To: Mr Van Knowles,

Appreciate the extended opportunity to review and provide feedback. The following is KDE's response and recommendations associated with your KYWired report:

- All our KY K-12 districts and schools are already connected to the Internet with a high quality fibered service. The gradual increase of KY K-12 Internet bandwidth demands and the costs associated with it will likely steadily increase over the next 30 years, as it has for the past 30 years.

- In KY K-12, we currently use approximately 200 kb per student. It is estimated the KY K-12 Internet bandwidth needs will steadily increase by at least 4-5 times over the next 5-10 years to 1000kb per student. The new national K-12 Internet bandwidth goal is 1000kb per K-12 student. Having an E-rate eligible Internet service for all 172 districts (e.g., the Kentucky Information Highway, versions 3-6) will play a critical role in (a) KDE's ability to meet that new national bandwidth speed goal for KY K-12 and (b) providing close to $2B for KY K-12 edtech for the next 30 years. In order to be good stewards of taxpayer funds, KDE only buys the amount of Internet services/bandwidth that our school districts have shown that they have a proven need for. Since 2015, we have appropriately and frugally scaled up our average bandwidth per KY K-12 student from 100 kb per student to now about 200 kb used per KY K-12 student.

- It is expected that E-rate will yield close to $2B in total KY K-12 edtech buying power over the next 30 years. Consequently, it is significant whether there is an E-rate eligible contract for KY K-12 Internet services. The estimated e-rate rebates for KY K-12 Internet services over the next 30 years leads to additional KY K-12 edtech buying power for KY K-12 schools through the KETS match program and the district's ability to get additional local E-rate rebates (e.g., buying dense wireless technology that goes inside the schools) with the E-rate money that KDE sends annually to all districts. For example, this past April, KDE applied for $12.4M in federal E-rate rebates from the FCC for the KIH3 services to all school districts. KDE and KY K-12 will get approximately an additional $30M in KY K-12 edtech buying power on top of that original $12.4M spent in FY19 due to the KETS matching program at the state level and KY K-12 edtech product standardization.

- Our KY K-12 cloud based service counts on and must use an Internet service that is up and available 99.99% of the time, like it is now. Our existing high quality and reliable

Internet service through the KIH contract has enabled KY K-12 to become "the" national leader in cloud based computing (e.g., e-mail, financial mgt, student information system, audio/video instructional content/delivery, on-line testing, etc.). Our KY K-12 cloud based computing strategy and approach has permitted KY K-12 to (a) annually save a significant amount of money each year, and (b) significantly increase the 24 by 7 cybersecurity and reliability of our KY K-12 services for KY K-12 students and teachers.

- KDE has noted before and again notes now: KYWired, as a newly formed company producing a first version product/service, will go through operational growing pains for several years. We want our KY K-12 schools using an Internet service that is available, stable, and reliable for our cloud based services. While the LRC report describes the financial risks of KYWired going forward, we must also consider the technological and operational risks. KDE is concerned with the amount of time it will take for KYWired services to be available, reliable, and stable. KCNA and OpenFiber are newly formed organizations that are still in the process of creating their 1.0 version product/service (getting all the fiber in place, then getting all the new electronics to work on that fiber over a completely new design with new people to a really large scale of bandwidth consumption). So its first organizations and customers using their services will likely experience the initial growing pains (i.e., the operational up and downs). Gartner is the consumer reports of the technology industry and the following chart displays their "Gartner Hype Cycle" for technology products and services:
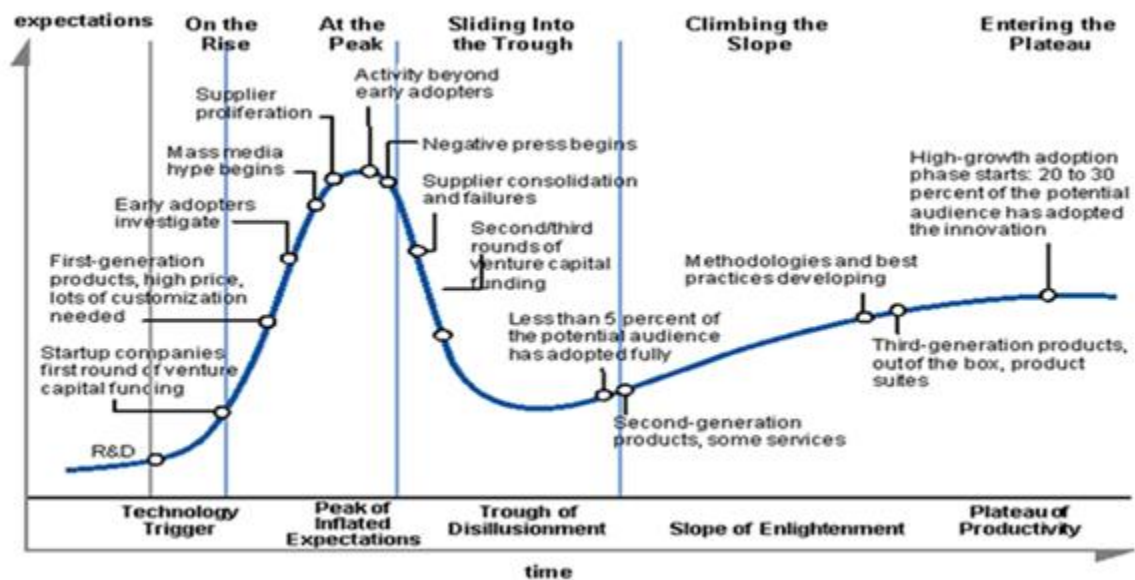
- In 2023, 2033, and 2043, when the next E-rate eligible KIH contracts are bid/awarded, we expect to have 7-10 quality vendors competing against each other each time. There is no guarantee that the existing KIH3 prime vendor (i.e., AT&T) or KYWired will win or remain the KIH contract holder for any of those KIH contracts. We have consistently stated since 2015 that, from an E-rate perspective, KCNA and OpenFiber must be considered a private sector vendor and treated the same as any other private sector vendor

during the KIH4, KIH5 and KIH6 RFPs. AT&T is the current prime contractor for the KIH3 contract, which is scheduled to be used by all 172 districts until the KIH3 expires in 2023. KDE issues KY K-12 Internet service contracts for 10 years because that is the length of time that has proven to be most helpful in KY K-12 getting high quality services/reliability and good costs for that level of quality/reliability. Each of those three future KIH bids (i.e., KIH4, KIH5 and KIH6) must meet the E-rate requirements of having a fair and open competition for the selection of KY's prime K-12 Internet service provider.

- KDE continues to recommend, to avoid real or perceived conflict of interested issues, that it take the lead in creating, evaluating and awarding the future E-rate eligible KIH contracts in 2023, 2033 and 2043 in order to meet the federal E-rate requirements of a fair and open bid. In June 2015, KDE's Commissioner Holliday stated in a communication that "we have significant concerns about the Finance and Administration Cabinet (FAC) issuing this bid for K-12 customers, because of the perception of a conflict of interest, and believe that KDE should be the entity issuing any solicitation for K-12, to which the Finance and Administration Cabinet, or any affiliated entities, respond." Our recommendation in 2019 remains the same.

Take care.

David Couch
KY K-12 CIO and Associate Commissioner of Education
Office of Education Technology

Kentucky Department of Education
300 Sower Blvd., 4th Floor
Frankfort, KY 40601
(502) 564-2020, ext. 2229
david.couch@education.ky.gov