

# Infrastructure Needs to Satisfy the Yazzie/Martinez Findings

Statewide Education Network (SEN) - SB144

Transportation Infrastructure Revenue Subcommittee

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*PSFA Presenters:*

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

# Agenda

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

# PSFA Broadband Program Background

- Number of projects: **280 (2016 - 2021).**
- 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.**

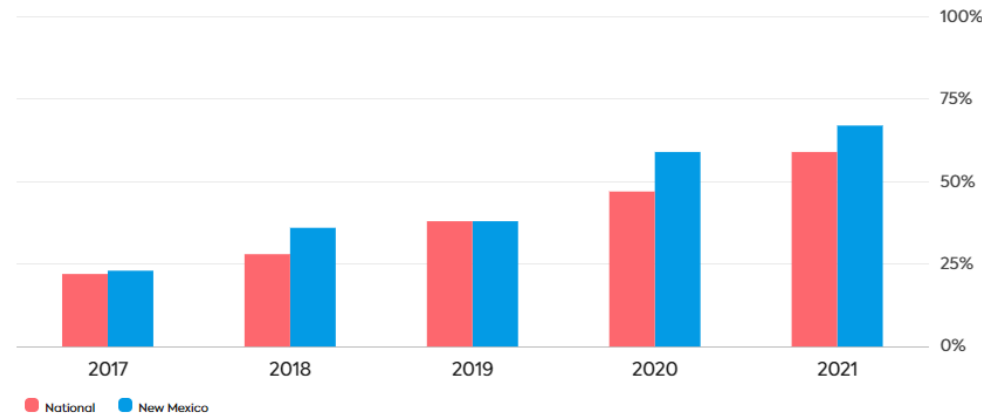
# PSFA Broadband Program: Progress

(From Connected Nation reporting)

67% of NM school districts are at 1 Mbps/student

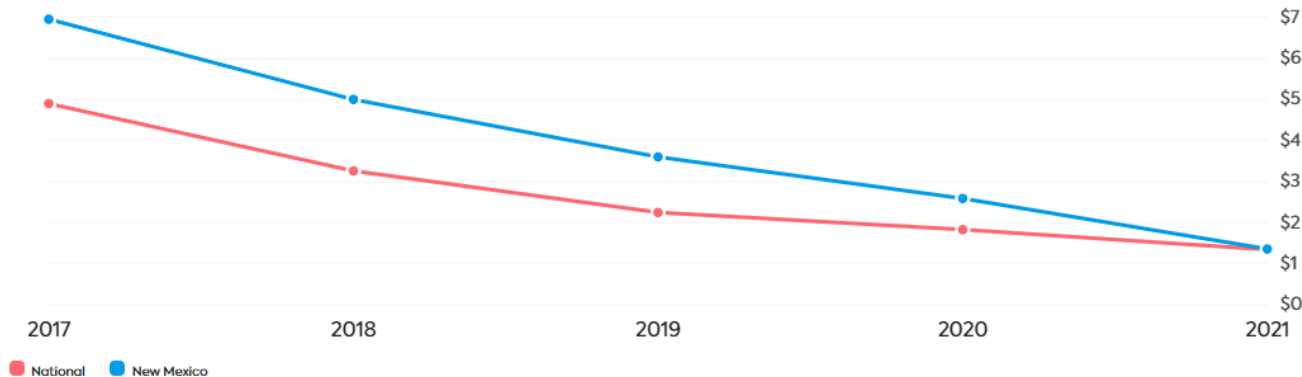
Progress toward the FCC recommended bandwidth goal

% school districts    % students



Since 2017, the cost of broadband in NM decreased by 80%

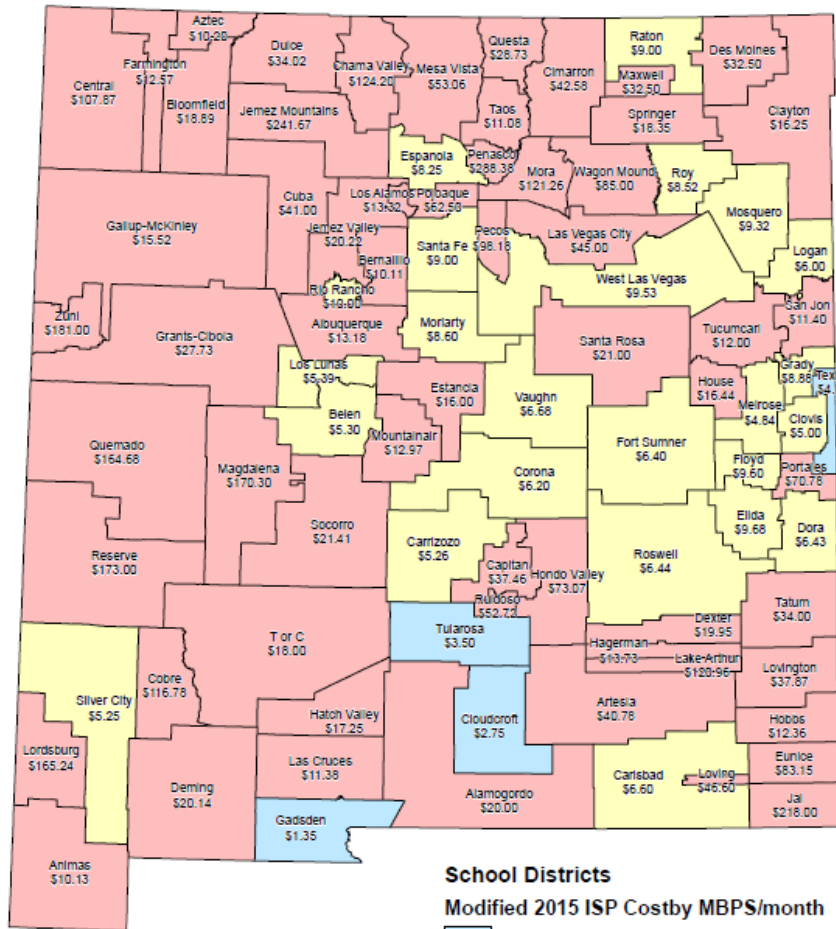
Median Cost per Mbps



States procure internet in different ways, which can impact their cost metrics. [Learn more.](#)

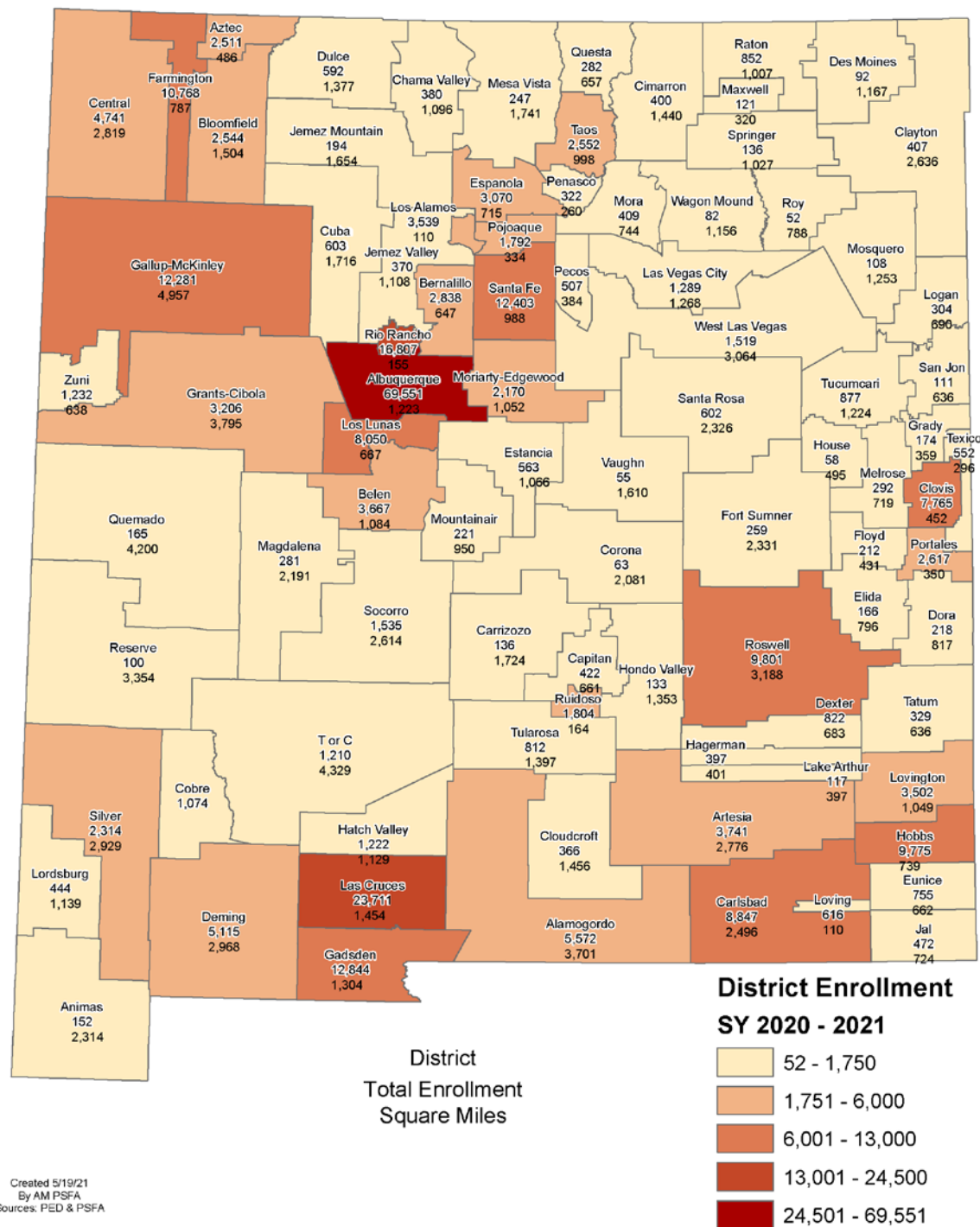
# PSFA Broadband Program: Progress

Modified ISP Cost by MBPS Per Month  
2015



# 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 + **\$14B** (Started May – **until money runs out**) – Monthly service.
      - ISP – Families.
      - NM has ~800,000 households.
      - 70,500 (~9%) x \$60 = ~\$4.2M / Mo.
      - 70% of NM students are eligible for EBB.
    - ECF: \$7.2B (June – October 2021: **\$80M requests**) – Modems & one year of service.
      - ISP – Schools.
      - No forms 470: negotiated or RFP (over \$60,000).
      - E-rate pays schools or ISPs.

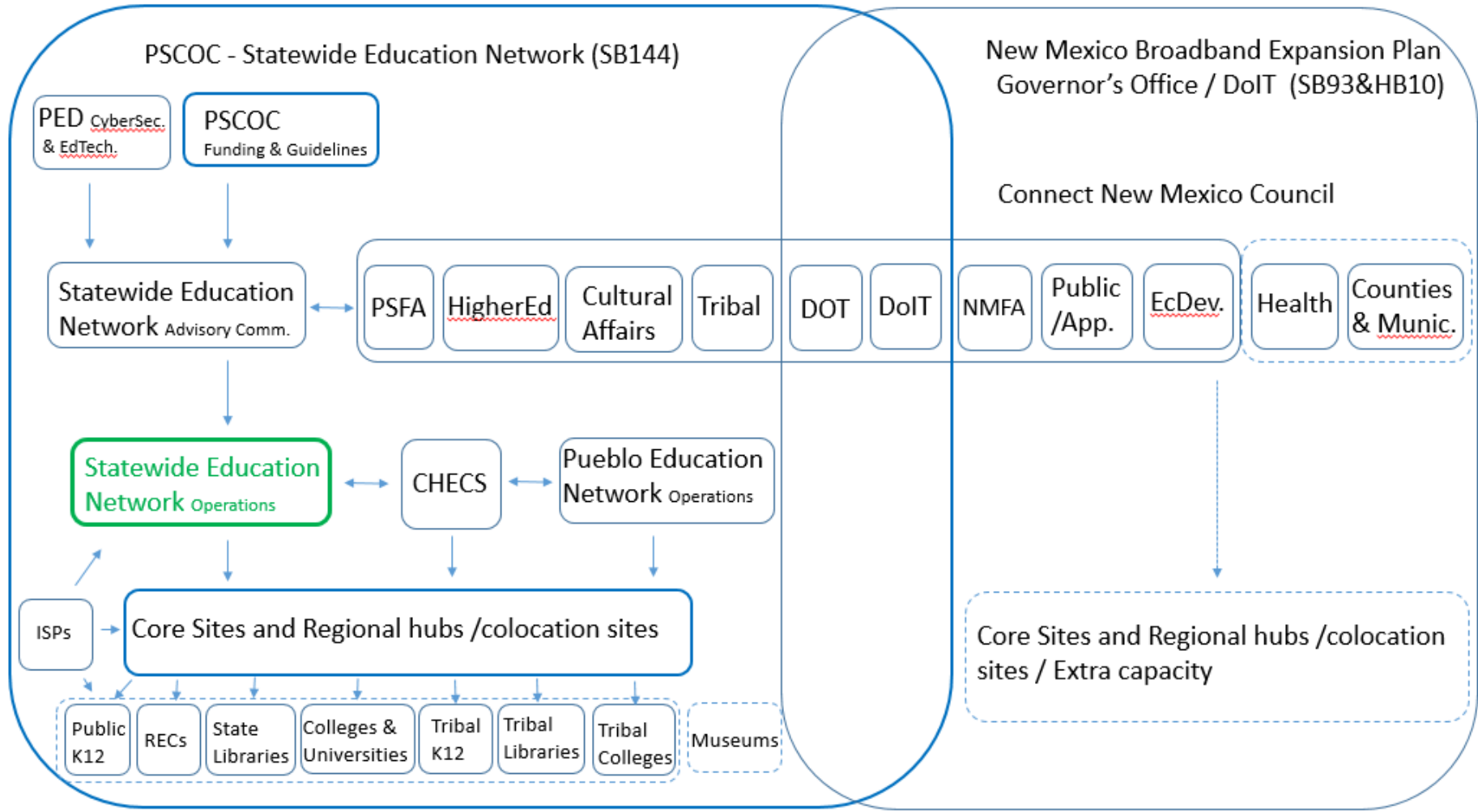


# Student and Teacher Connectivity: Long-term Solution

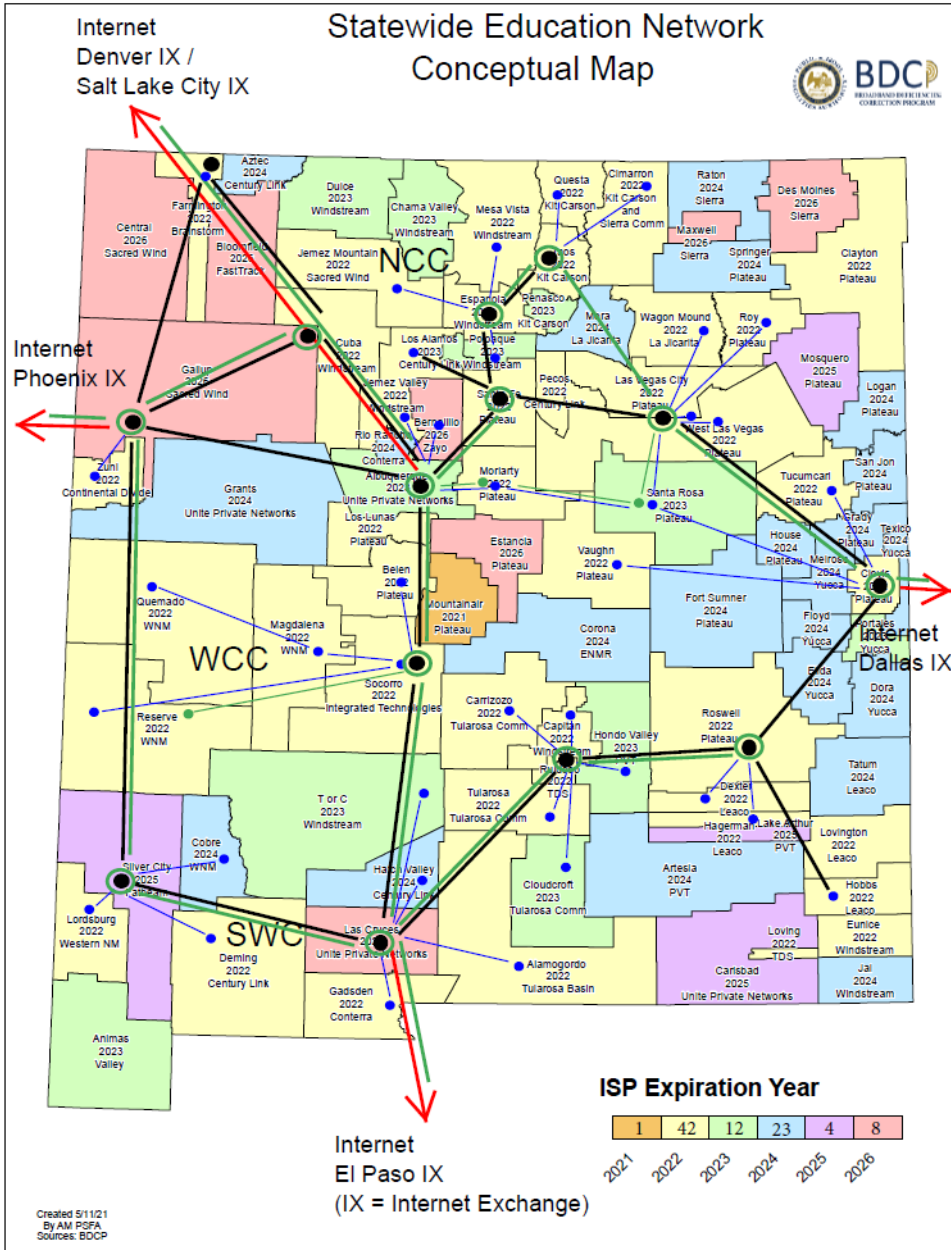
## 2. Create a Statewide Education Network (SEN).

- Advisory committee.
- PSCOC approves guidelines and state (PSCOF) funding.
- 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: Conceptual Map



## Legend:

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

**Green dot: Other** Point of Presence (POP)/  
Equipment Location (Early Childhood, Municipality,  
County, Health, Tribal etc...)

**Blue (thin) line:** 1+ Gbps School Circuit (E-rate).

**Green (thin) line:** 1+ Gbps Circuit (Extra capacity).

**Black dot:** Regional Network Equipment Aggregation/Colo. Site (HigherEd /Commercial).

**Green circle:** Extra broadband capacity available at Aggregation/Colocation Site.

**Black line:** 40-100+ Gbps Fiber Backbone (E-rate).

**Green (thick) line:** 10+ Gbps Fiber Backbone (Extra capacity).

**Red Arrow:** 10+ Gbps Internet Connection (E-rate).

## IX: Internet Exchange

# 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								
	FY22	FY23	FY24	FY25	FY26	Total State five years	Potential E-rate	Total	
<b>Number of member districts</b>	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	1
2 Backbone fiber construction (State share of E-rate match)**	\$ 2.0	\$ 2.0	\$ 0.5	\$ -	\$ -	\$ 4.5	\$ 30.0	\$ 34.5	2
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	3
4 Aggregation hub development**** (100% State)	\$ 1.0	\$ 1.0	\$ 1.0	\$ -	\$ -	\$ 3.0	\$ -	\$ 3.0	4
5 Equipment purchase / replacement (State share for potential E-rate match)	\$ 0.5	\$ 0.5	\$ 1.0	\$ 2.0	\$ 2.0	\$ 6.0	\$ 40.0	\$ 46.0	5
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	6
7 Cybersecurity* (\$1.5M PED match and potential future appropriations)	\$ 1.0	\$ -	\$ -	\$ -	\$ -	\$ 1.0	\$ -	\$ 1.0	7
8 BDCP regular projects (Cat1 & Cat2 upgrades - State share for E-rate match)	\$ 1.5	\$ 2.0	\$ 2.0	\$ 2.0	\$ 2.0	\$ 9.5	\$ 63.3	\$ 72.8	8
9 Contingency	\$ 1.0	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.5	\$ 3.0	\$ -	\$ 3.0	9
10 Total	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 10.0	\$ 50.0	\$ 214.0	\$ 264.0	10

\* Includes: Organizational 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

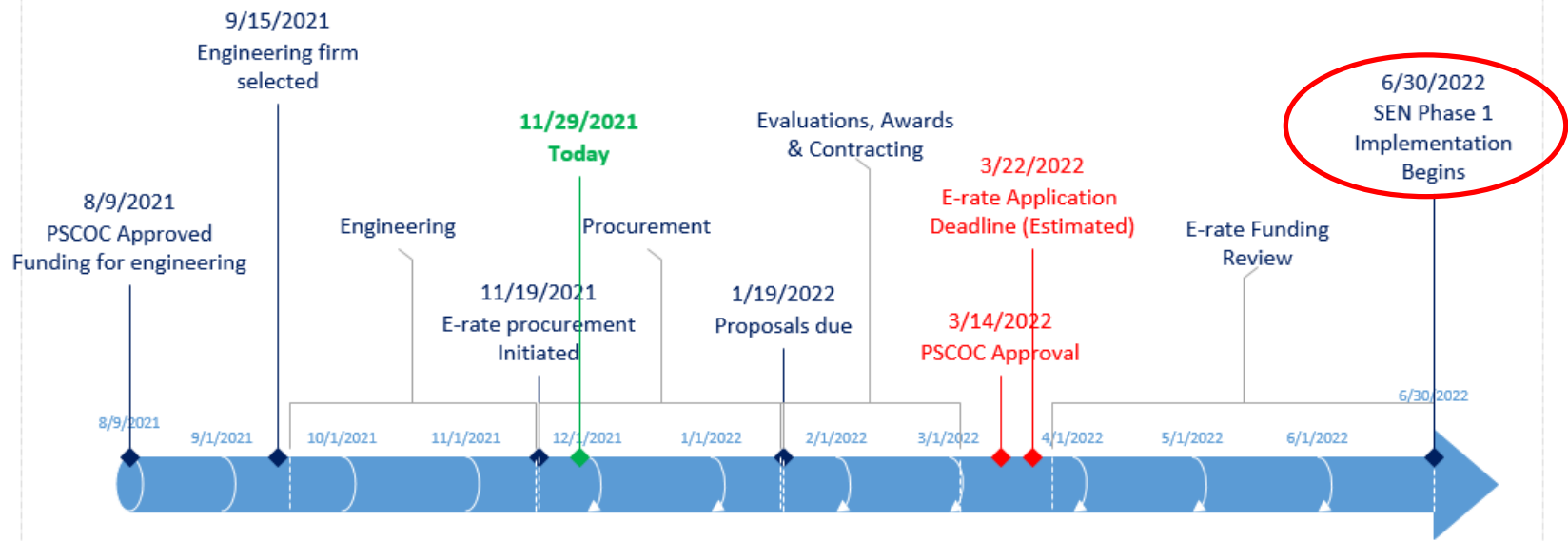
\*\*\*\* Aggregation hubs remodel to ensure power, cooling, security

# SEN: Timeline & Next Steps

## Timeline – First Phase:

- August – October 2021: High-level, statewide engineering 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 (**depends on E-rate approval**): Begin implementation of Phase 1 contracts for services and projects.

# SEN: Timeline & Next Steps



2021 – Statewide Education Network (SEN)  
Phase1



# Broadband Takeaways

- The SEN is essential for schools.
- In collaboration with ISPs, the NM SEN will serve as a **foundation** for other broadband priorities:
  1. Student & Teacher Connectivity.
  2. Other broadband expansion.
- State should consider investing in extra capacity.
- Broadband work is extremely complex.
- Maintain focus and keep broadband expansion a high priority.

# Questions

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Thank You!