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Date: November 20, 2017

To: Oklahoma Universal Service Fund ("OUSF") Beneficiaries

Subject: OUSF: Beneficiary guidance for stating bandwidth in the request for bids.

Purpose

This guidance and education was developed to address part of the ongoing OUSF audit recommendations[1]. Any variance from the guidance may result in funding based on the discretion of the OUSF Administrator and may be subject to final order of the Commission. Examples in this guidance do not necessarily show all requirements for receiving federal funding or OUSF funding.

It is **not** the OUSF Administrator's intention for this document to be a "rule" as that term is defined in the Administrative Procedures Act[2]. The Commission did not request, review, or approve this document, and this document does not necessarily reflect the views of the Commission, who is the final arbiter.

Summary

A change in the OUSF rules effective September 11, 2017 requires that OUSF Beneficiaries **include their eligible bandwidth limit** in the bandwidth range on the next request for bids. The intent of this memorandum is to provide guidance on ways Beneficiaries may meet this requirement. Not including the eligible bandwidth limit in the request for bids may result in reduced or no Oklahoma Universal Service Fund ("OUSF") funding. This guidance only applies

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[1] Ostrander Group, Audit of the Oklahoma Universal Service Fund, November 4, 2016
[2] See 75 O.S. § 250.5(17)(C)

to new requests for bids and does not affect current funding or requests for bids placed prior to September 11, 2017.

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Background

The OUSF rules include the following section on specifying bandwidths on requests for bids (underlined portions added September 11, 2017):

> To avoid bid structuring, the bid request shall clearly identify the requested bandwidth range, inclusive of the eligible bandwidth limit, of the OUSF Beneficiary, and shall include a minimum and a maximum bandwidth at standard available levels as suggested in guidelines promulgated by the FCC or Commission rules (OAC 165:59-7-19(a)(2)(C)).

As understanding this section requires knowing the meaning of *bid structuring*, *eligible bandwidth limit*, and *standard available levels*, those terms are explained below. Bid structuring and standard available levels apply to all Beneficiaries. Eligible bandwidth limits depend on the type of Beneficiary (library, school, or eligible healthcare entity).

Bid Structuring

Bid structuring refers to asking for bids in such a way as to discourage an eligible provider, which is capable of providing the requested service, from bidding. Bid structuring is a violation of the OUSF fair and open competitive bidding requirements[3]. The rules do reference specific examples of bid structuring, such as in the quote above or requiring a WAN provider and Internet provider to be the same provider. Other examples of bid structuring for OUSF would be requiring a service facility within a certain distance of the Beneficiary, requiring all service providers to make a mandatory visit on the same date prior to bidding, prohibiting a different last mile provider, or making a change after posting a request for bids that would change which service providers are interested in bidding. This list is not exhaustive; consider anything that might discourage an eligible provider capable of providing the service from bidding as potential bid structuring.

Standard Available Levels

For "standard available levels as suggested in guidelines promulgated by the FCC or Commission rules," the current OUSF rules do not contain guidelines from the Commission. Therefore, guidelines promulgated by the Federal Communications Commission ("FCC") determine standard available levels. Two guidelines are applicable to broadband. One is the

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[3] See 17 O.S. § 139.109.1(B)(5)(d)

FCC-approved National Exchange Carrier Association ("NECA") tariffs[4]. The other is from the FCC Form 470, used in the E-rate program, which requires eligible schools and libraries to select a minimum and maximum bandwidth capacity when requesting most types of Internet or Wide Area Network ("WAN") services.

OUSF Fair and Open Competitive bidding requirements include not structuring bids to exclude OUSF-eligible carriers and having the bidding open to all OUSF-eligible carriers[5]. Non-NECA carriers can offer bandwidths equal to those in the NECA tariffs, but the Beneficiary should be aware that NECA carriers cannot offer all bandwidths on the FCC Form 470 dropdowns. Furthermore, as the maximum NECA Channel Termination is 10 Gbps, any request above 10 Gbps could appear to be bid structuring unless the Beneficiary has the capacity to use such bandwidth and has it in their technology plan to seek such bandwidths.

Beneficiaries may request bandwidths based on bandwidths for the NECA tariffs shown in Table 1 as those can be bid by all Oklahoma providers. These same bandwidths can be used for specifying the bandwidth range. Specifying other bandwidths in a request for bids could have the appearance of bid structuring unless the Beneficiary has a compelling reason for the request.

Table 1. NECA Tariff Bandwidths.

Mbps	Mbps	Gbps
1.5	100	1
5	250	2.5
10	500	5
20	750	10
50		

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[4] The specific NECA tariffs applicable to OUSF-eligible broadband services are those for Ethernet Transport Service ("ETS") Channel Termination ("CT"; NECA Tariff 5, July 1, 2017, 16.13.4(A)(1)). Channel termination refers to the connection to the end users while Ethernet refers to the common Ethernet protocol being used for transport. The lowest bandwidth on the ETS-CT tariff is 5 Mbps , but other NECA tariffs (NECA Tariff 5, July 1, 2017, 16.2.4(A)(1)(a)) allow for 1.5 Mbps (1.544 Mbps) as part of a DS1 (T1) Asynchronous Transfer Mode service.

[5] See 17 O.S. § 139.109.1(5)(c-d)

FCC Form 470 - Specifying Bandwidth Range

Beginning with E-rate Funding Year 2016, the FCC implemented lists with bandwidths on the FCC Form 470. Eligible schools and libraries are required to select a minimum and maximum bandwidth capacity from drop-down lists on the FCC Form 470 when requesting most types of Internet or WAN services. Levels above 1 Mbps on the FCC Form 470 drop-downs are shown in Table 2.

Table 2. FCC Form 470 Bandwidth Options above 1 Mbps.

Mbps	Mbps	Gbps
1.5	100	1
5	200	2
10	300	5
25	400	10
50	500	25
	750	

Tariff constraints prevent NECA members from bidding on all of the values that are in the lists in the FCC Form 470 but, as noted above, all providers may bid the bandwidths in the NECA tariffs. Bandwidths at the intersection of the NECA tariff bandwidths and the bandwidths on the FCC Form 470 as listed in Table 3 are available to all providers.

Table 3. Standard Available Levels for Specifying Minimum and Maximum Capacities on the FCC Form 470.

Mbps	Mbps	Gbps
1.5	100	1
5	500	5
10	750	10
50		25*
*Only for Beneficiaries that have the internal capacity to use more than 10 Gbps and that wish to receive bids above 10 Gbps.		

Other levels may be used as a standard available level, but Beneficiaries should verify that the request does not result in structuring the bid to exclude a provider.

Eligible Bandwidth Limit - All Beneficiaries

Each Beneficiary may select from the bids at whatever bandwidth it wishes. While each entity must include its eligible bandwidth limit in the range in the bid in order to meet OUSF Fair and Open Competitive Bidding requirements, the entity chooses the bandwidth it wants. Furthermore, if a Beneficiary's internal network or equipment is not capable of supporting the maximum bandwidth, the Beneficiary may make the statement in its bid request description regarding the maximum capacity that its network can handle. Such a statement might be, "Our internal network is currently capable of 1 Gbps connections and any services bid must be capable of operating with the network via 1 Gbps Ethernet cable." The Beneficiary may also request that bids be provided at standard available levels below the maximum bid.

Bandwidth may be rounded up to the next available standard service increment to avoid increased costs to the fund[6].

The eligible bandwidth limit is established in 17 O.S. § 139.109.1 for each kind of entity, with the rules providing more detailed explanations. Please see the appropriate section below for more information.

Eligible Bandwidth Limit - Libraries

Libraries that have a service area with a population of 50,000 or fewer must include the FCC minimum recommendation of 100 Mbps in their bandwidth range on their bid. Libraries that have a service area of more than 50,000 must include the FCC minimum recommendation of 1 Gbps in their bid.

- Individual library (not a system library or branch library) - Include with the bandwidth range the minimum bandwidth (100 Mbps or 1 Gbps) based on the service area of the entire system.

- Library Systems - Each individual library would include within their bandwidth range the minimum bandwidth (100 Mbps or 1 Gbps) based on the service area of the entire system.

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[6] See OAC 165:59-7-8(c).

- Libraries with branches - Each individual library would include within their bandwidth range the minimum bandwidth (100 Mbps or 1 Gbps) based on the total service area of the main library and branches.

The library should use the values in Table 3 for selecting the minimum and maximum bandwidth on the FCC Form 470. If a library selects a bid with more than the 100 Mbps, or 1 Gbps for larger libraries, it does not need to justify the bandwidth selected in order to receive OUSF funding[7]. E-rate rules do require that the selected bid be the most cost effective means of meeting educational and technology goals[8].

Library Example

- Town Municipal Library (TML) has two separate public library branches, the larger being Mayor Memorial and the smaller being Smith Memorial.

- Because the TML service area has a population of 45,000, the library has an eligible bandwidth limit of 100 Mbps that must be included in the bandwidth range.

- As TML has two facilities, the E-rate request for each of the facilities will include 100 Mbps in the bandwidth range.

- The library director knows she needs more than 100 Mbps per second at the larger branch, Mayor Memorial. She therefore fills out the FCC Form 470 requesting 100 Mbps as the lower limit, and 500 Mbps as the upper limit for Mayor Memorial.

- For Smith Memorial, she requests 50 Mbps to 100 Mbps.

- In the FCC Form 470 narrative, she writes:

  o Our intent is to conform to OUSF fair and open competitive bidding requirements. All technologies will be considered. All OUSF-eligible providers are invited to bid.
  o All costs must be included in the bid.
  o All cost not eligible for OUSF funding must be listed separately.
  o Bid request is for symmetric bandwidth through Dedicated Internet Access.

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[7] See 17 O.S. § 139.109.1(A)(3)
[8] 47 C.F.R. § 54.504(a)(1)(ix)

o   Disqualification factor: Bidders that are not eligible to receive funding from the Oklahoma Universal Service Fund will be disqualified.

Eligible Bandwidth Limit - Schools

The bandwidth limit for schools[9] is based on the State Education Technology Directors Association (SETDA) minimum bandwidth recommendations, and schools that seek more bandwidth than in the minimum recommendations must show good cause (provide a compelling reason with documented evidence)[10] for the additional bandwidth. The rules establish that the 2020-21 minimum recommendations are to be used for school years 2018-19 and later as there are no other recommendations between the 2017-18 and 2020-21 school years[11]. The bandwidth based on the SETDA minimum bandwidth recommendations are in Table 4 for Internet and Table 5 for WANs. In all cases, if the bid selected is higher than the values shown in the tables, the school will need to provide a compelling reason in order to receive funding. For such instances, PUD recommends that the school submit a Request for Preapproval prior to completing its FCC Form 471.

Table 4. SETDA Internet Service Provider Minimum Recommendations[12].

School Year	2017-18 Targets	2020-21 Targets
Small School District (fewer than 1,000 students)	At least 1.5 Mbps per user* (Minimum 100 Mbps for district)	At least 4.3 Mbps per user (Minimum 300 Mbps for district)
Medium School District Size (3,000 students)	At least 1.0 Gbps per 1,000 users**	At least 3.0 Gbps per 1,000 users
Large School District (more than 10,000 students)	At least 0.7 Gbps per 1,000 users	At least 2.0 Gbps per 1,000 users
* User: students, teachers, administrators, staff, and guests ** Published by SETDA 2012; Adopted by the FCC in 2014 E-rate Modernization Order Methodology: See Appendix A		

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[9] *Schools* as used in this memorandum refers to public school districts, public charter schools, and any other public school eligible to receive funding from the OUSF.

[10] See 17 O.S. § 139.109.1(A)(2)

[11] See OAC 165:59-7-8(c)

[12] Fox, C., Jones, R. (2016). *The Broadband Imperative II: Equitable Access for Learning.* Washington, DC: State Educational Technology Directors Association (SETDA), p. 2.

Table 5. SETDA WAN Minimum Recommendations[13].

School Year	2017-18 Targets	2020-21 Targets
Connections to each school to link to the internet via a district aggregation point and for in-house administrative functions	At least 10 Gbps per 1,000 users	At least 10 Gbps per 1,000 users
*User: students, teachers, administrators, staff, and guests. District-wide based on WAN site with largest number of users.		

For schools with:

- **More than 10,000 Students:**

  o The school has the option of using the expertise of its technology staff to determine the lower and upper bandwidth limits for the bid request[14]. The district then requests the lower and upper limits based on the Standard Available Bandwidths table.

  o The school should only request bandwidths above 10 Gbps if it wishes to receive bids above 10 Gbps and has the internal capacity to use it.

- **10,000 students or fewer:**

  o Determine your bandwidth based on number of users. While the OUSF uses total students and faculty/staff as the proxy for users, schools may count only their users with accounts if they wish.

  o Round the value to the nearest standard available level as shown in Table 3. The maximum value, regardless of the calculated value should be 10 Gbps unless the school wishes to receive bids above 10 Gbps and has the internal capacity to use it.

- **Wide Area Networks (WANS)**

  o WANs are routinely offered at 1 Gbps and 10 Gbps.

  o Schools may select the bandwidth (1 Gbps or 10 Gbps) based on the WAN site with largest number of users.

  o Schools should not request above 10 Gbps unless the school wishes to receive bids above 10 Gbps and has the internal capacity to use it.

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[13] Id., p. 3.
[14] Id., p. 14

As the bandwidth required to be bid may be greater than the internal capacity of the network, it is helpful if the school states on its 470/RFP the internal capacity of the network. For example, "Our internal network is only capable of X Mbps. All bids must include all costs required for the service to connect to and work with the internal network."

School Example

- Town School District has 3200 students enrolled and 300 faculty and staff. The school district also has three sites that need to be connected by a WAN.

- Currently, Town School District has a 1 Gbps WAN.

- The IT Director is interested in receiving bids for 500 Mbps, 750 Mbps, and 1 Gbps for Internet, and bids at 1 Gbps for the WAN.

- With 3500 users for OUSF purposes, the Internet bandwidth limit that must be included in the range requested is 10.5 Gbps (3500 users x 3 Gbps per 1000 users). As the guidance suggests 10 Gbps as the maximum request unless more is wanted and can be used, the IT Director intends to include 10 Gbps in the range in the request for bids for Internet.

- The largest site (high school) has a total of 1100 users, which for the WAN calculates to 11 Gbps (1100 users x 10 Gbps per 1,000 users). As the guidance suggests 10 Gbps as the maximum request unless more is wanted and can be used, the IT Director intends to include 10 Gbps in the range in their bid request for WAN.

- The IT Director files an FCC Form 470 for Category One Services.

  o For Internet, the IT Director selects:

    ▪ Minimum Capacity 500 Mbps
    ▪ Maximum Capacity 10 Gbps

  o For WAN, the IT Director selects:

    ▪ Minimum Capacity 1 Gbps
    ▪ Maximum Capacity 10 Gbps

  o In the narrative (or RFP), the IT Director writes:

- Maximum capability of the current network is 1 Gbps. Any Internet service and WAN service bid must connect to and work with the 1 Gbps Ethernet network at no additional cost.

- For Internet, please include bids at bandwidths of 500 Mbps, 750 Mbps, and 1 Gbps. Bids at higher bandwidths are acceptable providing that service will connect to our 1 Gbps network for no additional cost.

- For WAN please include bids at bandwidths of 1 Gbps. Bids at higher bandwidths are acceptable providing that the service will connect to our 1 Gbps network at no additional costs.

- Our intent is to conform to OUSF fair and open competitive bidding requirements. All technologies will be considered. All OUSF-eligible providers are invited to bid.

- We will consider multi-year contracts up to five years, subject to limitations on committing future funds.

- All bids must include all costs required for the service to connect to and work with the existing network.

- All services not eligible for OUSF funding must be listed separately.

- Disqualification factor: Bidders that are not eligible to receive funding from the Oklahoma Universal Service Fund will be disqualified.

Eligible Bandwidth Limit - Health Care

Health care entities have their eligible bandwidth limits listed OAC 165:59-7-6(c) based on type of entity. Those values, from the permanent rules effective September 11, 2017, are excerpted in Table 6.

Table 6. Bandwidth Limits for Eligible Health Care Facilities[15]

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(1) The OUSF Administrator shall approve funding for bandwidth requests, up to and including the amount listed below, for an eligible healthcare entity as follows:

(A) Department of Corrections shall be eligible for funding up to 100 Mbps;

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[15] Excerpted from OAC 165:59-7-6(c)

(B) Federally Qualified Health Centers shall be eligible for funding as follows:

    (i) Urban locations up to 500 Mbps;

    (ii) Rural locations up to 100 Mbps.

(C) County Health Department shall be eligible for funding as follows:

    (i) Urban locations up to 500 Mbps;

    (ii) Rural locations up to 100 Mbps.

(D) City-County Health Department shall be eligible for funding as follows:

    (i) Urban locations up to 500 Mbps;

    (ii) Rural locations up to 100 Mbps.

(E) Not for Profit Mental Health and Substance Abuse Facilities (certified facilities pursuant to OAC 450, Chapters 17 and 24) that are not staffed 24-hours each day shall be eligible for funding up to 100 Mbps;

(F) Eligible healthcare entities that are staffed 24-hours each day, including those which are academic facilities, large medical centers, hospitals, and mental health and substance abuse facilities (certified facilities pursuant to OAC 450 Chapter 23) shall be eligible to receive bandwidth, based on licensed or certified beds, as follows:

    (i) 1 to 50 beds shall be eligible for funding up to 500 Mbps;

    (ii) 51 to 100 beds shall be eligible for funding up to 1 Gbps;

    (iii) 101 to 200 beds shall be eligible for funding up to 3 Gbps;

    (iv) 201 or greater beds shall be eligible for funding up to 10 Gbps.

(G) The eligible healthcare entities, identified above in (A) through (F), which support other eligible healthcare entities as a central location or host, may request additional bandwidth per supported location of up to twenty five percent (25%) of the supported eligible healthcare entity's eligible bandwidth.

If a health care entity seeks a higher bandwidth than given above, then a compelling reason for the extra bandwidth will need to be provided to the OUSF administrator, following

OAC 165:59-7-6(c)(2). In such cases, PUD recommends that the health care entity submit a Request for Preapproval prior to committing to a higher bandwidth.

Health Care Example

- HealthyLiving Health Care Provider (HL) has an internal network capacity of 1 Gbps.

- HL is a rural Federally Qualified Health Care facility, eligible for up to 100 Mbps based on Table 6.

- The HL Director is interested in bids from 50 Mbps up to 100 Mbps.

- The Director therefore asks for a bandwidth range on the request for bids of a lower bandwidth capacity of 50 Mbps and an upper bandwidth capacity of 100 Mbps.

- The Director also writes in the narrative (or RFP):

  o Our intent is to conform to OUSF fair and open competitive bidding requirements. All technologies will be considered. All OUSF-eligible providers are invited to bid.
  o All costs must be included in the bid.
  o All services not eligible for OUSF funding must be listed separately.
  o Request is for symmetric bandwidth and Dedicated Internet Access.
  o Disqualification factor: Bidders that are not eligible to receive funding from the Oklahoma Universal Service Fund will be disqualified.

Conclusion

If you have any questions about this guidance, please contact the Public Utility Division at OUSF@occemail.com or (405) 521-4114. Additional guidance on OUSF has been provided through webinars or training sessions throughout Oklahoma. If you would like a dedicated presentation on OUSF for your professional group or organization, please contact the Public Utility Division.