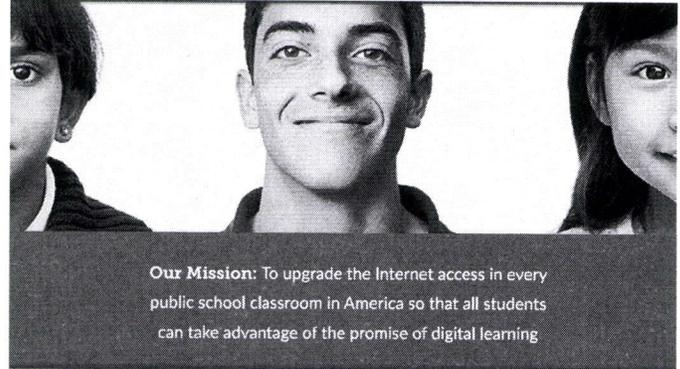


About EducationSuperHighway

Mission-driven non-profit, non-partisan organization



Our Mission: To upgrade the Internet access in every public school classroom in America so that all students can take advantage of the promise of digital learning



Partnership overview

EducationSuperHighway is a mission-driven non-profit, non-partisan organization

In September 2015, EducationSuperHighway launched two programs in partnership with Montana.

1. Fiber program

- Identify schools lacking scalable broadband infrastructure and help them upgrade

2. Connectivity Report

- Report on K-12 connectivity & identify opportunities to improve equity and access



opi.mt.gov



Digital technology is transforming education in MT



Teachers use Khan Academy to check for student understanding and adjust lessons on the fly



Montana Digital Academy serves 97% of high schools and offers every course needed to graduate



Hinsdale Public Schools moved most services to SaaS/Cloud based - reducing IT management burden



MT Digital Professional Learning Network provides online professional development courses to over 10k educators throughout the state.



Connectivity infrastructure is a necessity for 21st century schools



Fiber broadband Internet access in every school



Wi-Fi/Local Area Network (LAN) access in every classroom

How MT can optimize federal E-rate funding



Fiber: E-rate subsidizes deployment of fiber to every school PLUS additional 10% match of new state funds

- In NM, E-rate + a \$700k state match got 45 schools on fiber at zero cost to districts



Common denominator = state funding + leadership



Wi-Fi: \$11 million of federal funding available for MT to upgrade internal infrastructure in the next four years

- NC created a sustainable program to put 1 Wireless Access Point in every classroom – and received 60% discounts from vendors

Models of state action to improve access & affordability

High state intervention



Low state intervention

Operate

Operate a state network

- Operate backbone and/or middle mile network
- Provide technical and procurement support

Aggregate

Aggregate procurement

- State master contracts
- State consortium
- Regional consortium

Fund

Fund districts

- Qualifying grant
- Matching fund
- Competitive grant

Appendix: Examples of state action + E-rate info

Low intervention: California's BIIG Grant Program

Provided \$27M to connect over 200 of the most in-need schools sites to 1 Gbps fiber services

PROBLEM

- Schools lacked funding and expertise needed to upgrade Internet connectivity
- Field tested online assessment program to identify schools lacking adequate infrastructure

 Out-of-date infrastructure

 Not affordable for districts

SOLUTION

- Governor Brown created a one-time \$27M fund to upgrade broadband infrastructure
- Schools were qualified based on need
- The state executed an RFP on behalf of qualified sites to connect to the state network

OUTCOME

- Schools involved in the program have scalable Internet connections to California's statewide network

 90% of grant sites upgraded to 1 Gbps or greater

 95% of grant sites connected to fiber



Medium intervention: Pennsylvania's E-Fund

\$60M grant to aggregate purchasing, resulting in a 534% statewide increase in school bandwidth

PROBLEM

- Fractured district purchasing resulting in:
 - High costs
 - Low bandwidth
 - Poor equity

 \$486/Mbps average IA

 54 Mbps average district b/w

 40% fiber

SOLUTION

- Service providers paid into E-Fund in exchange for relaxed regulatory guidelines (\$60M over 6 years)
- Established grant program that incentivized district cooperation (PA E-Fund)

OUTCOME

- Intermediary units formed regional networks to receive E-Fund money
- Regional networks interconnected to form a state backbone (PAIUNet)

 Bandwidth up 534% statewide

 \$1/Mbps state IA

 83% fiber (2012)



High intervention: Network Nebraska

Partnered with higher ed to build a statewide fiber network to serve 100% of public school districts

PROBLEM

- Regional distance learning networks had outdated infrastructure
- The networks lobbied the state to intervene on their behalf

 Fractured regional networks

 Out-of-date infrastructure

SOLUTION

- Formed the Distance Education Enhancement Task Force
- K-12 partnered with higher-ed to support the state backbone
- Postalized district membership fees (\$236/mo) fund the network

OUTCOME

- Single, sustainable K-20 network funded by affordable membership fees

 \$1/Mbps Internet access

 100% district participation (July 2015)

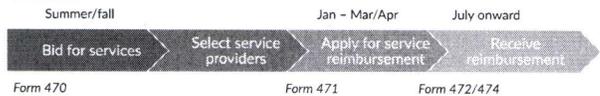
 99% fiber (2015)



E-rate funds up to 90% of the cost of connectivity for schools

E-rate provides discounts to schools and libraries in the United States on their telecommunications, Internet access, and internal networks. The program is administered by the Universal Service Administrative Company (USAC) under the oversight of the Federal Communications Commission (FCC).

Timeline:



Discounts range from 20% to 90% of the cost of services, depending on poverty levels and location (urban or rural)

Individual schools, school districts, or school consortia can apply for E-rate funds.



E-rate match for state contribution



Example: Sample School District wants to procure a fiber connection to one of their schools currently on a T-1 connection. The district received multiple bids for both lit and dark services and determined that a \$100,000 bid for a fiber build was the most cost-effective option. How much money would this fiber project cost the district?

Fiber build quote from vendor		\$100,000
E-rate reimbursement rate	70%	\$70,000
State contribution	10%	\$10,000
Bonus E-rate match	10%	\$10,000
Total cost to Sample SD	10%	\$10,000

Note: Sample SD can pay their match over 4 years, if agreed to by the service provider. $\$10,000 / 48 \text{ months} = \208 per month .

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Key Modernization Changes: Fiber Construction



Change	Outcome
<ul style="list-style-type: none"> Fiber construction costs can be charged in one fiscal year 	<ul style="list-style-type: none"> More districts will evaluate fiber builds as an option
<ul style="list-style-type: none"> Non-discounted portion of special construction costs can be paid over 4 years 	<ul style="list-style-type: none"> Ability to extend payment window makes this more affordable for districts
<ul style="list-style-type: none"> Dark fiber acquired by IRU or construction is a fully eligible service 	<ul style="list-style-type: none"> Lit service must also be bid to compare to dark fiber option
<ul style="list-style-type: none"> E-rate will match state funding up to an additional 10% for special construction 	<ul style="list-style-type: none"> Districts with an 80% discount rate could have 100% of costs covered

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Key Modernization Changes: Program Funding

Change

- Annual funding cap increased from \$2.4B to \$3.9B
- \$1B Cat 2 funding target is extended to 2019
- Cat 2 budget is up to \$150 per student pre-discount

Outcome

- Districts should receive more of their requested funding, including fiber construction and Wi-Fi
- Wi-Fi Upgrades can be planned over the next four years
- Per student funding helps larger districts meet connectivity targets

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Fiber Construction Matching Funds

E-rate will pay up to an additional 10% above an applicant's discount rate if states provide matching funds for fiber construction



What state funds are eligible for the additional fiber construction match from E-rate?

- New funding, if possible. Contact the FCC to see if existing funding qualifies.
- Funding must be administered by an agency of the state.
- Must include language that
 - Dedicates the funds to construction of broadband infrastructure by E-rate applicants
 - Recognizes that the new infrastructure must deliver service that meets or exceeds FCC goals to the E-rate facility
- E-rate will not match beyond the cost of services
 - Example: If a district has an 85% discount rate and the state matches 10% of the costs, E-rate will kick in an additional 5%
- Case Study: CA BIIG Fiber Grant

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Category 2 funding cap changes



WI-FI

How are Category 2 funds currently capped?

- Category 2 funding is calculated on a "per student" basis, and is capped over a 5-year period
- Five-year period starts with the 1st year of funding and ends 4 years later
- The "2 in 5 rule" – where applicants could only access funds within 2 out of any 5 sequential years – is no longer in effect.
- FCC rule applies to applicants first funded between 2015 and 2019
- Once funded in any year from 2015 to 2019, the applicant is locked into the pre-discount budget process for the full 5 years
- In 2020 and beyond, it is unclear how the FCC rule will apply

17 Source: <http://e-ratecentral.com/archive/News/News2015/weekly-news-2015-0323.asp>



Category 2 budget calculation



WI-FI

- Pre-discount budget for a school = # students x \$150
- Minimum of \$9,200 if the school has fewer than 62 students

• Example: school with 1,000 students

85% discount rate (the maximum for Cat 2)

Pre-discount budget: \$150,000

E-rate discounts: up to \$127,500

Budget is capped to a 5-year window

18 Source: http://www.usac.org/_res/documents/sl/training/2014/B-Setting-Applicant-Budgets.pdf



Other Resources

- FCC Modernization Order Summaries:
 - <https://www.fcc.gov/page/summary-e-rate-modernization-order>
 - <https://www.fcc.gov/page/summary-second-e-rate-modernization-order>
- Summaries
 - [Modernization Order - December 2014](#) – Wisconsin DPI
 - [A Summary of Major Changes to the E-Rate Program from the December 11 FCC Report and Order](#) – American Library Association: January 2015
 - [FCC Releases Second E-Rate Order On Modernizing The E-Rate Program](#) – Wemble Carlyle: January 7, 2015
 - [The FCC Delivers Phase II of E-Rate Modernization](#) – Open Technology Institute: January 14, 2015
- E-rate Training (3rd party): <http://erate.training/start-here/>

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August 13, 2015

Tracy Stone-Manning
Chief of Staff
Office of Governor Steve Bullock
1301 E. 6th St.
Helena, MT 59601

Re: Letter of Intent

Dear Ms. Stone-Manning:

This letter of intent confirms our prior conversations and the present intent of EducationSuperHighway ("ESH"), a nonprofit (501c3) organization, and Montana Office of the Governor and Office of Public Instruction ("State") to collaborate to facilitate high-speed broadband access for K-12 public schools.

State Will:

- Set K-12 connectivity goals that will ensure that all public school students across the state can take advantage of digital learning;
- Make a commitment to take action to improve broadband access for K-12 public schools across the state;
- Appoint a leader from the governor's office to champion the K-12 broadband initiative and ensure accountability for results;
- Publicly announce, at a minimum, the education broadband initiative and connectivity goals through one or more of the following: a press release, approval of a quote, coordination of a media event, and/or other means deemed appropriate by the governor's communications team; and
- Assist ESH in preparation of a state K-12 connectivity report by facilitating communications to school districts and relevant state agencies.

ESH Will:

- Deliver a comprehensive K-12 broadband connectivity report based on analysis and reporting of data compiled by the State and ESH; and
- Develop an action plan based on specific areas of need identified through the aforementioned connectivity report.

This letter represents only the current intent of the parties and does not constitute a legally binding agreement. If this letter accurately reflects our mutual understanding, please acknowledge your agreement by signing below.

Regards,

EducationSuperHighway

**ACKNOWLEDGED AND AGREED:
Montana Governor's Office**

By: _____
Evan Marwell
CEO

By: _____
Tracy Stone-Manning
Chief of Staff

Montana Office of Public Instruction

By: _____
Dennis Parman
Deputy Superintendent