going maintenance of the fiber on all Leased Dark Fiber, IRU, or self provisioned fiber solutions. Maintenance responses are required as follows:

- All dark fiber responses (lease and IRU) require maintenance as part of the response, even if maintenance is subcontracted out to a third party. In the case of the third party maintenance, the respondent must hold and manage the subcontract and is ultimately responsible for the SLA. For a leased dark fiber and IRU solution, it is assumed that the Fiber Network is part of a more comprehensive fiber infrastructure of the service provider. The respondent will include only the portion of maintenance that is required to support the < Amy Biehl Charter High School > fiber segments versus overall network maintenance. If the fiber serves multiple customers, the cost of maintenance should be shared among all the recipients.
- If maintenance cannot be quoted for entire time span of the IRU, please include alternate time span quote as well as explanation for the shorter time span.
- As part of the maintenance contract for an IRU, the fiber owner (not the district) must claim responsibility for repairs in the event of a catastrophic cut or relocate.
- Self provisioned fiber construction responses are not required to include a maintenance response. Maintenance on self provisioned fiber may be bid as a stand-alone service, however, "bundled" holistic solutions will be preferred, as outlined in the evaluation criteria. Responses for maintenance on self provisioned fiber must include scheduled routine maintenance as a monthly cost as well as unscheduled break/fix maintenance as an annual time and material cost estimate with a guaranteed SLA response time for repairs. Explanation of how the annual scheduled and unscheduled maintenance was estimated should be included.

Respondent shall maintain the applicable fiber seven days per week, twenty-four hours per day. Upon notification from the district of a malfunction relating to the applicable fiber, 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 fiber maintenance practices including:

- Routine maintenance and inspection,
- Scheduled maintenance windows and scheduling practices for planned outages,
- 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,
- Mean time to repair,
- Replacement of damaged fiber,
- Replacement of fiber which no longer meets specifications,
- Policies for customer notification regarding maintenance,
- Process for changing procedures, including customer notification practices,
- Process for moves adds and changes,
- Process for responding to locate requests.

#### *Equipment, Installation, and Management*

The < Amy Biehl Charter High School > requests that the respondent provide a quote for an annual management cost to oversee the technical support of the WAN once the leased dark, IRU, or self provisioned fiber is available for service. Include price details in the “Management” worksheet of the spreadsheet attached for equipment necessary to place the circuits into service at different bandwidth levels, installation and configuration of equipment, and annual management cost of the equipment/circuits. Management on leased dark, IRU, or self provisioned fiber may be bid as a stand-alone service, however, “bundled” holistic solutions will be preferred, as outlined in the evaluation criteria.

The annual management cost should include provision of:

- Procurement of necessary hardware to light the fiber path(s)
- Installation and configuration of equipment to put circuits into service
- Network monitoring on a 24x7x365 basis
- Creation and communication of service tickets to < Amy Biehl Charter High School > escalation list
- Incident response with timing standards that are in accordance to a Respondent provided service level agreement that meets general industry standards
- Other industry standard provisions of broadband service technical support
- Re-provisioning of equipment necessary to put circuits back into service after an outage

#### **Description of Proposal**

Respondent will provide a description of their proposal for all lit services, leased dark, IRU, or self provisioned fiber construction projects. Description will include an overview of the proposal, any deviations from the requested architecture, design or requirements, assumptions made, other detail < Amy Biehl Charter High School > may find useful or necessary (or could differentiate the solution from a competing proposal).

### **Service Level Agreement**

Respondent will provide a description of the proposed services and service levels provided with the lit fiber or dark fiber maintenance and management responses. The respondent will provide a proposed Service Level Agreement (SLA) with the RFP response. The proposal may include, but not be limited to, the following services.

- Lit Fiber Network Availability: the provider will make all reasonable efforts to ensure 99.9% network availability of the applicable fiber.
- Network Operations Center: Solution will provide customer support functions including problem tracking, resolution and escalation support management on a 24x7x365 basis. Customer has the right and is encouraged to call concerning any problems that may arise relative to its connection with Vendor provided services.
- Trouble Reporting and Response: Upon interruption, degradation or loss of service, Customer may contact Vendor by defined method with a response based on trouble level. Upon contact from the Customer, the Vendor support team will initiate an immediate response to resolve any Customer issue. Customer will receive rapid feedback on trouble resolution, including potential resolution time.
- Escalation: In the event that service has not been restored in a timely manner, or the Customer does not feel that adequate attention has been allocated, the Customer can escalate the trouble resolution by request. A list of escalation contacts will be provided when implementation schedule is completed.
- Resolution: The Customer will be notified immediately once the problem is resolved and will be asked for verbal closure of the incident.
- Trouble Reporting, Escalation and Resolution: A detail trouble reporting, escalation and resolution plan will be provided to the district.
- Measurement: Vendor stated commitment is to respond to any outage within two (2) hours and a four (4) hour restoration of service. Time starts from the time the Customer contacts Vendor and identifies the problem. Credits for Outages of shortage will be identified.
- Reports: Upon request, an incident report will be made available to the Customer within five (5) working days of resolution of the trouble.
- Link Performance per segment: The service will maintain the proposed Link Performance throughout the term of the contract.

### **Timeline**

For each response, respondents must include a construction roadmap timeline for all sites. Preference is given to responses with a service start for all sites on <July 1, 2018>. A secondary preference will be given to responses with a service start for all sites <August 1, 2018>. All timelines will be considered and evaluated based on these preferences. Include how the timeline changes per site given an earlier or later start date. Actual start date on a self provisioned fiber construction project is dependent on the timing of the E-rate funding commitment decision letter.



### **Demarcation**

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 during the site walk-throughs provided in the timeline above. 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.

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

### **Network Diagram**

For each response, respondents must include a network diagram displaying the paths to be used to serve each endpoint. For self-provisioned fiber responses, respondents must include identification of aerial vs. buried fiber segments, detailed drawings showing fiber and equipment locations, and any other pertinent details.

### **References**

For each response, respondent must provide 3 references from current or recent customers with projects equivalent to the size of < Amy Biehl Charter High School >. If respondent responds to more than one option (e.g. lit fiber service as well as leased dark fiber), provide 3 references for each.

### **Connect America Fund Consideration**

For each school site, the respondent must note whether the address is included in a region where the respondent has already received (or is pending receipt of) funding via the Connect America Fund. In these cases, mention how the NRC or special construction charges have been adjusted considering the other source of funding.

### **Special Construction and Non-recurring Cost**

Respondents providing lit fiber proposals which require an upfront payment may include a special construction cost or non-recurring cost. This upfront payment is considered **special construction** if any new fiber is being installed. If new fiber installation is not necessary, the payment is considered a **non-recurring cost** and must be entered into the pricing sheet accordingly.

New fiber special construction charges for lit service, leased dark, IRU, or self provisioned fiber projects as defined by the order include construction, design, engineering and project management. The applicant requests that the respondents consider allowing <Amy Biehl Charter High School> to pay the non-discount share (share of special construction costs that are the responsibility of the applicant) to be paid in equal annual installments over the **four** years from Funding Year <2018> to Funding Year 2021 inclusive. Responses must include agreement or non-agreement of this request.

### **Required Notice to Proceed and Funding Availability**

< Amy Biehl Charter High School > will follow the purchasing policies of the < Amy Biehl Charter High School > Board of Education and requirements and procedures of the FCC's E-rate program

as administered by the Universal Service Administrative Company to be eligible for all available funding. The implementation of any associated contracts resulting from this competitive bid process will be dependent on the district's' issuance of a written Notice to Proceed. E-rate funding notification alone will not signify Notice to Proceed. The district will have the right to allow the contract to expire without implementation if appropriate funding does not come available.

**E-rate Modernization Order Note**

Special construction and service eligibility for reimbursement have changed starting funding year 2016. See the Federal Communications Commission E-rate modernization order 2 (WC Docket No. 13-184) (<https://www.fcc.gov/document/fcc-releases-order-modernizing-e-rate-21st-century-connectivity>) for more information.