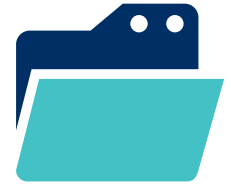# State K-12 Broadband Leadership 2019
Minnesota Case Study

STATE K-12 BROADBAND LEADERSHIP

Minnesota's constitution calls for citizens to have access to an equitable public education system. As is the case with many states, Minnesota has concentrations of population in both urban centers and large areas of rural communities. Broadband access provides students with a wide range of educational opportunities both within and outside of their communities, regardless of whether they live in a large city or a small rural township. In addition, state leadership recognizes the significance of broadband connectivity for promoting economic development, employment, and business growth. From a state level, agencies such as the Department of Employment and Economic Development (DEED) and the Minnesota Department of Education (MDE) provide funding through grant opportunities and aid programs to help communities, schools, and public libraries achieve high speed broadband access. The Minnesota Office of Enterprise Technology (MnIT) provides a backbone network (leased, not state owned) throughout the state to deliver connectivity to cities, counties, public schools and libraries in various areas of Minnesota.

In 2016, a joint partnership, between the Office of the Governor, the Minnesota Department of Education (MDE), the Department of Employment and Economic Development (DEED) and the national non-profit EducationSuperHighway established the Minnesota K-12 Connect Forward Initiative to ensure that all students in the state have access to scalable infrastructure, high-speed affordable bandwidth, and ubiquitous Wi-Fi for digital learning.

Since 1993, at the regional level, the Minnesota Education Technology Networks (METN), a cooperative of regional networks, provides regional network development, support and leadership to Minnesota school districts. METN member cooperatives provide network coordination, procurement, and other support to help school districts acquire and manage broadband networks for instruction and education management. METN has also provided limited cooperative purchasing opportunities.

STATE FUNDING

Minnesota provides state funding directly to the district for external broadband connections and directly to the regional networks. Through regional partnerships, the median cost of broadband (per mbps) in Minnesota schools has dropped 84% from $15 in 2015 to $2.35 in 2018. While cost has decreased, the amount of bandwidth necessary for students to participate in digital learning has increased. In the same period of time, the median bandwidth speeds available on a per student basis has increased almost four fold from 226kbps to 890kbps. Minnesota currently provides limited state funding for connectivity on buses and previously provided one-time grants that could be used to obtain hotspot devices for students to use off campus. Minnesota does not provide funding for internal wireless connections.

STATEWIDE K-12 EDUCATION BROADBAND CONNECTIVITY

Minnesota provides education broadband connectivity through 19 regional networks. The process for joining a regional network varies slightly by region, but generally school districts join any network that can provide them with broadband services. Most school districts rely on the federal E-rate program to afford high speed broadband, so they use the corresponding competitive bid process either independently

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to choose a regional network or the regional network completes a competitive bid process through E-rate for the regional broadband network as a wide area network for all members. The networks are coordinated by a cooperative or nonprofit education agency that provides services to the K-12 education system. Minnesota estimates that 50% - 74% of districts participate in a regional network.

Highlight

In Summer of 2018, Southwest West Central Service Cooperative (SWWC) completed a project to provide broadband services to approximately 50 sites, including schools, libraries and other government agencies. The newly awarded contract includes fiber-based Wide Area Network (WAN) connectivity among the schools and libraries and the SWWC's data centers, as well as managed routers providing a level of cybersecurity. The new network replaced microwave links that previously served all but two of it's 30 member districts, with fiber connections providing higher speeds, better reliability and unlimited potential. This project helped close the broadband gap, reaching 99% of the state's school districts meeting current goals for broadband connectivity.

> *In receiving a fully fiber-based Wide Area Network solution, we will be able to provide more advanced services allowing our members to receive secure, enterprise-class technical operations at a fraction of the costs if they were to try to achieve the same quality on their own. It is the goal of all of our member school districts to provide more opportunities with the greatest level of data protection and cyber security available to benefit the 20,000 plus students to be served.*
>
> —Josh Sumption
> SWWC's Director of Technology

POLICIES/GUIDANCE FOR DISTRICTS

Minnesota coordinates with other state organizations to coordinate on campus activity to ensure that all students in Minnesota have access to scalable infrastructure, high-speed affordable bandwidth, and ubiquitous Wi-Fi for digital learning. In addition, these organizations provide value added services such as network security, digital curriculum resources, network management, distance learning support, and other enterprise level services. The Minnesota K-12 Connect Forward Initiative adopted the widely recognized goals for connectivity put forth by groups such as SETDA and the Consortium for School Networking (COSN) and has provided guidance to districts in reaching those goals. The Minnesota K-12 Connect Forward Initiative and Minnesota's Educational Technology Networks do not have specific policies for wireless connections but continue to work with districts to leverage federal E-rate dollars to ensure that districts can implement wireless connectivity within their buildings in a cost effective manner.

The robust regional networks in the state have allowed schools to implement 1:1 programs and utilize learning management systems for instructional programs. Teachers and students have become more adept at utilizing digital learning both on and off campus. In some parts of the state, severe cold, blizzards and heavy snow impact school schedules. It is not unusual to have five to ten or more days of school canceled due to weather conditions. In 2018, the state legislature passed legislation that allows districts to implement up to five e-learning days per year when school would otherwise not be in session due to unsafe weather conditions. During e-learning days, students access instructional materials online and teachers are accessible via telephone and online means to assist students with their activities. Minnesota's high speed regional networks allow e-learning options for students.

DISTRICT IMPLEMENTATION

MacPhail Center for Music is a community-based music education non-profit based in Minneapolis, Minnesota. The center operates an online school partnership program that utilizes video conferencing over high speed broadband networks to bring renowned MacPhail specialists into classrooms throughout the state. Music specialists provide live clinics, sectionals, concert prep, professional development and individual lessons for vocal and instrumental music. Regional networks, such as the Little Crow Telemedia Network (LCTN) and East Central Minnesota Educational Cable Cooperative (ECMECC) and others have supported the participation of many schools in this program by providing equipment, training, technical and financial support. For example, students in Yellow Medicine East, MACCRAY, Braham and Hinckley-Finlayson rural districts (all districts of less than 1,000 students K-12) have received online group and private lessons from music professionals at the MacPhail Center.

COLLABORATION ACROSS THE GLOBE

Video conferencing enables:
- Face-to-face, real time discussions
- Ability to view live events, such as surgeries or space walks
- Engage in virtual reality expeditions growth in underserved areas.

OFF CAMPUS ACCESS

In Minnesota, other state agencies, libraries, community-based groups and the state broadband commission work together to coordinate efforts to support student access to off campus connectivity. The state is promoting strategies, both formally and informally, for access to affordable out-of-school broadband for students, especially in low-income and rural areas through legislated funding; promotion of discount/ free options; community partnerships; connecting anchor institutions; and Wi-Fi on buses. Off campus access strategies are driven by availability and affordability in rural areas; minimum broadband standards, such as speed, safety and security, as well as limited service options for consumers. Specifically, through efforts by the Governor's Task Force on Broadband and the Office of Broadband development, statutory goals were put in place calling for all homes and businesses to have access to broadband service of at least 25 Mbps download and 3 Mbps upload by 2022 and that by 2026 all homes and businesses would have access to broadband service of at least 100 Mbps download and 20Mbps upload from at least one provider. To help incentivize the deployment of broadband in rural areas, the state funded grant programs and projects that offer new or upgraded broadband service to unserved and underserved areas of the state. Grant programs have totaled $85.6 million to date and $500,000 was awarded to provide schools with mobile hotspots available to students without adequate broadband access at home. The grant programs were administered by the Office of Broadband Development and funding for the programs has been consistently supported by the Governor's Task Force on Broadband. Grants have also been awarded to provide schools with mobile hotspots for students without adequate broadband access at home.

FUTURE PLANS

Minnesota's regional broadband networks will continue to seek cost-effective broadband solutions for all Minnesota school districts by leveraging state and federal funding initiatives and local partnerships with an eye toward always providing the bandwidth that districts need to fully participate in digital learning and utilize digital resources. Additionally, the regional networks will continue to expand enterprise level services designed to share resources that are expensive for smaller, often rural, districts to afford on their own. Services that will improve network and data security, provide access to online resources, bring educational opportunities directly to the schools and improve administrative procedures within districts.

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