BEAD Program: A Framework to Allocate Funding for Broadband Availability

State Broadband Report: South Dakota

January 2024

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SOUTH DAKOTA

BEAD Program Impact Assessment

1 Eligible Locations

How many unserved/underserved locations are eligible for BEAD funding?

9% 35K LOCATIONS

OF SOUTH DAKOTA LOCATIONS LACK HIGH-SPEED BROADBAND IN JUN 2023

VS. 9% STATE/TERRITORY AVERAGE

UNSERVED LOCATIONS, JUN. 2024

11.8K LOCATIONS

Are estimated to lack broadband access at **25/3 Mbps**

UNDERSERVED LOCATIONS, JUN. 2024

8.4K LOCATIONS

Are estimated to lack broadband access at **100/20 Mbps**

These locations are primarily in rural areas and are eligible for BEAD funding to deploy broadband service.

2 Total Funding

How much capital funding is the State/Territory estimated to have?

$207M

IN BEAD FUNDING HAS BEEN ALLOCATED TO SOUTH DAKOTA

VS. $743M STATE/TERRITORY AVERAGE

ESTIMATED BEAD FUNDING:

BEAD Funds allocated by NTIA	$207M
Estimated Provider Match	$61M
Estimated Total Capital	$268M

The provider match is estimated using a high-level service provider business case. See national summary deck for full details.

3 Deployment

How many locations can be covered with fiber and other technologies?

$53M-$207M

OF BEAD FUNDS IS REQUIRED TO BUILD HIGH-SPEED BROADBAND TO ALL ELIGIBLE LOCATIONS

DEPLOYMENT SCENARIOS:

Baseline Fiber		Maximum Fiber	
100% LOCATIONS REACHED	25% FIBER LOCATIONS	100% LOCATIONS REACHED	38% FIBER LOCATIONS
$114M TOTAL CAPITAL COST		$268M TOTAL CAPITAL COST	
$154M REMAINING BUDGET		$--M REMAINING BUDGET	

Source: Cartesian, NTIA

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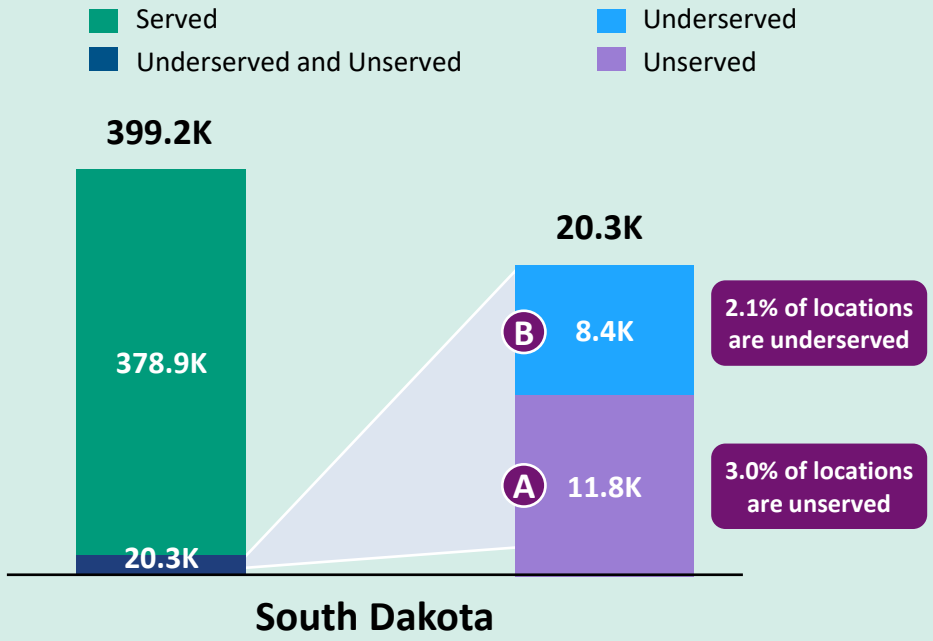
South Dakota | Estimated Eligible Locations for BEAD Projects

	Unserved *(less than 25Mbps/3Mbps)*	Underserved *(less than 100Mbps/20Mbps)*
June 2023 FCC Broadband Locations	**22.7K**	**12.0K**
− Subsidy Program Funded Locations[1]	9.1K	3.6K
− Incremental Build[2] (13% annual build, for 12 months)	1.8K	--
= **Jun. 2024 Estimated Eligible Locations**	**11.8K** (A)	**8.4K** (B)

Location Distribution in June 2024



We estimate 5% of locations will be eligible for BEAD Project Funding in South Dakota

1. Locations with "commitments" to receive support from federal subsidy programs
2. Given the uncertainty around the magnitude of locations moving from unserved to underserved, we have not made incremental builds adjustments to underserved locations

BEAD eligible locations does not account for state-specific eligibility rules set forth in Initial Proposals

Source: Cartesian, FCC National Broadband Map (June 2023 data, released in November 2023)

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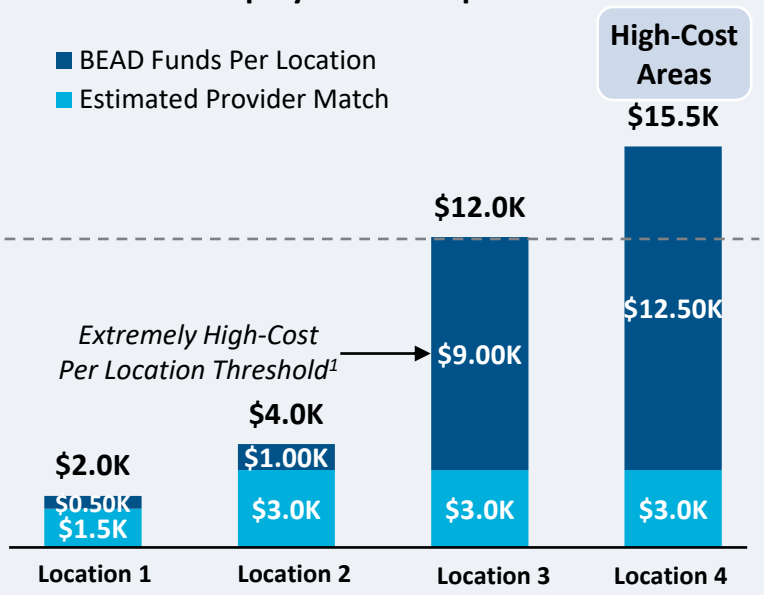
2 Calculate BEAD Funding

South Dakota | BEAD Funding & Estimated Provider Match

Provider Match Examples

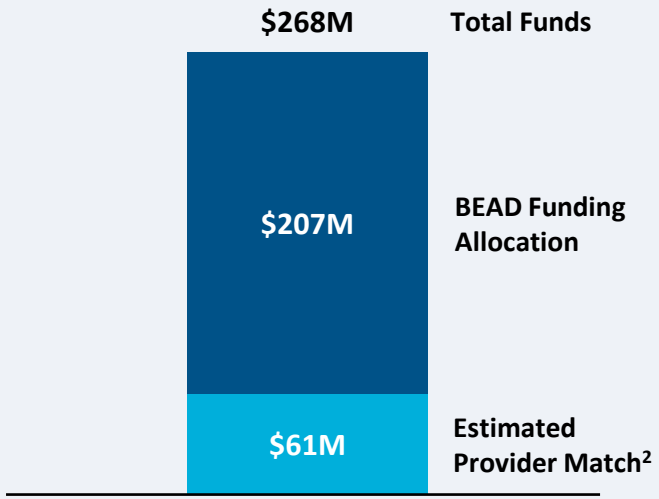
Total Deployment Cost per Location



Provider Match %			
75%	75%	25%	19%

To be conservative, we assume provider match amounts have a maximum of 75% and a minimum of 25%, except in high-cost areas

Total Capital Available - South Dakota



$268M in total capital is estimated to be available to serve unserved/underserved South Dakota locations (combining BEAD funding and estimated provider match)

Provider Match - South Dakota

Total Estimated Provider Match: $61M

÷ **Total Estimated Eligible Locations:** 20.3K

= **Average Provider Match:** $2,997 *PER LOCATION*

We estimate the average provider match will be $2,997 – provider matches will be 75% where cost to deploy is less than $4K

1. The model uses a $9k threshold, however, States/Territories will individually need to determine their appropriate extremely high-cost threshold
2. In reality, providers will determine the viable level of match funding for each project using a business case model. They will be willing to contribute a greater match in some locations and less in others. Locations which are hardest to serve may need to be fully funded by BEAD with no match. Competitive bidding should drive provider matches towards this level.

Source: Cartesian, FCC National Broadband Map (June 2023 data, released in November 2023), Benton, NTIA

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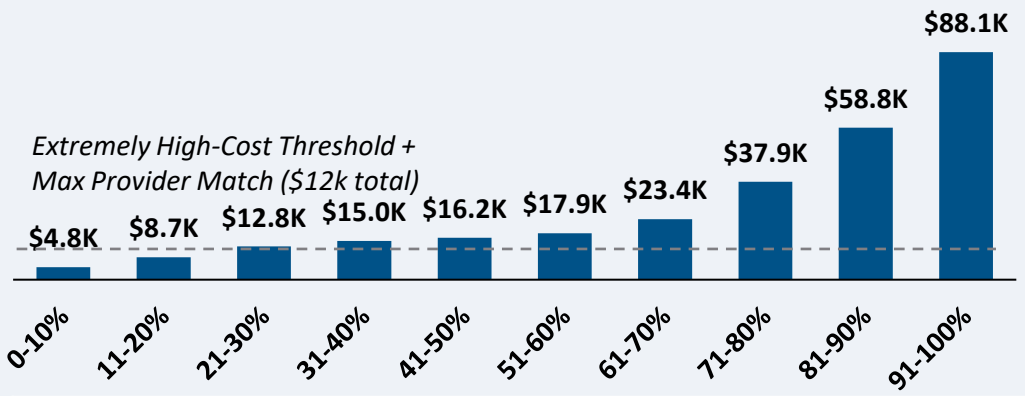
South Dakota | Cost to Deploy Fiber by Decile

CAPEX Fiber Deployment Cost per Location Segmented by Cost Deciles[1]

Unserved Locations

Overall Average Cost per Location: $29,268

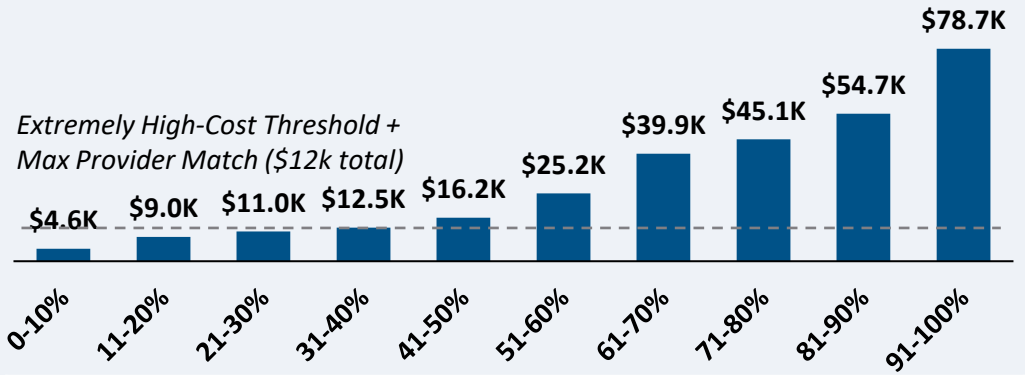


Average Tract Density *(Location per sq. Mile)*									
18	28	10	11	4	6	8	2	1	1

11.8K Locations

Underserved Locations

Overall Average Cost per Location: $31,850



Average Tract Density *(Location per sq. Mile)*									
22	8	12	3	9	2	1	2	2	1

8.4K Locations

Over 20% of locations are estimated to fall below the High-Cost Threshold + Provider Match

1. Chart values are average cost per location for each decile bucket

Source: Cartesian, FCC National Broadband Map (June 2023 data, released in November 2023)

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South Dakota | Fiber Preferencing Scenarios

	1 Baseline Fiber Deployment	2 Maximum Fiber Deployment[1]
PRIMARY ACCESS TECHNOLOGY:	Below High-Cost Threshold: **FIBER** Above High-Cost Threshold: **FIXED WIRELESS**	Below High-Cost Threshold: **FIBER** Above High-Cost Threshold: **FIBER & FIXED WIRELESS**
FUNDING PRIORITIZATION:	Fiber is first deployed to unserved locations below extremely high-cost threshold, from least expensive to most **If there are funds leftover…** Unserved locations above the extremely high-cost threshold are then served with fixed wireless **If there are funds leftover…** Remaining funds used to deploy fiber to as many underserved locations below the high-cost threshold, while retaining enough funds to serve remaining underserved locations with fixed wireless	Fiber is deployed to low-cost areas first across both unserved and underserved locations **Model optimizes to maximize fiber locations and achieve full coverage within budget** As many locations as possible are served with fiber, while leaving budget for fixed wireless when 100% fiber coverage is not possible
OUTCOME:	More funding for other eligible programs	More locations reached with fiber

1. Scenario 2 deploys fiber beyond the extremely high-cost threshold

Source: Cartesian

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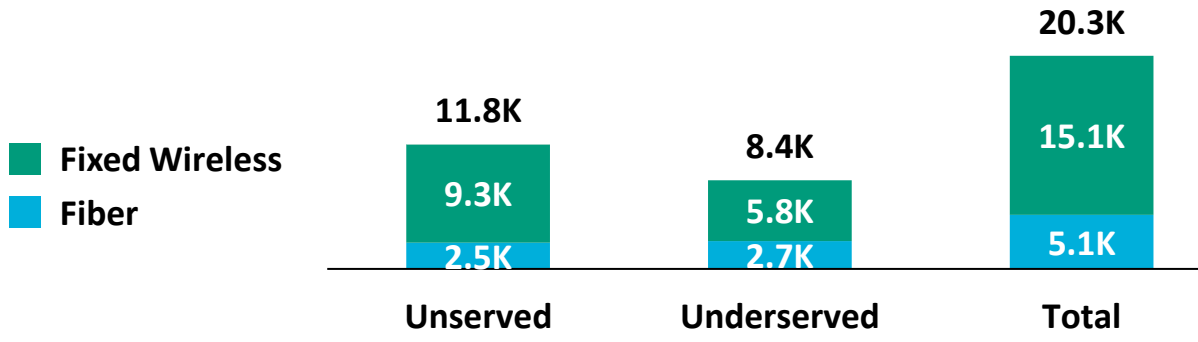
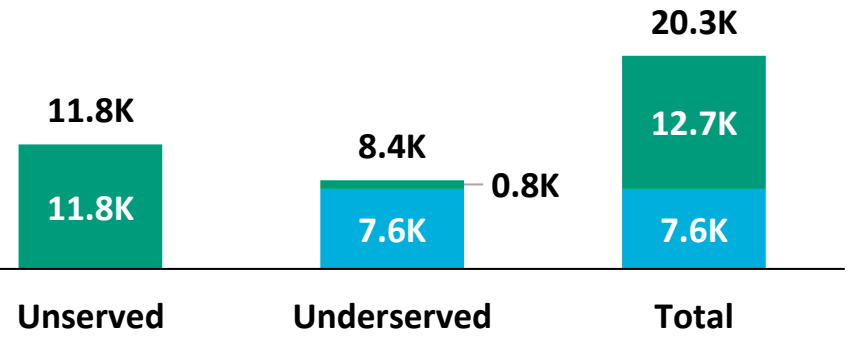
South Dakota | Scenario Analysis Results

SCENARIO:

1 Baseline Fiber Deployment



2 Maximum Fiber Deployment



	Baseline Fiber Deployment			Maximum Fiber Deployment		
Capex Required per Locations[1]	$5,304	$6,027	$5,605	$4,800	$24,398	$12,958
BEAD Funds Available to State	$207M			$207M		
+ Estimated Provider Match	$61M			$61M		
= Total Available Capital	$268M			$268M		
− Capex Required to Build	$114M			+$154M	$268M	
= Remaining Funds	$154M			$--M		
% of Locations Reached	100%			100%		
% of Locations Reached with Fiber	25%			+13%	38%	

1. Funding to deploy fiber before the maximum $3k provider match per location

Source: Cartesian, FCC National Broadband Map (June 2023 data, released in November 2023), Benton, NTIA

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South Dakota | Conclusion

Funding Summary

South Dakota is expected to receive

$207M in BEAD funding

+

$61M in estimated provider matching

We estimate the funding is sufficient to reach all of South Dakota's 20.3k eligible locations with high-speed broadband

Key Findings

South Dakota will need to decide how far to deploy fiber while considering the trade-off of having higher fiber coverage vs. retaining funds for other BEAD eligible programs

A Baseline Fiber Deployment…	vs.	Maximizing Fiber…
• Leaves $154M additional funds for affordability programs • Reaches 25% of locations with fiber • Requires 75% to be reached with other tech.		• Exhausts funds without leaving additional funds for affordability programs • Reaches 38% of locations with fiber • Requires 62% to be reached with other tech.

States/Territories will set their own extremely high-cost threshold and may choose a threshold or funding paradigm different from these two scenarios

Source: Cartesian, NTIA

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Cable One, Inc.
Cencom, Inc.
Clarity Telecom, LLC dba Bluepeak
Consolidated Cable Vision
Consolidated Communications, Inc.
Dickey Rural Services
Golden West Cablevision, Inc.
Grain Capital
Hanson Communications, Inc.
Interstate Telecommunications Coop, Inc.
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RC Technologies
Red River Rural Telephone Association
Santel Communications Cooperative
TDS Telecom
Three River Telco
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Source: Cartesian, FCC National Broadband Map (June 2023 data, released in November 2023), ACA Connects

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GRANT SPELLMEYER
PRESIDENT AND CEO
GSPELLMEYER@ACACONNECTS.ORG

MICHAEL DARGUE
VICE PRESIDENT
MICHAEL.DARGUE@CARTESIAN.COM

BRIAN HURLEY
CHIEF REGULATORY COUNSEL
BHURLEY@ACACONNECTS.ORG

SAMUEL KORNSTEIN
MANAGING DIRECTOR
SAMUEL.KORNSTEIN@CARTESIAN.COM

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