# WHY OUSF DEMAND WILL DECREASE AFTER FY2016:

**SCHOOL EXAMPLE:**

**dial up 28-33 Kbps**

In 1996, School A installed dial up connections to each of their school buildings with classrooms. They were able to add an extra phone line at each location and received a dial up connection to the Internet at each of the schools. Cost was $20/each for $60/month

**dial up 56 Kbps**

In 1997, highly modern 56 Kbps modems were available, so the school purchased three 56Kbps modems so they could dial out to the Internet at speeds twice as fast as before. The modems cost $200/each and the monthly cost was still $60/month.

In 1997, the OUSF program started in Oklahoma and provided a free 56K connection to each building with classrooms

In 1997, the FCC E-Rate program was introduced. Oklahoma schools & libraries applied for discounts from the FCC on their Internet Access so OUSF only paid the remainder.
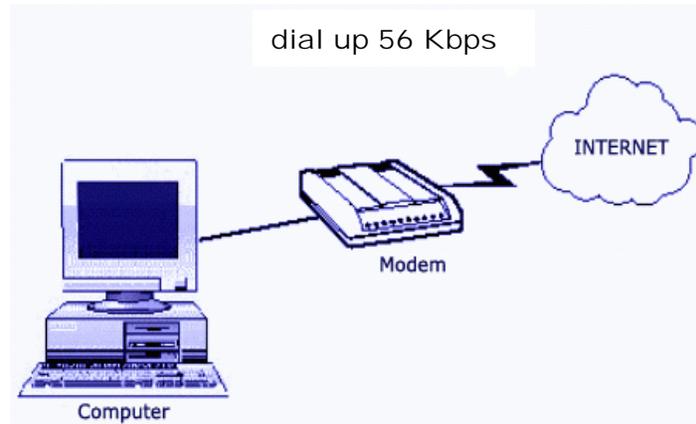
For School A's 56 Kbps connection, Erate paid 80% or $48/month and OUSF Paid 20% or $12/mo.

In 2001, School A decided to upgrade from the dial up connections to a T-1 at each building. The T-1 speed was 1.54 Mbps which was over 27 times as fast as the dial up connection. Also, the T-1 connected directly to the service provider's equipment via a dedicated copper cable. The cost of the T-1 was $514 for each school site = 3 x $514 = $1542/mo.

**T-1 line**
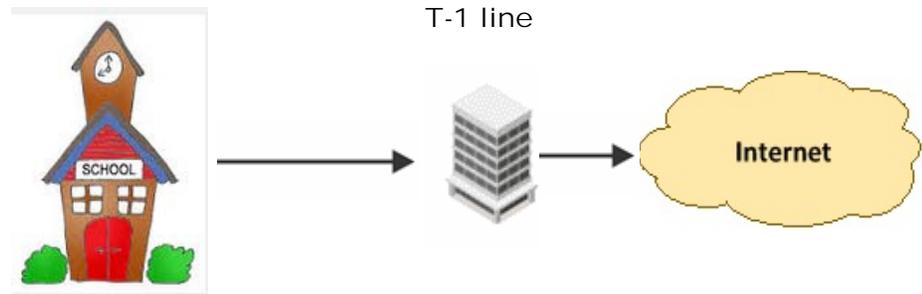


For School A's T-1 connections, Erate paid 80% or $1233.60/mo and OUSF Paid 20% or $308.40/mo.

In 2005, School A decided they could save money by sharing the T-1 connection among the 3 sites so they installed point to point T-1 connections for $200/month and kept only one T-1 at the high school for $514/mo. All 3 sites shared the T-1 Internet that was delivered to the HS and then transported to the ES and MS via the point -to-point connections.
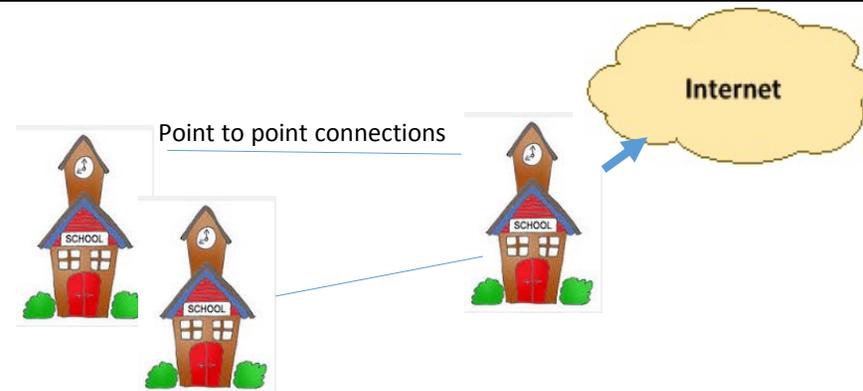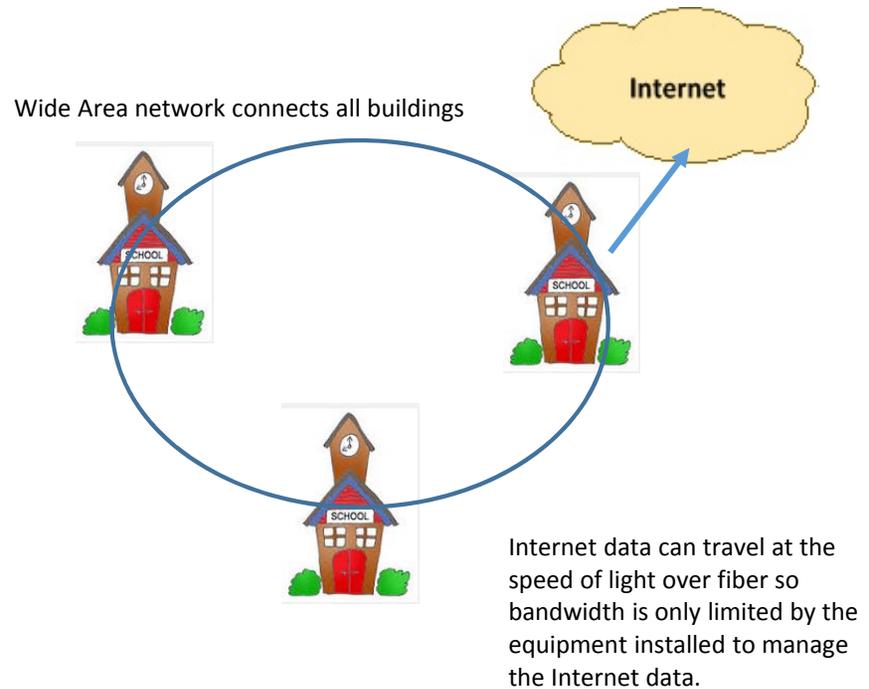
When School A decided to share the single T-1 internet with all three sites, their costs went down to $200 for each point to point connection and $514 for the single T-1 to the Internet. Total monthly cost was 914/mo.

Point to point connections



For school A's shared connections, Erate paid 80% or $731.20/mo. and OUSF paid $182.80/mo.

In 2010, the state department of education required online testing and the school started using online curriculum in their courses. The T-1s were no longer sufficient to meet the demand. So they upgraded their Internet Access connection to 10 Mbps and they installed a wide area network connecting all 3 of their buildings in a ring network. With the ring network, they do not have a single point of failure.

In order to get the 10 Mbps Internet and the wide area network, they had to install a fiber connection to the Internet Service Provider which required digging a trench to hold conduit (plastic pipe) that the fiber line is pulled through. The conduit protects the fragile fiber line from dirt, rain, and other elements that can mess up the fiber connection. The cost of construction was $125,000 so the service provider spread the cost out over a five year period.

Costs were $2100/mo. For the 10 Mbps Internet Access plus $1500/mo. For the WAN connections ($500 each) plus the cost of the build out over 5 years ($2083.33/mo) = 5683.33



Wide Area network connects all buildings

Internet

Internet data can travel at the speed of light over fiber so bandwidth is only limited by the equipment installed to manage the Internet data.

For School A's 10 Mbps Internet and 100 Mbps WAN, Erate paid 80% or $4,546.67 and OUSF paid 20%, $1136.67/mo.

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In 2015, the school's 5 year contract ended. When they renewed, the service provider could reduce costs because the fiber had already been built out. The school decided to upgrade their bandwidth and discovered they could get the 100 Mbps Internet for only $1200/mo. and the WAN only cost $1500/mo. for total monthly of $2700/mo.

For School A's 100 Mbps Internet and 100 Mbps WAN, Erate will pay 80% or $2160 and OUSF will pay 20% or $540/mo.

*Beginning with FY 2016-17 Since School A has now installed the fiber to their school, they can upgrade to any speed as the cost of equipment and management of faster speeds becomes available with advances in technology.  The construction cost to build out the fiber has already been paid so any future upgrades will be minimal in cost.*