

Statewide Education Technology Infrastructure Network

Public School Capital Outlay Oversight Task Force
(PSCOOTF)

August 16, 2021

PSFA Presenters:

Jonathan Chamblin, Executive Director

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Partnering with New Mexico's communities to provide quality, sustainable school facilities for our students and educators.

Agenda

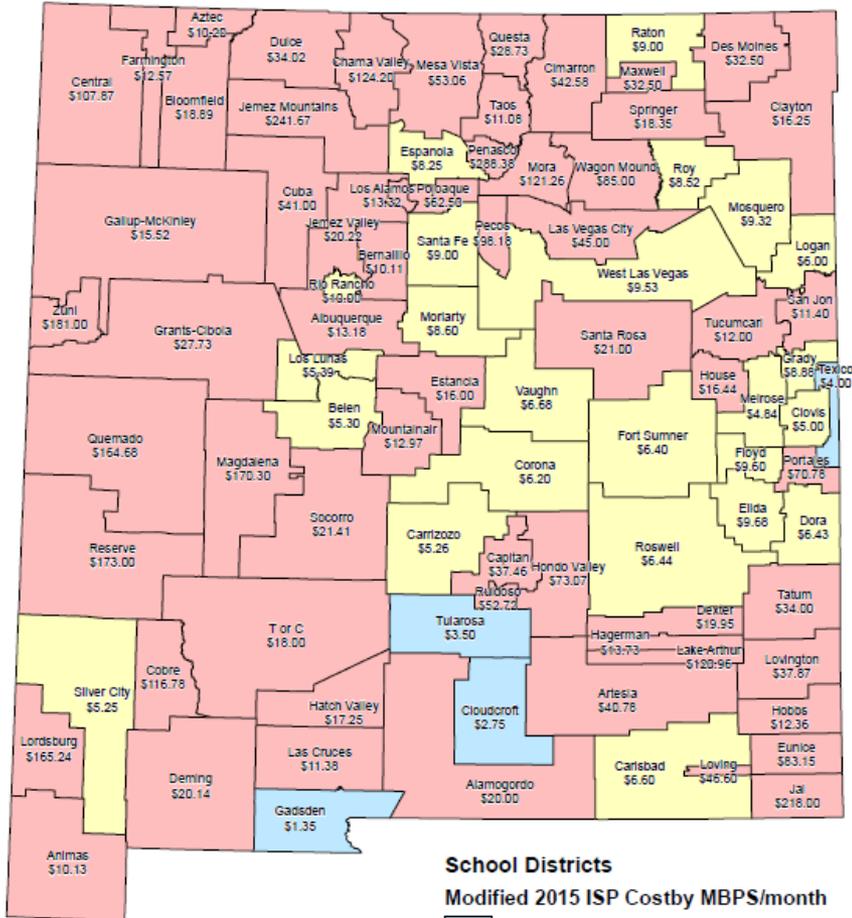
- PSFA Broadband Program - Background.
- SB144 - What is it?
 1. Student Connectivity.
 2. Statewide Education Network.
- Preliminary Framework.
- Next Steps / Timeline Review.
- Questions.

PSFA Broadband Program Background

- Number of projects: **270 (2016 - 2020)**.
- Value of upgrades: **~\$100M / 88% E-rate**.
- NM K12 Rank Nationwide (E-rate): **Top 3/5**.
- NM K12 Broadband unit price reduction: **80%**.
- Increase in average K12 broadband speed: **6X**.

PSFA Broadband Program: Progress

Modified ISP Cost by MBPS Per Month 2015

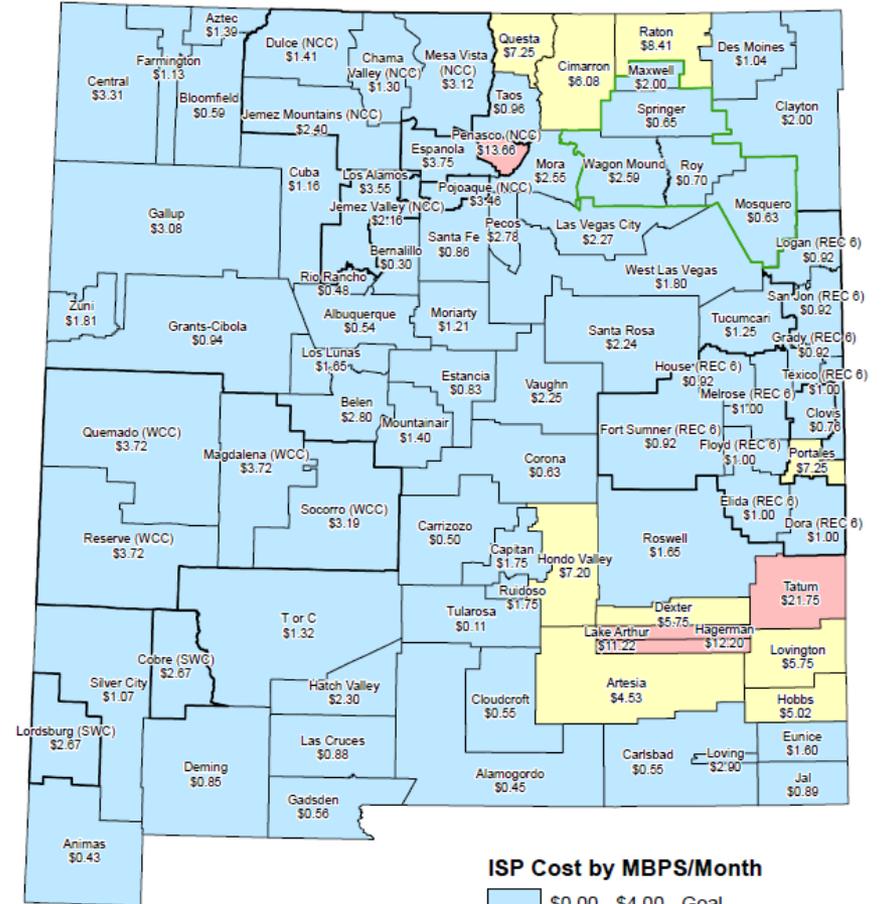


School Districts
Modified 2015 ISP Cost by MBPS/month

- Blue: \$0.00 - \$4.00 - Goal
- Yellow: \$4.01 - \$10.00 - Acceptable
- Red: \$10.01 - \$288.38 - Unacceptable

Created 7/18/21
 By AM PSFA
 Sources: BDCB

ISP Cost By MBPS Per Month 2021



ISP Cost by MBPS/Month

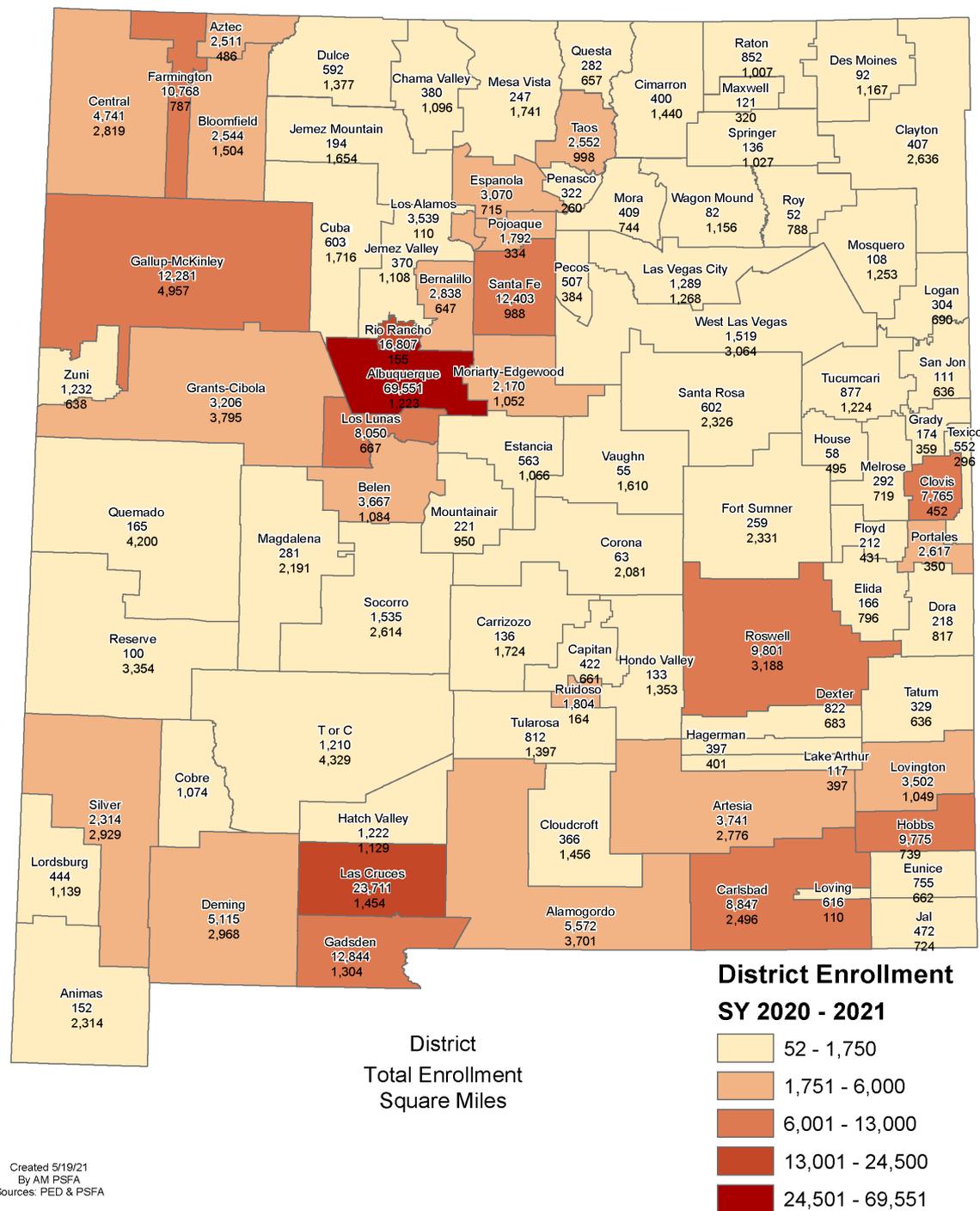
- Blue: \$0.00 - \$4.00 - Goal
- Yellow: \$4.01 - \$10.00 - Acceptable
- Red: \$10.01 - \$21.75 - Unacceptable

New Consortia
 (SWC) Southwest Consortium - 2 School Districts
 (REC 6) Consortium - 10 School Districts

Created 4/28/21
 By AM PSFA
 Sources: BDCB

NM School Districts Enrollment Heat Map

- Most of NM is remote, rural, and sparsely populated.
- IT expertise (qualified manpower) is not uniformly available.
- Large geographic areas with few locations purchasing high-speed internet is a challenge for market providers of network connectivity, services, and equipment.
- Statewide technology infrastructure network will provide better connectivity and expert network management services to all areas of NM.



SB144 - Broadband / Ed Technology

1. Connect students and teachers wherever they are (home).
2. Create a Statewide Education Network (**SEN**).
 - “The council shall develop guidelines for a statewide education technology infrastructure network that integrates regional hub locations for network services and the installation and maintenance of equipment.”

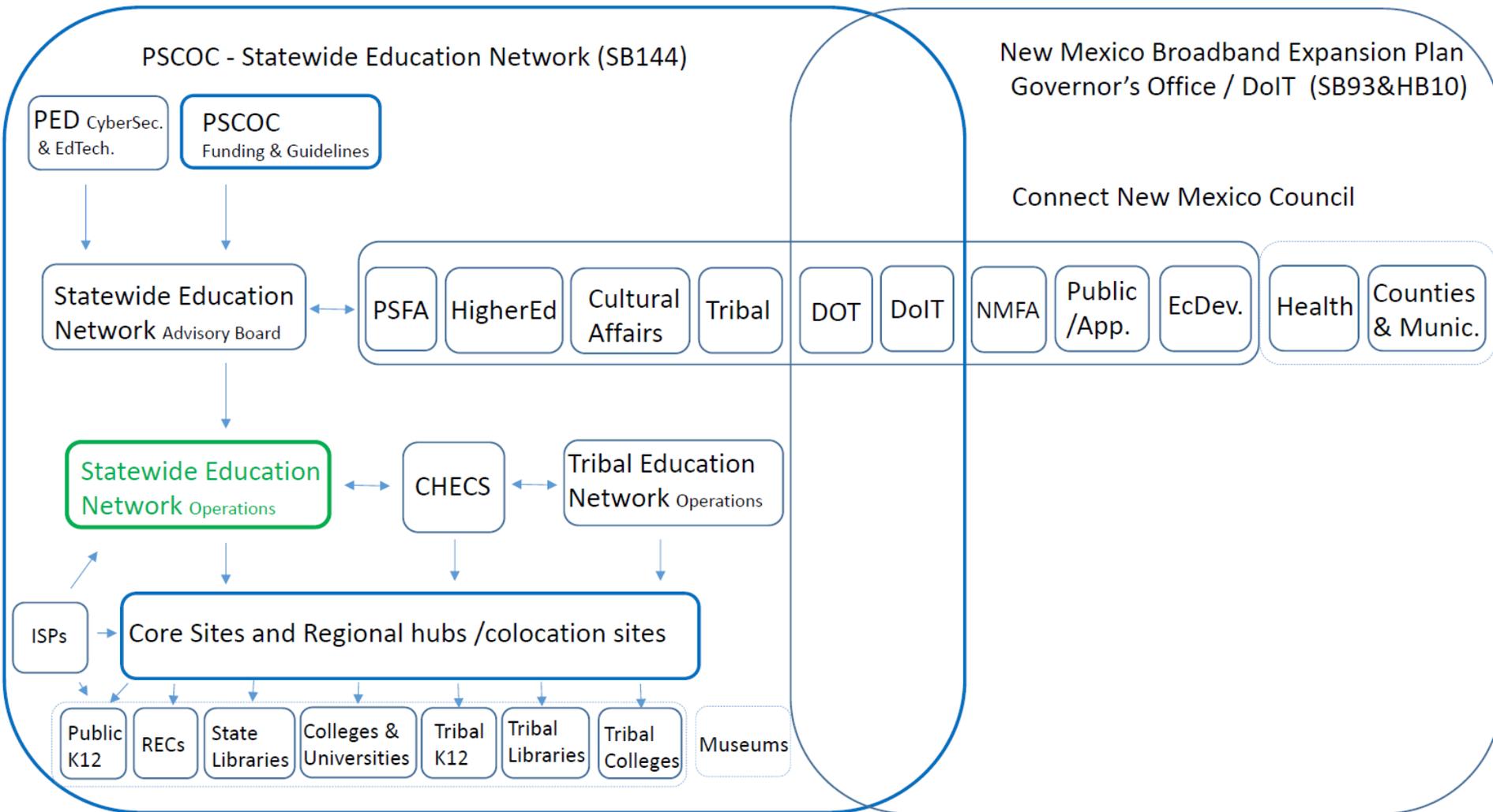
Student and Teacher Connectivity: Immediate Solution

1. Connect students and teachers wherever they are (home).
 - PED is leading this effort – responding to Yazzie/Martinez.
 - CTC Technology and Energy – Under contract.
 - EBB: \$3.2B (Started May – **until money runs out**) – Monthly service.
 - ISP – Families.
 - NM has ~800,000 households.
 - 41,500 (~5%) x \$60 = ~\$2.5M / Mo.
 - 70% of NM students are eligible for EBB.
 - ECF: \$7.2B (June 30 – **August 13**) – Modems & one year of service.
 - ISP – Schools.
 - No forms 470: negotiated or RFP (over \$60,000).
 - E-rate pays schools or ISPs.

Student and Teacher Connectivity: Long-term Solution

2. Create a Statewide Education Network (SEN).
 - PSCOC approves guidelines and state (PSCOF) funding.
 - Create advisory committee/governance framework.
 - Connect school sites together within districts and regionally.
 - Expansion of regional consortia model for internet services and network infrastructure projects.
 - Provide network management and cybersecurity expertise.
 - Phased approach to begin with ready/interested school districts.
 - Maximize access to federal E-rate funding for NM.

SEN: Preliminary Org Chart

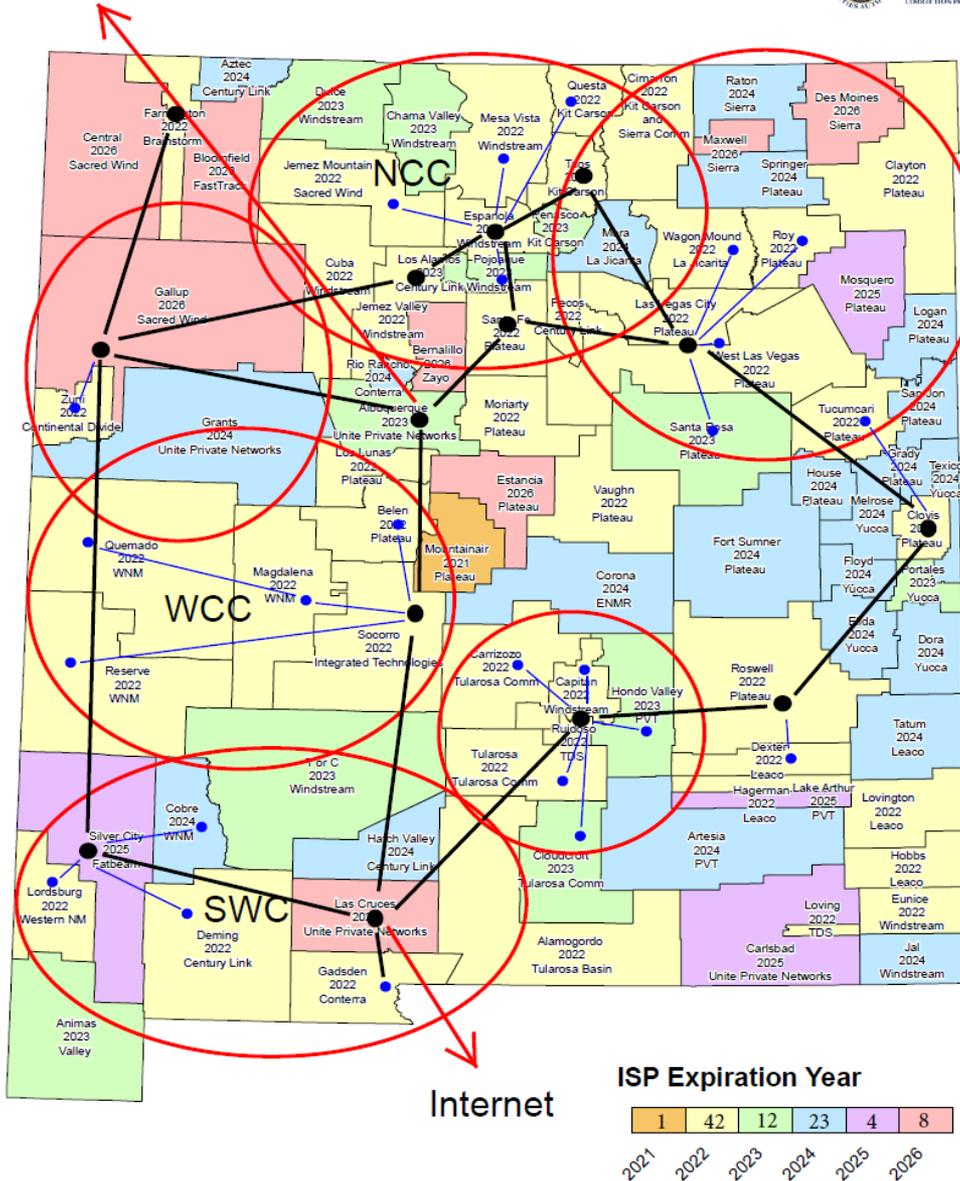


SEN: Preliminary Roles and Responsibilities

Organization	Roles and responsibilities
PSCOC	Approves guidelines, implementation framework and expenditures.
PED	Provides Education Technology and Cybersecurity funding (currently \$1.5M) & leadership (Chief Information Security Officer).
Statewide Education Network (SEN – Name TBD) Advisory Board	Provides strategic input and operational recommendations to the PSCOC and PSFA, on behalf of all the SEN members. Membership: thirteen seats representing members as follows: <ul style="list-style-type: none"> • Five members from school districts (one large: over 15,000 students; one medium: 8,000 – 15,000 students, three small: less than 2,000 students) • One charter school • Two Higher Ed (one University, one College) • One library • One tribal • PED CIO • Office of Broadband and Expansion Director • PSFA Director
Network Operations	Provides technical resources (contract, collaboration with other organizations or own staff) to professionally run the Statewide Education Network.
Internet Service Providers (ISPs)	Provide cost-effective, E-rate eligible commodity Internet and Data Transport circuits. Could also provide contract E-rate eligible Network Management services.
Core Sites	Locations where the SEN connects to the Internet.
Regional Hubs (collocation)	Aggregation sites established regionally where network equipment is installed and maintained and network services are performed for all members. Could be shared with other state network efforts.
CHECS	The New Mexico Council for Higher Education Computing/Communication Services is a non-profit consortium whose members are professionals from the computing services divisions. CHECS currently provides Internet Access to multiple Higher Education organizations.
Tribal/Pueblo Education Network	Network collaboration between pueblos / tribes and Santa Fe Indian School. Partner effort to the New Mexico Statewide Education Network.
Public K12, RECs, State Libraries, Colleges and Universities, Tribal K12, Tribal Colleges, possibly museums	Potential members of the collaborative between the Statewide Education Network (SB144), CHECS and the Pueblo/Tribal Education Network

SEN: Preliminary, Conceptual Map

Internet



Legend:

Blue dot: District Point of Presence (POP)/ Equipment Location.

Blue line: 1 Gbps Fiber Circuit.

Black dot: Regional Network Equipment Aggregation/ Colocation Site.

Black line: 10+ Gbps Fiber Backbone.



SEN: Preliminary Financial Plan

SB144 (Statewide Education Network) - Implementation
Preliminary financial plan
(All projected amounts in \$Millions)

	A	B	C	D	E	F	G	H
	Year					Total State five years	Potential E-rate	Total
	FY22	FY23	FY24	FY25	FY26			
Number of member districts	25	30	20	7	7			89
1 Statewide Education Network Initial setup and operations (100% State)*	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.5	\$ 2.5	\$ -	\$ 2.5
2 Backbone fiber construction (State share of E-rate match)**	\$ 2.0	\$ 2.0	\$ 0.5	\$ -	\$ -	\$ 4.5	\$ 30.0	\$ 34.5
3 IA and Data Transport Cost including pre-K (State share of E-rate match)***	\$ 1.0	\$ 1.5	\$ 2.0	\$ 2.0	\$ 2.0	\$ 8.5	\$ 56.7	\$ 65.2
4 Aggregation hub development**** (100% State)	\$ 0.5	\$ 1.0	\$ 1.0	\$ -	\$ -	\$ 2.5	\$ -	\$ 2.5
5 Equipment replacement (State share for potential E-rate match)	\$ 0.5	\$ 0.5	\$ 1.0	\$ 2.0	\$ 2.0	\$ 6.0	\$ 40.0	\$ 46.0
6 Network Management (State share for potential E-rate match - shown @ 50%)	\$ 1.5	\$ 2.0	\$ 2.5	\$ 3.0	\$ 3.0	\$ 12.0	\$ 24.0	\$ 36.0
7 Cybersecurity* (\$1.5M PED match and potential future appropriations)	\$ 1.0	\$ -	\$ -	\$ -	\$ -	\$ 1.0	\$ -	\$ 1.0
8 BDCP regular projects (Cat1 & Cat2 upgrades - State share for E-rate match)	\$ 2.0	\$ 2.0	\$ 2.0	\$ 2.0	\$ 2.0	\$ 10.0	\$ 66.7	\$ 76.7
9 Contingency	\$ 1.0	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.5	\$ 3.0	\$ -	\$ 3.0
10	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 50.0	\$ 217.3	\$ 267.3

* Includes: Non-profit setup and contract engineering, procurement support etc...

** Fiber construction to connect Aggregation sites without other options

*** Provide the E-rate match for IA and Data transport as incentive for participants

**** Aggregation hubs remodel to ensure power, cooling, security

SEN: Next Steps

Timeline – First Phase:

- August – October 2021: High-level, statewide engineering / conceptual planning, and procurement development.
- November 2021 – January 2022: Procurement for E-rate eligible services and projects.
- January – February 2022: Contracting for E-rate eligible services and projects.
- March 2022: E-rate funding application deadline.
- July 2022: Begin implementation of Phase 1 contracts for services and projects.

Questions

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Thank You!