Five-Year Action Plan

Last Revision Date: 8/25/23

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1 Executive Summary

Broadband access has been a priority of the State of South Dakota for several decades. As early as 1996, South Dakota connected all public schools to high-speed internet with its Connecting the Schools project. As stated on the Governor's website, South Dakota aims to "ensure that every single South Dakotan is able to access broadband service that meets their needs."[1]

The State's vision is that, through strategic investments, South Dakota will connect every rural and urban resident, agricultural and commercial business, and community anchor institution to high-speed broadband internet across all locations in the State, allowing every South Dakota citizen to fulfil their economic and social pursuits. The State's current broadband initiative is being implemented through the ConnectSD Program, which was launched in 2019.[2] To date, the ConnectSD program has leveraged $58 million of state general funds along with $89 million of federal funds, and over $122 million of private investment from the broadband providers. These investments total almost $270 million in broadband expansion in our state since Governor Kristi Noem took office in 2019. With these funds, we have awarded 103 grants or projects and have connected or are in the process of connecting 31,000 locations that either did not have internet or were underserved.

Across the broadband industry, experts have long argued policies around what is considered underserved locations, what speed is a minimum, and what technologies should be used, etc. South Dakota is not satisfied with the "good enough" mentality that would utilize a technology that most often only barely reaches minimum speeds. Rather, the state has made the policy decision to approve and fund future-proof fiber projects that are the gold standard for broadband deployment. Other technologies such as copper, fixed wireless, and satellite, while they have their place in the ecosystem, are considered temporary "stop-gap" technologies. These technologies are undesirable to the end user experience.

The State recognizes more work needs to be done to deploy broadband to unserved and underserved areas of the State; specifically, the area around the Black Hills, select Tribal Entities, and a few southeast counties. Due to their geography and more rural nature, deployment in these areas is difficult and costly. ConnectSD will have another grant round for broadband expansion funding in the fall of 2023 (see Appendix 3).

Through the Broadband Equity, Access, and Deployment (BEAD) Program, the State intends to connect the rest of the areas that have not yet been reached through the ConnectSD Program. Additionally, the State has partnered with the Department of Labor and Regulation to work with the Digital Equity Program. This program will help to effectively produce digital citizens by ensuring all South Dakotans can benefit from broadband through affordable access, skills, and support to effectively engage online with their high-speed internet once it is deployed.

This plan provides more detailed information about the current state of broadband in South Dakota, the State's efforts to expand broadband so far, and the initiatives that it will be able to undertake through the BEAD Program.

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[1] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Connecting South Dakota. Accessed at: https://governor.sd.gov/priorities/broadband.aspx.
[2] South Dakota Governor's Office of Economic Development (accessed on March 29, 2023), ConnectSD Broadband. Accessed at: https://sdgoed.com/public-records/connectsd/.

2 Overview of the Five-Year Action Plan

2.1   Vision

South Dakota has a proud history of prioritizing broadband access for its residents, businesses, and communities. As far back as 1996, the State became one of the first in the country to connect all public schools to high-speed internet under the Connecting the Schools project. South Dakota has also been at the vanguard of expanding its broadband coverage since before the COVID pandemic under the leadership of Governor Kristi Noem. In her first address to the South Dakota State Legislature in 2019, Governor Noem highlighted the importance of broadband to the future of South Dakota. Governor Noem stated, "raising the next generation with tools such as broadband is our responsibility" and promised to work with rural communities, bring in industry leaders, consider emerging technologies, and dedicate "[S]tate resources to closing the broadband gap."[3]

The funding made available in the Bipartisan Infrastructure Law will be used to build on the strong foundational layer of broadband infrastructure the State has laid. The State views this as a means to continue implementing its vision of creating economic opportunity and bridging the digital divide in the State. Below is the overall vision for South Dakota's broadband plan.

Vision:		
Through strategic investments, South Dakota will connect every rural and urban resident, agricultural and commercial business, and community anchor institution to high-speed broadband internet across all locations in the State, allowing every South Dakota citizen to fulfil their economic and social pursuits.		
South Dakota's vision emphasizes the following three areas:		
WHO	"Every rural and urban resident, agricultural and commercial business, and community anchor institution" acknowledges the inclusive nature of South Dakota's vision to connect every section of society with broadband.	
WHAT	"Sustainable high-speed broadband internet" includes 250/20 Mbps as a short-term minimum with 500/20 Mbps or beyond as the long-term goal.	
WHY	Allowing every South Dakotan citizen to "fulfil their economic and social pursuits" is the aim of these efforts.	

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[3] South Dakota Governor's Office of Economic Development (published in May 2019), Broadband in South Dakota – May 2019. Accessed at: https://sdgoed.com/wp-content/uploads/2020/08/State-Broadband-Plan.pdf.

2.1.1 South Dakota's Vision for Broadband Deployment and Digital Equity

South Dakota's 2019 State Broadband Plan (being implemented since 2019 under the ConnectSD program) sought to significantly increase broadband access, focusing on counties with especially low levels of broadband penetration.
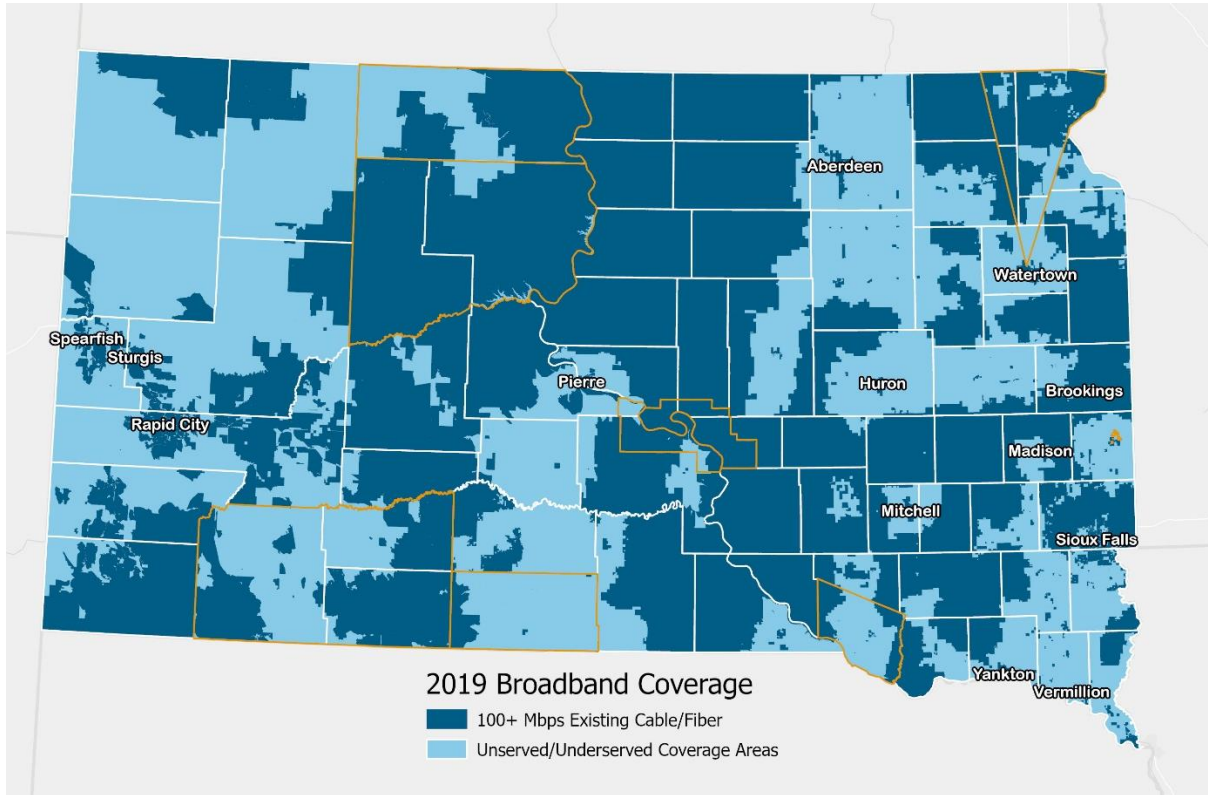
Figure 1. Census blocks with 100 Mbps+ download speeds in 2019[4]

In 2019, the State's fiber coverage was just beginning to take off, with large parts of the State without any fiber lines. As the State began focused planning and funding efforts through ConnectSD, several State and federal-funded grants have been awarded to ISPs. Private capital too, has been invested in a big way to expand fiber lines across the State, connecting thousands of new locations over the past few years.

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[4] South Dakota Bureau of Information & Telecommunications (accessed on August 24, 2023), SD Broadband. Accessed at: https://sdbit.maps.arcgis.com/apps/dashboards/fc84d92a97dd48598d46d1db420853b1
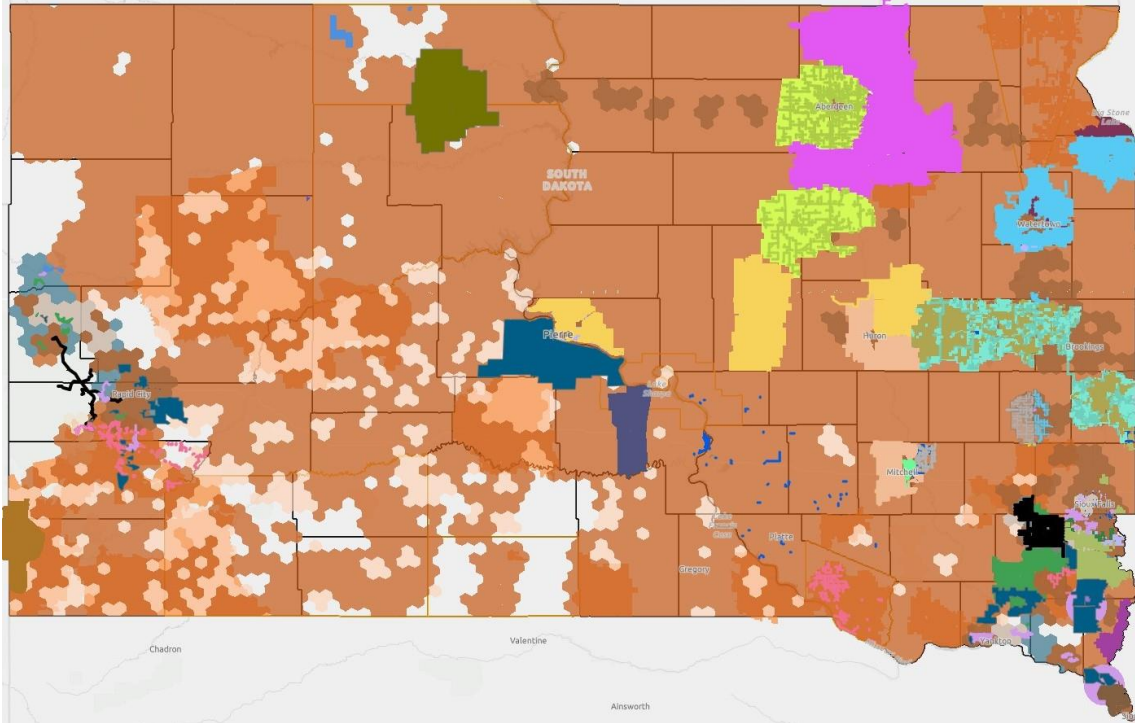
Figure 2. Census blocks with existing 100 Mbps+ speeds, along with a range of publicly and privately funded expansion projects and their estimated future fiber coverage[5]

Since ConnectSD is now in its fifth year, large strides have been made to expand coverage. The three areas where infrastructure still needs to be deployed are the Black Hills, counties with Tribal Entities (Oglala Lakota, Todd, Corson), and select counties in the southeast region of the State. Given the amount of the funding available, the South Dakota vision in this effort is for every South Dakota citizen to have access to sustainable, high-speed internet, regardless of geographic location. By bridging the digital divide in a strategic and sustainable way now, South Dakota aims to build a long-term future for the State that thrives on digital opportunity and equity for its households, businesses, and communities.

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[5] South Dakota Bureau of Information & Telecommunications (accessed on August 24, 2023), SD Broadband. Accessed at: https://sdbit.maps.arcgis.com/apps/dashboards/fc84d92a97dd48598d46d1db420853b1
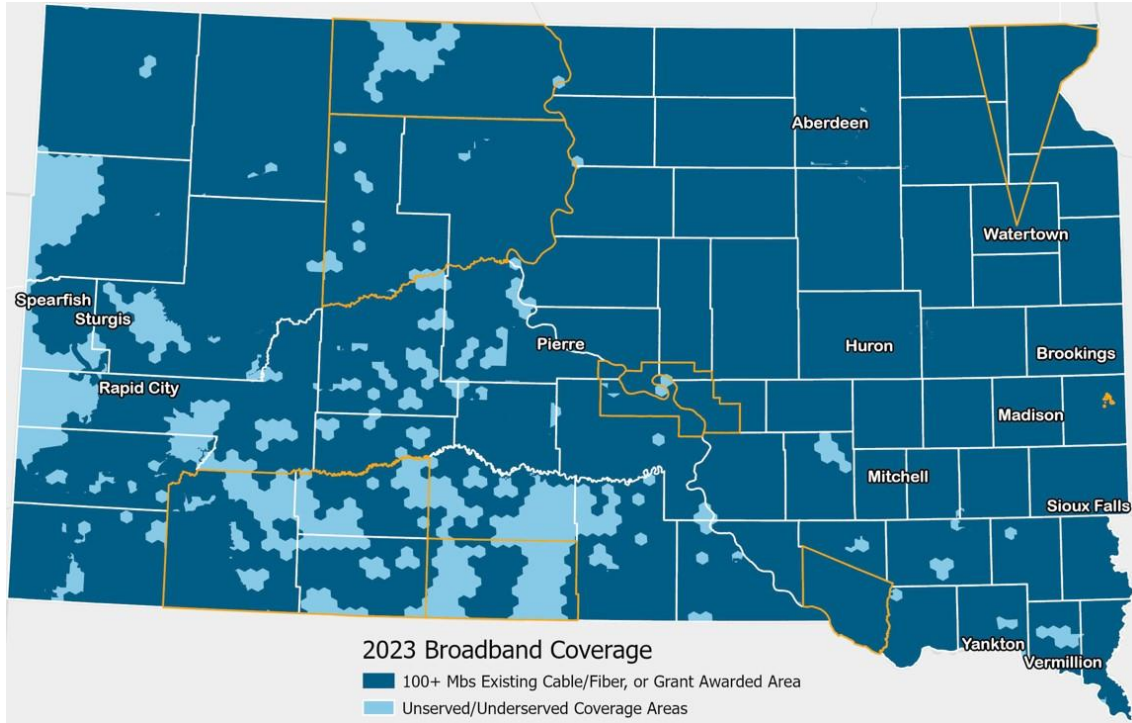
Figure 3. 3 Census blocks with 100 Mbps + download speeds after all ongoing fiber expansion projects (except those under the Tribal Broadband Connectivity Program) are completed[6]

2.1.2 South Dakota BEAD and DE Vision for Success

Success in South Dakota means universal access to all locations, treating 100 Mbps download and 20 Mbps upload as a minimum standard, and striving to bring 250 Mbps download and 20 Mbps upload speeds to as many residents as possible. By 2027, 500 Mbps symmetrical and beyond should be the standard in line with the expectations South Dakota is already establishing in its broadband grant programs.

Success entails facilitating and realizing the economic benefit that comes from a connected community, be it in job creation, direct stimulus, or workforce growth and development. Success also means building an environment conducive to responsible digital citizenship and offering outlets for South Dakotans to exercise that citizenship. With expanded broadband access, South Dakotans can engage in public hearings, renew a driver's license, request a hunting and fishing license or permit, and participate in other government services in a streamlined, online manner.

Lastly, success in South Dakota means investing for long-term use, even if speed standards continue to increase. This means bringing fiber connectivity to as many locations as possible. Sustainability also means South Dakotans must be able to access the services even after this federal funding is expended.

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[6] South Dakota Bureau of Information Technology (accessed on August 24, 2023), SD Broadband. Accessed at: https://sdbit.maps.arcgis.com/apps/dashboards/fc84d92a97dd48598d46d1db420853b1.

2.1.3 South Dakota BEAD and State Digital Equity Planning Grant (SDEPG) Alignment

South Dakota is committed to ensuring all citizens, businesses, and institutions have access to sustainable high-speed internet. This encompasses the covered populations outlined by the NTIA, including individuals who are low-income, aging, incarcerated, disabled, veterans, and racial and ethnic minorities; individuals who have language barriers; and individuals from rural areas. Through collaborative efforts between the BEAD Plan and Digital Equity Plan, South Dakota is working to maximize public reach and benefits of broadband expansion.

South Dakota recognizes the Digital Equity Plan is intrinsically linked to the BEAD Plan. The State sees the overarching visions for both plans as a unifying view for what can be accomplished for South Dakota. By combining the physical infrastructure improvements of the BEAD Plan and the digital citizenship efforts of the Digital Equity Plan, South Dakota aims to make broadband access a beneficial reality for all its citizens.

2.2 *Goals and Objectives*

South Dakota's goals and objectives all stem from its unifying vision for sustainable high-speed broadband internet coverage for the entire State. The State has identified four overarching goals, each a sub-component of South Dakota's vision that also contains its own set of measurable objectives.

South Dakota BEAD Program Framework			
Vision:			
Through strategic investments, South Dakota will connect every rural and urban resident, agricultural and commercial business, and community anchor institution to high-speed broadband internet across all locations in the State, allowing every South Dakota citizen to fulfil their economic and social pursuits.			
Goals:			
1. **Universal Access:** Provide every rural and urban resident, agricultural and commercial business, and community anchor institution with the means to access broadband by 2027.	2. **Economic Enhancement:** Support economic growth, job creation, and workforce development through expanded broadband access and adoption.	3. **Digital Citizenship:** Expand opportunity for South Dakotans to exercise competent civic engagement.	4. **Longevity:** Ensure broadband access continues beyond 2028.
Objectives:			
1.1 Deployment: Deploy broadband infrastructure throughout all regions of the State with the potential of minimum download speeds of at least 250 Mbps and upload speeds of at least 20 Mbps, with 500 Mbps symmetrical and beyond by 2027. **1.2 Access:** Ensure every South Dakota citizen has reliable access to high-speed internet through personal devices or public access points. **1.3 Affordability:** Provide affordable access to broadband that every South Dakota citizen needs for work, school, healthcare, and other aspects of daily life. **1.4 Adoption:** Engage community stakeholders to determine roadblocks to broadband adoption in their respective communities and ways the State can address gaps or support the communities in overcoming these issues. **1.5 Digital Equity:** Increase awareness around existing programs that address digital equity and initiatives established through the Digital Equity Act.	**2.1 Economic Development**: Encourage South Dakotans to realize economic benefits of expanded broadband access through associated increase in productive and innovation in areas such as education, healthcare services, and workforce development, among others. **2.2 Job Creation**: Stimulate local job creation both for construction and development activities associated with the laying of broadband infrastructure, as well as creation of new jobs that require improved digital literacy and internet access. **2.3 Workforce Development**: Coordinate with the Department of Labor and Regulation (DLR) to establish a long-term partnership to ensure the workforce has the required digital literacy to progress in its choice of career trajectory.	**3.1 Competent Use of Internet Education**: Build competent and responsible users of the internet through early and ongoing education, training, and other resources. **3.2 Digital Government**: Provide access to government services online to improve the quality of life of every citizen and enhance the government's efficiency of service delivery. **3.3 Public Safety**: Ensure public safety services have sufficient tools, training, and broadband access to effectively coordinate with one another and protect the general public.	**4.1 Broadband Deployment**: Create a strategy to establish fiber as the State's preferred type of broadband. **4.2 Ongoing Digital Literacy**: Create resources to provide continued support to businesses and households to use broadband beyond 2028.

The following sections describe each of these goals and supporting objectives in more detail.

2.2.1 Goal 1 – Universal Access: Provide rural and urban residents, agricultural and commercial businesses, and community anchor institution with the means to access broadband by 2027.

By the end of the implementation of this Five-Year Action Plan, South Dakota plans to equip citizens, commercial and agricultural businesses, and community institutions with the means to access broadband by 2027. The timeline is aggressive but achievable. For South Dakotans to reap the personal and economic benefits of these efforts, internet access across the State is necessary to keep up with the national and international marketplace that is increasingly online.

2.2.1.1 Objective 1.1 Deployment

Objective 1.1: Deploy broadband infrastructure throughout all regions of the State with the potential of minimum download speeds of at least 250 Mbps and upload speeds of at least 20 Mbps, with 500 Mbps symmetrical and beyond by 2027.

Broadband technology is known to advance at an accelerated pace. Anticipating the technological enhancements in this space, South Dakota plans to increase the target download and upload speeds in a phased manner. This approach provides an evolving goal that acknowledges the pace of innovation expected for the industry. As one of the most business-friendly states in the country, South Dakota will continue to incentivize and encourage economic activity within its borders. A key component of that is offering widespread broadband access that gains strength and speed through 2027 and beyond.

2.2.1.2 Objective 1.2 Access

Objective 1.2: Ensure every South Dakota citizen has reliable access to high-speed internet through personal devices or public access points.

Access means access for everyone, regardless of income level, age, incarceration status, disability, veteran status, race, ethnicity, primary language, level of literacy, or geographic location. In South Dakota, this means encouraging public access points through public computer centers and Wi-Fi. Further, as personal devices become more universal, internet access includes consideration of the tools to engage and benefit from the internet.

2.2.1.3 Objective 1.3 Affordability

Objective 1.3: Provide affordable access to broadband that every South Dakota citizen needs for work, school, healthcare, and other aspects of daily life.

The affordability of broadband is key to ensuring South Dakotans can experience the full benefits of the service. As South Dakota recognized in its 2019 report, vastly disparate service for varying price points currently exists, especially for rural communities and other covered populations. South Dakota does not want price to be the sole deterrent for residents and businesses. South Dakota wants to ensure the monthly cost for dependable broadband access is not prohibitively expensive.

While it is inevitable that a certain percentage of households will not opt into broadband access, removing as many barriers as possible for South Dakotans is key to overall success. One way the State intends to address the barrier of affordability is by continuing to publicize and popularize the Affordable Connectivity Program (ACP) offered by the Federal Communications Commission (FCC), which provides discounts on internet services for certain low-income

households.[7] While ACP is temporary and set to expire, this benefit offers an important avenue to keep broadband affordable in the State.

2.2.1.4   Objective 1.4 Adoption

Objective 1.4: Engage community stakeholders to determine roadblocks to broadband adoption in their respective communities and ways the State can address gaps or support the communities in overcoming these issues.

South Dakota is fortunate that a network of community groups and advocacy organizations are engaged in the efforts to bridge the digital divide. These stakeholders hold insights into roadblocks to broadband adoption within their respective communities. The drivers of adoption vary from community to community but increasing the percentage of broadband subscriptions to residents and businesses that want to participate is a key objective of South Dakota.

2.2.1.5   Objective 1.5 Digital Equity

Objective 1.5: Increase awareness around existing programs that address digital equity and initiatives established through the Digital Equity Act.

South Dakota is building out a detailed Digital Equity Plan in parallel to this Plan with a strategy to capture equity initiatives in the expansion of broadband access in the State.

2.2.2   Goal 2 – Economic Enhancement: Support economic growth, job creation, and workforce development through expanded broadband access and adoption.

South Dakota has a long history of a business-friendly environment. The State recognizes that a healthy economic environment involves an easily navigable regulatory environment, a skilled and trained workforce, and sufficient opportunity to start and grow new ventures. Leveraging broadband access to unlock economic potential is a core goal of South Dakota.

2.2.2.1   Objective 2.1 Economic Development

Objective 2.1: Encourage South Dakotans to realize economic benefits of expanded broadband access through associated increase in productivity and innovation in areas such as education, healthcare services, and workforce development, among others.

South Dakota's small and medium-scale businesses, tradespeople, and other entities can all leverage the power of being connected to the global marketplace but also utilize it to improve its business efficiencies locally. The State will aim to facilitate the growth in productivity that can be achieved by businesses through adopting a more digital approach enabled by high-speed broadband. For example, a South Dakotan soybean farmer can access wider markets online to move excess inventory.

2.2.2.2   Objective 2.2 Job Creation

Objective 2.2: Stimulate local job creation both for construction and development activities associated with laying of broadband infrastructure, as well as creation of new jobs that require improved digital literacy and internet access.

South Dakota's initiatives to expand broadband infrastructure will be aimed at creating jobs for telecommunications technicians, construction workers, civil engineers, and other associated

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[7] Federal Communications Commission (accessed on March 15, 2023), Affordable Connectivity Outreach Grant Program. Accessed at: https://www.fcc.gov/acp-grants.

workers that will be engaged in laying out the fiber cables and providing internet services directly to consumers.

Broadband connection will spur the incubation of new internet-reliant businesses and expand existing businesses that can grow with improved internet connectivity. The growth spurt can create new jobs for South Dakotans who will not only have access to digital tools but will have access to resources to learn how to use them, as outline under Objective 2.3.

2.2.2.3   Objective 2.3 Workforce Development

Objective 2.3: Establish a long-term partnership with the Department of Labor and Regulation (DLR) and coordinate efforts to ensure a digitally literate workforce.

The mission of the South Dakota Department of Labor and Regulation (DLR) is "to promote economic opportunity and financial security for individuals and businesses through quality, responsive, and expert services; fair and equitable employment solutions; and safe and sound business practices."[8] DLR currently funds and provides affordable access to certification and licensing programs that train residents not just in computer and digital-based skills, but in a wide range of skill sets through college and university campuses. While some of these are offered to residents in hybrid form, high-speed broadband access can encourage underserved communities to access these programs at higher rates.

Partnering with DLR can expand existing programs and facilitate the creation of new workforce development programs to connect residents to higher paying jobs in an internet-based economy. A modern workforce must be prepared to take on the challenges of advancing technology through continuous and ongoing training, which high-speed broadband will enable.

2.2.3 Goal 3 – Digital Citizenship: Expand opportunity for South Dakotans to exercise competent civic engagement.

As previously underserved and unserved communities in South Dakota get online through high-speed broadband, the State will ensure that they have seamless online access to existing essential services that they need to lead a high quality of life.

2.2.3.1   Objective 3.1 Competent Use of Internet Education

Objective 3.1: Build competent and responsible users of the internet through early and ongoing education, training, and other resources.

While the internet has the potential to expand opportunities for residents, it can also make them vulnerable to digital scams, fraud, and unsafe interactions. As high-speed broadband access expands to communities that may have limited previous experience in using the internet, South Dakota will provide broadband users with the tool necessary to navigate digital citizenship. Several cities, counties, and educational institutions already provide some form of digital citizenship education. South Dakota will connect residents to such existing resources to equip them to use the internet in a safe and productive manner.

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[8] South Dakota Department of Labor and Regulation (accessed on March 29, 2023), Staff Directory. Accessed at: https://dlr.sd.gov/staff_directory.aspx#:~:text=The%20mission%20of%20the%20Department,safe%20and%20sound%20business%20practices.

2.2.3.2 Objective 3.2 Digital Government

Objective 3.2: Provide access to government services online to improve the quality of life of every citizen and enhance government's efficiency of service delivery.

The COVID-19 pandemic led to several citizen-government interactions moving online. By universalizing broadband access, the State will encourage South Dakotans to access these services using an online portal for a seamless experience without having to travel long distances and expend additional time and money. State Radio, which connects all first responders statewide, is another avenue for increased citizen-government interactions.

Services such as driver license renewals, hunting permits, and others are already available on South Dakota's state, county, and city government portals, but the range of available services can be expanded to serve all sections of society. The experience of South Dakota residents who need to access benefits such as the Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance for Needy Families (TANF) can also be simplified by building intuitive online forms and providing access to crucial information at the click of a button.

2.2.3.3 Objective 3.3 Public Safety

Objective 3.3: Ensure public safety services have sufficient tools, training, and broadband access to effectively coordinate with one another and protect the general public.

First responders of all kinds rely on broadband to direct and inform their efforts. It is essential that the South Dakota Public Safety Broadband Network (SDPSBN) reach first responder agencies across the State. Fundamental public safety services and the effective civil participation they facilitate for South Dakotans rely on dependable and high-speed broadband.

2.2.4 Goal 4 – Longevity: Ensure broadband access continues beyond 2028.

While the analysis supporting this Plan uses a five-year time horizon, South Dakota's efforts during this timeframe will lay the groundwork for success beyond 2028. The ConnectSD program is already aiming to surpass the NTIA 100 Mbps minimum and deliver 250 Mbps to residents wherever possible, as well as reach 500 Mbps speeds by 2027. South Dakota is working to ensure residents can continue to grow in their broadband speed capacity as the number of devices per household increase and higher speeds become necessary.

2.2.4.1 Objective 4.1 Broadband Deployment

Objective 4.1: Create a strategy to establish fiber as the State's preferred type of broadband.

Because fiber infrastructure consistently delivers high-quality broadband service at scale, South Dakota plans to prioritize fiber as the State's preeminent type of broadband. In exceptional cases where laying fiber is cost prohibitive and does not make sense given the terrain of the community, alternatives will be considered. South Dakota is investing for the long-term. Inherent in that commitment is the desire to ensure that high-quality broadband through fiber infrastructure is expanded and made a permanent fixture of South Dakota.

2.2.4.2 Objective 4.2 Ongoing Digital Literacy

Objective 4.2: Create resources to provide continued support to businesses and households to use broadband beyond 2028.

Regardless of someone's baseline digital literacy, South Dakota aims to maintain continued focus and support to ensure every household and business can access high-speed internet. Closing the digital divide beyond 2028 means combining coordinated digital literacy efforts with sustainable deployment. South Dakota plans to highlight existing resources and programs around digital literacy, especially those targeted to covered populations with a lower starting baseline. Where programming gaps or a lack of coordination between digital literacy programs exist, South Dakota can help create or facilitate programming to promote ongoing digital literacy.

3   Current State of Broadband and Digital Inclusion

As of May 2022, South Dakota ranked 22nd in the nation for internet coverage, availability, and speed.[9] Although ongoing efforts exist to direct grant money to broadband infrastructure expansion in South Dakota, a few geographic areas require additional attention in terms of deployment of fiber and digital inclusion. Those areas include communities around the Black Hills, select counties with Tribal Entities including Oglala Lakota, Todd, and Corson, as well as the southeastern counties of Union, Clay, and Yankton.

Section 3	
3.1 Existing Programs	Provides an overview of the current activities, employees, contractors, and funding supporting the broadband program in South Dakota.
3.2 Partnerships	Outlines new or existing partnerships South Dakota will leverage to expand broadband in the State.
3.3 Asset Inventory	Offers an overview of existing assets key to South Dakota's success, as well as an overview of needs and gaps that would bolster connectivity in the State.
3.4 Needs and Gaps Assessment	Presents the gaps between the current state and the needs of deployment and digital equity in South Dakota.

3.1   Existing Programs

A team in the Governor's Office of Economic Development (GOED) manages ConnectSD, the primary program tasked with broadband expansion in South Dakota. The table below provides an overview of ConnectSD.

Table 1: Current Activities that the Broadband Team Conducts

Activity Name	Description	Intended Outcome(s)
ConnectSD[10]	Established in 2019, this program is a public-private partnership to extend high-speed broadband to all South Dakotans. Federal and state funding sources combined with matching industry investment are used to accomplish this goal.	ConnectSD works toward the goal of bringing sustainable, high-speed internet to every location in South Dakota.

Expanding broadband in South Dakota will require a dedicated team to coordinate the efforts within the State. Close collaboration between various agencies and stakeholders will need to take place. The staff dedicated to these efforts will increase with full-time and part-time

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[9] Heidi Kolbeck-Urlacher – Center for Rural Affairs (published in June 2022), South Dakota Broadband Resource Guide. Accessed at: https://www.cfra.org/sites/default/files/publications/sd-broadband-resource-guide-2022-5-web.pdf.
[10] South Dakota Governor's Office of Economic Development (accessed on March 29, 2023), ConnectSD Broadband. Accessed at: https://sdgoed.com/public-records/connectsd/.

positions outlined in Table 2, as well as additional time from invested agencies. While Table 2 captures the primary team working towards these efforts, the following staffing expansions are also worth consideration:

- **South Dakota Department of Labor & Regulation (DLR):** The digital equity efforts and implementation will be spearheaded by DLR. DLR has made digital equity initiatives a tenant of their workforce-oriented aims and hired a Digital Equity Coordinator to assist in this work. This newly developed role is in addition to countless others in the department making digital equity a part of their work.
- **South Dakota Bureau of Information & Telecommunications (BIT):** Close collaboration with BIT has been a fixture of the ConnectSD program since its inception. Moving forward, continued work with members of the BIT team is planned for ad-hoc engagement and other key areas of involvement with ConnectSD.
- **Governor's Office of Economic Development (GOED):** Ancillary staff in addition to those outlined below will be instrumental in the deployment of BEAD funds in the future. This includes accountants and other members of the Finance team, as well as employees in the communications department to ensure messaging and public awareness around these activities remains high.
- **Governor's Office:** Close collaboration with policy advisors and the Governor has been a fixture of the ConnectSD program since its inception. Moving forward, continued work with members of the Governor's team is planned for ad-hoc engagement and other key areas of involvement with ConnectSD.

The following table lists the current employees implementing and administering the BEAD program.

Table 2: Current Full-Time and Part-Time Employees

Full-Time/ Part-time	Position	Description of Role
Full-Time	Broadband Project Manger	The position duties include coordinating with stakeholders, including service providers, and overseeing project activities to assess and evaluate the overall success of the State's ConnectSD-BEAD Program.
Full-Time	Assistant Broadband Project Manager	The Assistant Project Manager supports the Project Manager with planning, outreach, and community and stakeholder engagement activities.
Full-Time	BEAD Coordinator	The BEAD Coordinator's responsibilities include completing and submitting grant reports on behalf of, or in coordination with, the Broadband Project Manager (as allowable and appropriate); archiving grant-related documents and documentation; preparing for, and supporting, any activities related to grant monitoring, audit requests, or compliance requests; and compiling, reconciling, preparing reimbursements of, and managing the submission of subgrantee reports and documents.
Part-Time	Intern	The intern performs various research to create reports and dashboards to keep information organized for accessibility and efficiency as well as reviews and audits new and existing grant awards for accuracy.

South Dakota is utilizing the services of consultants and other contractors to analyze the current state of broadband in the State and identify the needs and gaps that need to be filled. To build out the plan for investing federal and state funds, a thorough stakeholder consultation needs to be done, through which the needs of different communities and providers can be assessed. The table below lists the current and planned contractors implementing and administering the BEAD program.

Table 3: Current and Planned Contractor Support

Current/ Planned	Time	Position	Description of Role
Current	Full-Time	Consulting Team	The firm provides industry expertise, supports stakeholder coordination, and assists with developing a strategic view of the current and future state for South Dakota.

The table below outlines the various funding sources available to South Dakota for broadband deployment and other broadband-related activities.

Table 4: Broadband Funding

Source	Purpose	Total	Expended	Available
South Dakota General Funds	Funded activities and grants through the ConnectSD program	$85,000,000		
CARES Act – Coronavirus Relief Fund	Funded activities through the ConnectSD program	$38,200,000		
American Rescue Plan Act – State and Local Fiscal Recovery Fund	Planned to fund grants through the ConnectSD program	$50,000,000		
USDA ReConnect Loan and Grant Program[11]	South Dakota Network, LLC (dba SDN Communications)	$6,014,940		
	Golden West	$1,731,630		
	Cheyenne River Sioux Tribe Telephone Authority	$16,957,883		
	Valley Telecommunications Cooperative Association, Inc.	$15,173,307		
	Alliance Communications Cooperative, Inc.	$1,588,183		
	Heartland Telecom (Iowa)	$7,210,117		

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[11] USDA (accessed on June 23, 2023), ReConnect Program FY2022 Funding Opportunity Announcement Awardees. Accessed at: https://www.usda.gov/reconnect/round-three-awardees

Rural Development Opportunity Fund (RDOF)	Alliance Communications Cooperative, Inc.	$390,799		
	Interstate Telecommunications Cooperative, Inc.	$1,929,028		
	Midcontinent Communications	$296,393		
	Lumen Technologies, Inc.	$121,060		
	Roberts County Telephone Cooperative Association	$263,796		
	Valley Telecommunications Cooperative Association, Inc	$1,659,116		
	Venture Communications Cooperative, Inc.	$1,007,266		
Tribal Broadband Connectivity Program[12]	Oglala Sioux Tribe	$19,620,766		
	Rosebud Sioux Tribe	$48,352,973		
	Lower Brule Sioux Tribe	$2,675,390		
	Cheyenne River Sioux Tribe Telephone Authority	$2,367,685		
	Sisseton Wahpeton Oyate of the Lake Traverse Reservation	$1,847,628		
	Flandreau Santee Sioux Tribe	$2,477,508		
ACP Outreach Grant	Increasing ACP enrollment in the State. This grant was made to the Northeast SD Community Action Program, a nonprofit.	$200,000[13]		
Civic Nation	Voices for Peace was awarded an ACP outreach grant	$25,000[14]		
Emergency Connectivity Fund Program	Funded internet connectivity programs at schools and libraries to help students, staff and patrons connected through the COVID-19 pandemic. This grant was made directly to institutions that applied.	$10,224,167[15]		
E-Rate	Funded infrastructure and other needs of schools and libraries to access the internet. This grant was made directly to institutions that applied.	$20,839,234[16]		

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[12] NTIA (accessed on June 23, 2023), Tribal Broadband Connectivity Program TBCP Awards. Accessed at: https://broadbandusa.maps.arcgis.com/apps/dashboards/07f987529ae24273aec3320e5033d503

ISPs in the State can also access the FCC's Rural Digital Opportunity Fund (RDOF), a $20.4 billion national program that provides funding directly to ISPs that bid for funds to build broadband infrastructure in eligible areas. Five ISPs have received funding under this program to build fiber networks in the eastern part of the State and in and around Pierre.[17] South Dakota's ISPs have also made substantial investments to build fiber networks in the State using private capital.

3.2 Partnerships

In a state as vast as South Dakota, formal and informal partnerships will prove critical to bringing dependable, high-speed broadband to all businesses, residents, and communities in the State.

Table 5: Partners

Partners	Description of Current or Planned Role in Broadband Deployment and Adoption
South Dakota Telecommunications Association (SDTA)	SDTA provides regulatory and legislative advocacy for a wide range of telecommunications companies in the State, including cooperative, small commercial, municipal, and tribal telecommunications companies. SDTA's inputs while developing the policy framework of deploying new broadband infrastructure will be valuable to the State in understanding the needs and constraints of ISPs. They will also serve as a valuable partner in educating and creating awareness among ISPs of the State's plans to deploy new infrastructure.
Bureau of Information and Telecommunications (BIT)	BIT is a crucial IT partner for all government agencies across the State to create secure computing and communications environments for ensuring optimal service delivery in the State. BIT plays an important role in maintaining public trust by securing the State's data and technology assets through implementing leading tools, policies, and practices.
SDN Communications	SDN is a network of 17 ISPs that serve more than 76% of South Dakota's geography. Formed by independent telephone companies in the State in 1989, it has grown into a large network of member companies that own fiber lines across the State. SDN has been and will continue to be a strong partner of the State in providing broadband to rural communities through middle- and last-mile fiber connectivity.
Internet Service Providers (ISPs)	South Dakota's privately run, cooperative, municipal, and tribal ISPs have been integral to the progress made by the State in expanding its

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[13] Federal Communications Commission (accessed on March 15, 2023), Affordable Connectivity Outreach Grant Program. Accessed at: Affordable Connectivity Outreach Grant Program | Federal Communications Commission (fcc.gov).

[14] Civic Nation (published June 2023), Civic Nation ACP Pilot Report: Lessons for Community-Based Affordable Connectivity Program Outreach. Accessed at: CivicNation_OnlineForAll_PilotReport.pdf

[15] Universal Service Administrative Company (accessed on March 27, 2023), Open Data Tool. Accessed at: https://opendata.usac.org/.

[16] Universal Service Administrative Company (accessed on March 27, 2023), Open Data Tool. Accessed at: https://opendata.usac.org/.

[17] South Dakota Bureau of Information and Telecommunications (accessed on March 29, 2023), SD Broadband. Accessed at: https://sdbit.maps.arcgis.com/apps/webappviewer/index.html?id=ccd16c24bf804c1fa67d50373d100464.

	infrastructure. ISPs have invested private capital into new technologies and will remain essential to future broadband roll-out in the State.
Public Utilities Commission (PUC)	South Dakota's PUC regulates the energy, telecommunications, and grain warehouse companies in the State. It provides information to consumers on utilities outages and provides them with assistance as well.
South Dakota Department of Labor and Regulation (DLR)	Workforce development is a key component of both the Digital Equity Plan and the BEAD Plan. Therefore, the South Dakota Broadband Team intends to collaborate closely with DLR. The integrated approach should help develop continuity between the Digital Equity Plan and the BEAD Five-Year Action Plan.
Department of Transportation (DoT)	Whenever South Dakota's DoT undertakes roadways and highways projects on existing infrastructure, it notifies ISPs that have fiber lines along those project corridors. The close coordination between the DoT and ISPs is crucial for the effective maintenance of broadband infrastructure.

3.3 Asset Inventory

Like other eligible entities, South Dakota has a variety of hard and soft assets that contribute to broadband coverage and use in the State. South Dakota is proud of the low-regulatory economic environment that spurs investment and entrepreneurship. As such, a thriving private sector is essential to understanding the broadband environment in South Dakota.

The following sections outline the inventory of assets according to the themes of deployment, adoption, affordability, access, and digital equity. Some assets may fall in multiple categories but are only represented once in the area where they fit according to suggested considerations from the NTIA.

The remainder of this section provides detail on the following contributors to the current state of broadband and digital inclusion in South Dakota:

- **3.3.1 Broadband Deployment – Assets** – provides a summary of the assets in South Dakota associated with deployment.
- **3.3.2 Broadband Adoption – Assets** – outlines the series of assets associated with broadband adoption in South Dakota.
- **3.3.3 Broadband Affordability – Assets** – covers the programs, conditions, and providers that contribute to the affordability of broadband in South Dakota.
- **3.3.4 Broadband Access – Assets** – presents the assets that bolster access to broadband in South Dakota.
- **3.3.5 Digital Equity – Assets** – provides an overview of the assets that contribute to digital equity in South Dakota.

3.3.1 Broadband Deployment – Assets

Broadband deployment refers to the infrastructure needed to deliver high-speed download and upload services to households and businesses. This section will detail primary deployments assets that underpin broadband in South Dakota.

South Dakota makes an effort to facilitate private-sector ownership of fiber assets. As such, all fiber runs through the private sector, especially the local co-ops, as well as SDN Communications (middle mile owner and consortium of 17 providers covering 75% of South Dakota).[18]

Some current and forthcoming opportunities are available to support further broadband deployment by South Dakota's ISPs. Because South Dakota does not have a statewide dig-once policy, the State encourages localized collaboration between providers and entities with knowledge of upcoming capital projects. DoT requests input and feedback from ISPs during the drafting of its Statewide Transportation Improvement Program (STIP), a three-year overview of listed programs developed through the coordinated efforts of "governments, metropolitan planning organizations, public agencies, transportation providers, citizens, and other interested parties."[19] Further, the South Dakota Five-Year Capital Expenditure Plan provides project overview information that might be pertinent to fiber expansion efforts.

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[18] SDN Communications (accessed on March 29, 2023), The Perfect Connection for your Business. Accessed at: https://sdncommunications.com/services/broadband-internet.
[19] South Dakota Department of Transportation (accessed on March 29, 2023), Statewide Transportation Improvement Program – STIP. Accessed at: https://dot.sd.gov/projects-studies/planning/stip.

Table 6: Deployment Opportunities

Asset Type	Asset
Existing rights of way	DoT maintains a Rights of Way Program responsible for acquiring property necessary "for highway purposes."[20] Rights-of-ways within highways are readily accessible.[21]
Capital project	DoT plans out improvements to preserve, renovate, and enhance South Dakota's transportation system in the Statewide Transportation Improvement Program (STIP). The Department notifies the providers in affected areas for opportunities to collaborate.[22]
Capital project	The South Dakota Five-Year Capital Expenditure Plan outlines project overview information and expenditure plan summary, as well as itemized lists of projects for the following five years.[23] While a formalized dig-once policy does not exist, collaboration naturally occurs organically through the local relationships within communities.
Capital project	ConnectSD grants provide funding for fiber expansion efforts that are complete or in progress in previously underserved parts of the State. Since 2019, under the ConnectSD program, utilizing funding from various State and Federal sources, South Dakota has connected thousands of households, businesses, and farms with fiber. A summary of the broadband assets created or being created under ConnectSD is below: • 3,769 miles of fiber are laid or are currently being laid connecting 31,000 locations covering 2,632 square miles of land area through 103 projects. • The total grant award for ConnectSD projects is $270 million, which was matched by ISPs with $122 million in private capital. • The State's contribution to the fiber grants was $58 million, while the Federal funds contribution was $89 million including funds from the CARES Act and ARPA/SLFRF.

South Dakota has an available workforce for deploying broadband. According to DLR, as of 2020, over 13,000 South Dakotans were employed in occupations that are prevalent in the telecommunications industry. This workforce is projected to grow over the next decade and can support increased broadband deployment in the State.

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[20] South Dakota Department of Transportation (accessed on March 29, 2023), Right of Way/Relocation Assistance. Accessed at: https://dot.sd.gov/doing-business/engineering/design-services/relocation-assistance.
[21] South Dakota Governor's Office of Economic Development (published in May 2019), Broadband in South Dakota – May 2019. Accessed at: https://sdgoed.com/wp-content/uploads/2020/08/State-Broadband-Plan.pdf.
[22] South Dakota Department of Transportation (accessed on March 29, 2023), Statewide Transportation Improvement Program – STIP. Accessed at: https://dot.sd.gov/projects-studies/planning/stip.
[23] South Dakota Bureau of Finance and Management (published in January 2023), South Dakota Five-Year Capital Expenditure Plan. Accessed at: https://bfm.sd.gov/ltfp/cp_2023.pdf#view=fit.

Table 7: Available Workforce for Broadband Deployment as of 2020[24]

Asset Type	Asset
Computer Network Support Specialists	920 employees
Electronics Engineers, Except Computer	132 employees
Sales Representatives of Services, Except Advertising, Insurance, Financial	636 employees
Customer Service Representatives	8,715 employees
Operating Engineers and Other Construction Equipment Operators	2,123 employees
Telecommunications Equipment Installers and Repairers, Except Line	411 employees
Telecommunications Line Installers and Repairers	368 employees

South Dakota already has a dedicated broadband governance structure to facilitate integration of broadband efforts in the State. This is done out of ConnectSD supported by GOED. The Broadband Team out of GOED have operated as the primary facilitators of this work since 2019. Their coordination with DLR will be instrumental to building out digital equity programs in the State.

Table 8: Governance for Broadband Deployment

Asset Type	Asset
Governance Entity	ConnectSD
Governance Entity	Governor's Office of Economic Development
Governance Entity	Governor's Office

3.3.2 Broadband Adoption – Assets

Broadband adoption is the process by which an individual obtains daily access to the internet, provided that:

(1) The internet is accessible at a speed, quality, and capacity necessary for the individual to accomplish common tasks and qualifies as an advanced telecommunications capability;[25]

(2) The individual has the digital skills that are necessary for participation online; and

(3) The individual accesses the internet on a personal device and secure and convenient network.[26]

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[24] Labor Market Information Center of the South Dakota Department of Labor and Regulation (prepared in March 2023), South Dakota Employment and Demand Projections 2020 to 2030 and 2021 Wage Estimates for Occupations Prevalent in the Telecommunications Industry.

[25] "Advanced telecommunications capability" is high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology, without regard to any transmission media or technology (47 U.S.C. §1302).

[26] 47 U.S.C. §1721(1).

Due to the coordination between providers and early efforts from the State to expand broadband to K-12 schools, 85.2% of South Dakota households have a broadband internet subscription.[27] Below the surface of this baseline, some counties have subscription percentages that are even below 50%.

Multiple organizations and advocacy groups provide digital literacy and awareness programming to increase adoption in South Dakota. South Dakota is proud of the advocacy and community involvement its nonprofits and private sector participants regularly play in shaping broadband adoption. Digital literacy is no exception.

Table 9: Digital Literacy and Awareness Programs

Asset Type	Asset
Digital literacy program	Adult Education and Literacy Program (DLR)[28]
Digital literacy program	Computer and digital skills-related programs approved by DLR for funding under Workforce Innovation and Opportunity Act (WIOA)[29]
Digital literacy program	Digital literacy classes offered by Grow South Dakota[30]
Digital literacy program	Regular Assistive Technology Clinic sessions organized by the South Dakota Rehabilitation Center for the Blind for the visually impaired to train them to use technological devices to access the internet[31]
Digital Navigator program	GED Programs such as those by AmeriCorps at Sitting Bull College (contains a Digital Navigator component)[32]
Digital Navigator program	Digital Navigator classes offered by Grow South Dakota[33]
Outreach program	South Dakota Voices for Peace (received a pilot ACP outreach grant in January 2023)[34]
Outreach program	Northeast South Dakota Community Action Program (received a $200,000 ACP outreach grant in March 2023)[35]
ISP adoption promotion program	Affordable Connectivity Program (87 providers[36])

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[27] United States Census Bureau (accessed on March 29, 2023), QuickFacts – South Dakota. Accessed at: https://www.census.gov/quickfacts/SD.

[28] South Dakota Department of Labor and Regulation (accessed on March 29, 2023), Workforce Services for Individuals. Accessed at: https://dlr.sd.gov/workforce_services/individuals/adult_education.aspx.

[29] South Dakota Department of Labor & Regulation (accessed on March 29, 2023), Workforce Innovation and Opportunity Act. Accessed at: dlr.sd.gov/workforce_services/wioa/default.aspx.

[30] Grow South Dakota (published on April 14, 2023), GROW South Dakota launches new Digital Literacy program. Accessed at: Grow South Dakota Launches New Digital Literacy Program (growsd.org)

[31] South Dakota Rehabilitation Center for the Blind (accessed March 15, 2023), Department of Human Services. Accessed at: https://dhs.sd.gov/servicetotheblind/sdrc.aspx.

[32] DigitalUS (accessed on March 29, 2023), Program Profiles – Sitting Bull College. Accessed at: https://digitalus.org/digital-navigator-playbook/program-profiles/.

[33] GROW South Dakota (published on December 21, 2022), Successful Digital Navigator Class. Available at: https://www.growsd.org/news-&-events/p/item/47780/successful-digital-navigator-class.

[34] Dakota News Now (published on January 10, 2023), SD Voices for Peace awarded grant for Federal Affordable Connectivity Program. Accessed at: https://www.dakotanewsnow.com/2023/01/10/sd-voices-peace-awarded-grant-federal-affordable-connectivity-program/.

[35] Federal Communications Commission (accessed on March 15, 2023), Affordable Connectivity Outreach Grant Program. Accessed at: https://www.fcc.gov/acp-grants.

[36] Federal Communications Commission (published on February 6, 2023), Affordable Connectivity Program Providers. Accessed at: https://www.fcc.gov/affordable-connectivity-program-providers.

South Dakota's welfare services provide citizens with the equipment they need to access the internet. South Dakota's Department of Human Services (DHS) Division of Service to the Blind and Visually Impaired helps persons with visual impairments purchase devices they need to access the internet, along with providing them the training to use those devices. Especially when linked to employment, the devices are provided without financial need restrictions. The DHS Division of Rehabilitation Services (DRS) also has a program for individuals to get devices and to help subsidize the cost of devices. South Dakota's Department of Social Services (DSS) Division of Economic Assistance provides smartphones or tablet computers to persons who need to access the internet for the work component of their Temporary Assistance for Needy Families (TANF) or Supplemental Nutrition Assistance Program (SNAP) benefits.

Table 10: Programs Supporting Broadband Access

Asset Type	Asset
Device Assistance	DHS Division of Service to the Blind and Visually Impaired program to provide free devices for persons with visual impairments for employment
Device Assistance	DHS Division of Rehabilitation Services program to provide subsidies for purchase of equipment for employment-related activities
Device Assistance	DSS Division of Economic Assistance program to provide smartphones or tablet computers for purchase or for loan for the work component of TANF or SNAP
Device Assistance	South Dakota colleges and universities run device programs to provide access to laptops and/or tablets for enrolled students. Three of the entities for which we have information noted that they offer devices to purchase or lease at discounted rates, with financing options or free of cost. Two entities shared that they utilize one-to-one programs, and any support is included in financial aid packages. An additional two entities shared that they have short term lease programs for students experiencing an emergency[37]

3.3.3 Broadband Affordability – Assets

The Bipartisan Infrastructure Law's provisions related to the BEAD Program require that all consumers have access to affordable high-speed internet. Congress determined that "[t]he persistent 'digital divide' in the United States is a barrier to" the nation's "economic competitiveness [and the] equitable distribution of essential public services, including health care and education."[38]

South Dakota knows providers are the critical fulcrum point to offering affordable broadband to residents, businesses, farmers, ranchers, and community anchor institutions in the State.

The Affordable Connectivity Program (ACP) is the primary program for subsidizing broadband subscriptions across the State.

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[37] Information provided through stakeholder conversations with colleges and representatives of higher education which took place April-May 2023.

[38] Congressional Research Service (published on November 16, 2021), The Infrastructure Investment and Jobs Act (P.L. 117-58): Summary of the Broadband Provisions in Division F. Accessed at: https://crsreports.congress.gov/product/pdf/R/R46967.

Table 11: Programs Supporting Broadband Affordability

Asset Type	Asset
Subsidy program	Affordable Connectivity Program (FCC) – according to the ACP Dashboard published by the non-profit Education Superhighway, South Dakota has 129,617 ACP eligible households. The rate of enrollment amount eligible households is 11% (against the national average of 29%) with 14,810 enrolled and 114,807 unenrolled households. 87 ISPs across South Dakota participate in the ACP. Of the 64 ISPs currently providing or building new fiber lines, 33 participate in the ACP program.
Subsidy program	Lifeline is an FCC program that "helps make communications services more affordable for low-income consumers. Lifeline provides subscribers a discount on qualifying monthly telephone service, broadband Internet service, or bundled voice-broadband packages purchased from participating wireline or wireless providers." Participants can receive a monthly discount up to $9.25 on service for eligible subscribers and up to $34.25 a month for subscribers on tribal lands.[39]

In South Dakota, the localized nature of many providers as cooperatives plays a role in prices for high-speed internet services. Fiber-based broadband in South Dakota is served primarily by three types of private providers as well as municipal providers. Even as 87 providers in South Dakota participate in ACP, more than 60 ISPs offer high speed broadband through fiber and other technologies.[40] Among these providers, 17 are SDTA telecom cooperative members, the majority are private companies, and there are also tribal-owned and municipal companies. Below is an overview of the provider types that offer fiber in South Dakota.

Table 12: South Dakota ISPs that Provide or Will Provide Fiber Technology

Asset Type	Asset
Private provider	17 Telecom cooperative ISPs
Private provider	Private ISPs
Private provider	Tribal-owned ISP
Municipal provider	Municipal ISPs

3.3.4 Broadband Access – Assets

Broadband access refers to the availability of high-speed, reliable internet and related equipment, including having internet connections and technology at home or in community institutions (e.g., free public Wi-Fi, public computer centers).[41]

Public libraries in South Dakota provide citizens access to public Wi-Fi and loaner hotspot devices, aside from computers on the premises. Public libraries are excellent resources for South Dakota citizens to access internet. While all libraries allow individuals to use the internet on

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[39] Federal Communications Commission (accessed March 31, 2023), Lifeline Program for Low-Income Consumers. Accessed at: Lifeline Program for Low-Income Consumers | Federal Communications Commission (fcc.gov)

[40] Federal Communications Commission (accessed June 26, 2023), Affordable Connectivity Program Providers. Accessed at: Affordable Connectivity Program Providers | Federal Communications Commission (fcc.gov)

[41] BroadbandUSA, National Telecommunications and Information Administration (accessed on March 30, 2023), What does Digital Inclusion mean? Accessed at: https://broadbandusa.ntia.doc.gov/about-us/frequently-asked-questions/what-does-digital-inclusion-mean.

computers set up at library premises, some public libraries in the State provide loaner portable hotspot devices as well. Libraries and schools in South Dakota have received $10.22 million under the Emergency Connectivity Fund Program and $20.84 million under the E-Rate program to acquire the infrastructure and equipment needed to access high-speed internet (see Table 4: Broadband Funding).

Table 13: Public Device Access

Asset Type	Asset
Public computing lab	104 SD State Libraries offer computing labs, which reported 312,254 sessions in FY 2022[42]
Public computing lab	City of Sioux Falls has 5 Community Centers with public computer labs[43]
Public computing lab	Mobile Computer Lab – Nolan Family Library and Media Center, Red Cloud High School, Pine Ridge Indian Reservation [44]*
Public device program	22 South Dakota State Libraries offer computing device loaner programs. Mobile hotspot loaner programs are also offered by 9 South Dakota State Libraries[45]

*Please note, while schools may have computer labs, such labs are not typically open for public. There are exceptions, such as Red Cloud High School, where the community does not have a public library.

3.3.5 Digital Equity – Assets

Digital equity refers to the condition in which individuals and communities have the information technology capacity that is needed for full participation in the society and economy of the United States.

South Dakota has several programs that promote digital equity for the workforce by developing digital skills necessary for employment. DLR has a range of programming for South Dakota citizens under the Workforce Innovation and Opportunity Act (WIOA).

Table 14: Training and Assistance Supporting Digital Equity

Asset Type	Asset
Training program	Computer and digital skills-related programs approved by DLR for funding under the WIOA
Training program	SD UpSkill Program for certification in fields including information technology

Many community organizations in the State support digital equity initiatives. The existing network of community organizations plays a large role in the digital equity efforts in South Dakota. For example, Rural LISC recently worked with Grow South Dakota to launch a program

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[42] South Dakota State Library (downloaded June 15, 2023), South Dakota public library statistics as reported via the Public Libraries Survey FY2022 (click on "SD Public Libraries – Service Statistics 2022"). Accessed at: https://libguides.library.sd.gov/services/pls

[43] City of Sioux Falls (accessed on Jun 23, 2023), Computer Lab (Select the Community Center Name >Computer Lab). Accessed at: https://www.siouxfalls.org/parks/community-centers

[44] Red Cloud Indian School (accessed on February 17, 2023), Library. Accessed at: https://www.redcloudschool.org/page.aspx?pid=547

[45] South Dakota State Library (received June 6, 2023), Digital Literacy and Cybersecurity data. *The South Dakota State Library collected information on the programs offered by the libraries. 89 libraries responded, so these figures may be an underestimate of the programs offered throughout the State.

funded by a portion of the $600,000 grant from the Wells Fargo Foundation to improve digital support in rural and native communities.[46]

Table 15: Organizations and Task Forces Supporting Digital Equity

Asset Type	Asset
Community organization	Connect Sioux Falls, formerly Inclusive Digital Equity Alliance (IDEA)
Community organization	Grow South Dakota (Received funding through Rural LISC)

3.4 Needs and Gaps Assessment

By contrasting South Dakota's current assets to the vision of full coverage, the State has identified existing broadband needs and gaps. The following section outlines the identified needs and gaps in South Dakota as they relate to deployment, adoption, affordability, access, and digital equity.

The numerical information compiled in Section 3.4 is comprised of data gathered at the outset of creating this Five Year Action Plan. As ConnectSD and BEAD funding moves forward, South Dakota will continue to improve the tools and datasets available for determining unserved and underserved locations. Appendix 1 describes the methodology for compiling initial data for this report. Appendix 2 outlines the more detailed methodology that will be utilized going forward in order to accurately depict locations that are underserved or unserved.

3.4.1 Broadband Deployment – Needs & Gaps

Broadband deployment can be measured by service coverage but is dependent on numerous factors, including policy, regulations, and implementation inputs such as workforce availability. Through the analysis outlined below, we understand that several regions across South Dakota do not have broadband coverage at sufficient speeds. We have also identified additional gaps that impact increasing coverage.

To analyze the gaps in deployment, South Dakota viewed the broadband speeds available for the residents and businesses of the State. The following three categories were used to identify the unserved and unserved areas.

Descriptor	Speed Thresholds
✖ Unserved	Less than 25/3 Mbps
⊖ Underserved	Between or equal to 25/3 Mbps and 100/20 Mbps
⊕ Served	Greater than 100/20 Mbps

Using publicly available FCC data through the Broadband Data Collection (BDC) System as well as stakeholder interviews, South Dakota can identify the unserved and underserved parts of the State. After conducting a thorough review of all the locations that access the internet in the

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[46] 3BL Media (published on July 29, 2022), Rural LISC Launches Rural Connect With $600K Grant From Wells Fargo Foundation for South Dakota and Beyond. Accessed at: https://www.3blmedia.com/news/rural-lisc-launches-rural-connect-600k-grant-wells-fargo-foundation-south-dakota-and-beyond.

State, it was found that 89% of all locations have at least one provider serving speeds over 100 Mpbs download and 20 Mbps upload, meeting the NTIA's classification of served. Currently, an estimated 23,810 (6%) of the locations remain unserved (under 25/3 Mbps download/upload) and 17,852 (5%) are underserved (under 100/20 Mbps download/upload).

The table below presents a distribution of served, unserved, and underserved locations across all counties of South Dakota and ranks them by presence of underserved and unserved locations. Three regions in the State still have unserved and underserved locations in larger numbers than others, encompassed in the top 10 counties in the table below. Of these 10 counties with the highest number of unserved and underserved locations, four are from the Black Hills region (Pennington, Lawrence, Meade, and Custer), two are from the southeastern part of the State (Yankton, Clay, and Union), and four are from counties comprised of tribal lands (Todd, Oglala Lakota, and Corson).

Table 16: South Dakota Served, Underserved, and Unserved Locations, by county (FCC and ConnectSD data)[47]

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[47] *Notes regarding the location analysis presented in Table 16:*

1. *Data Source: FCC Broadband Data Collection (BDC) System*
2. *Data Source: ConnectSD portfolio data; ReConnect and Tribal Broadband Connectivity Fund project data not included in this analysis.*
3. *Assumption: Total locations for a given county are captured by the FCC Broadband Data Collection (BDC) System.*
4. *Assumption: For ConnectSD projects covering more than one county, the number of locations that fall in a county is proportional to the percentage of unserved and underserved locations from the FCC Broadband Data Collection (BDC) System.*
5. *Assumption: Project completion based on estimated completion date in ConnectSD portfolio data.*
6. *Assumption: The Total Estimated Unserved and Underserved is the number of current total Unserved and Underserved locations from FCC Broadband Data Collection (BDC) System minus the in progress locations through ConnectSD for the county.*

Note: Due to the assumptions regarding the breakdown of locations between counties for each project, three counties in the table show total estimated unserved and underserved to be below zero. These are considered fully served counties.

County	Unserved Locations	Underserved Locations	Served Locations	Estimated ConnectSD Locations In Progress	Total Estimated Unserved and Underserved	Rank
Pennington	3,115	2,781	34,939	1,601	4,295	1
Lawrence	2,029	1,422	9,736	471	2,980	2
Meade	1,804	1,132	8,794	0	2,936	3
Custer	1,384	814	3,375	209	1,989	4
Todd	889	785	565	0	1,674	5
Oglala Lakota	928	330	1,526	0	1,258	6
Fall River	946	273	3,573	0	1,219	7
Brown	87	2,355	13,896	1,459	983	8
Yankton	759	888	8,092	706	941	9
Clay	577	401	4,147	42	936	10
Campbell	635	189	604	0	824	11
Marshall	246	513	2,482	0	759	12
Minnehaha	332	627	64,259	212	747	13
Charles Mix	269	436	4,364	0	705	14
Butte	614	177	4,098	161	630	15
Lincoln	689	1,122	20,801	1,224	587	16
Day	199	374	3,996	72	501	17
Edmunds	212	287	2,360	0	499	18
Mellette	376	123	510	1	498	19
Jackson	311	169	1,148	0	480	20
Codington	403	74	13,383	0	477	21
Bon Homme	58	383	3,319	0	441	22
Tripp	317	122	3,156	1	438	23
Dewey	421	17	2,164	1	437	24
Corson	405	2	1,478	0	407	25
Union	334	182	6,929	121	395	26
Walworth	261	76	3,619	0	337	27
Spink	35	486	3,509	204	317	28
Hutchinson	292	8	4,155	0	300	29
Stanley	280	140	1,437	128	292	30
Miner	255	0	1,667	0	255	31
Jones	277	89	506	112	254	32
Bennett	156	58	1,157	0	214	33
Grant	188	9	3,876	0	197	34
Brookings	283	74	11,845	173	184	35
Sanborn	184	0	1,553	0	184	36
Kingsbury	274	52	3,374	158	168	37
Haakon	160	0	1,475	0	160	38
Douglas	135	8	1,794	0	143	39

Deuel	115	0	2,721	0	115	40
Roberts	288	13	5,360	189	112	41
Clark	74	29	2,240	0	103	42
Gregory	97	4	3,036	0	101	43
Hanson	100	0	1,581	0	100	44
Brule	193	11	2,595	109	95	45
Ziebach	89	0	1,188	0	89	46
Faulk	11	67	1,647	0	78	47
Aurora	152	5	1,747	84	73	48
Perkins	70	2	3,016	0	72	49
Harding	70	0	1,061	0	70	50
Hughes	40	24	7,392	0	64	51
Davison	62	0	8,496	0	62	52
Jerauld	46	0	1,430	0	46	53
Lyman	83	0	2,137	40	43	54
Buffalo	71	0	514	38	33	55
Hamlin	21	0	3,600	0	21	56
McPherson	2	22	3,106	4	20	57
Hand	13	6	2,850	0	19	58
Lake	258	153	5,729	408	3	59
Moody	3	0	3,200	1	2	60
Hyde	0	0	1,042	0	0	61
Potter	0	0	3,216	0	0	61
Sully	0	0	2,226	0	0	61
Turner	112	396	4,448	511	-3	64
McCook	637	132	1,109	899	-130	65
Beadle	84	10	8,914	371	-277	66
TOTAL	**23,810**	**17,852**	**349,262**	**9,710**	**31,952**	

Local permitting and easements should be accounted for when deployment is expanded into unserved and underserved areas. Through qualitative information gained in interviews with public and private sector stakeholders, state level regulatory barriers were not highlighted as a source for potential delays. However, permitting and easements were mentioned as a possible area for slowed deployment. South Dakota respects the localized regulations and plans to engage on an as-needed basis to support and expedite the expansion efforts.

Additionally, South Dakota faces a constricted construction period each year. Like every part of the United States, weather often dictates when construction work can be completed. For a state as vast as South Dakota, this translates to long, sometimes harsh winters, leaving roughly 4 months of active construction season. It is a reality South Dakota is prepared to face head-on but nonetheless contributes to the turnaround time available for South Dakota to deploy major infrastructure improvements.

In terms of workforce, South Dakota faces a severe worker shortage following the pandemic according to an index published by the U.S. Chamber of Commerce.[48] However, many providers and South Dakota public agencies have not yet experienced any shortage in construction labor.

3.4.2 Broadband Adoption – Needs & Gaps

The process of an individual obtaining daily access to internet is impacted by both availability of internet services and the reliance on internet services to participate in societal practices, such as telemedicine or online learning. We have measured adoption by assessing the percentage of individuals with broadband subscriptions. However, we have also identified gaps in services that would help an individual utilize the internet and related online programming.

A few counties have a low percentage of broadband subscription rates. The table below presents the broadband subscription rates by county according to the American Community Survey (ACS). Broadband subscription rates act as a strong proxy for adoption within a given geographic area. As an important note, respondents to ACS respond yes if "any member of the household accessed the Internet by paying a cell phone company or Internet service provider."[49]

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[48] U.S. Chamber of Commerce (accessed on March 29, 2023), Understanding America's Labor Shortage: The Most Impacted States: The Worker Shortage Across America (filtered for South Dakota). Accessed at: https://www.uschamber.com/workforce/the-states-suffering-most-from-the-labor-shortage?state=sd.
[49] US Census American Community Survey (published in 2021), S2801 Types of Computers and Internet Subscriptions 1-Year Estimates. Accessed at: https://www.census.gov/quickfacts/fact/note/US/INT100221.

Table 17: Broadband subscription rates by county[50]

County	Percent of Households with Broadband Subscription	Rank	County	Percent of Households with Broadband Subscription	Rank	County	Percent of Households with Broadband Subscription	Rank
Lincoln	95%	1	Perkins	83%	23	Deuel	78%	44
Clay	90%	2	Brown	83%	24	Sully	78%	46
Lake	90%	3	Davison	83%	25	Roberts	78%	47
Minnehaha	89%	4	Kingsbury	83%	25	Bon Homme	77%	48
Hughes	89%	5	Moody	83%	25	Lyman	77%	49
Brookings	88%	6	Grant	83%	28	Day	76%	50
Hanson	88%	6	Hand	83%	29	Miner	76%	51
Pennington	87%	8	Tripp	82%	30	Walworth	75%	52
Spink	87%	9	Clark	81%	31	Charles Mix	74%	53
Harding	87%	10	Hamlin	81%	32	Aurora	74%	54
Meade	86%	11	Stanley	81%	33	Corson	72%	55
Lawrence	86%	12	Fall River	81%	34	Campbell	71%	56
Butte	85%	13	Turner	81%	34	Ziebach	68%	57
Union	85%	14	Jerauld	81%	36	Bennett	68%	58
Hyde	85%	15	Douglas	80%	37	Dewey	66%	59
Faulk	85%	16	Beadle	80%	38	McCook	64%	60
Marshall	85%	16	McPherson	79%	39	Buffalo	62%	61
Yankton	84%	18	Hutchinson	78%	40	Haakon	61%	62
Codington	84%	19	Sanborn	78%	40	Oglala Lakota	57%	63
Potter	84%	19	Gregory	78%	42	Jackson	55%	64
Custer	83%	21	Jones	78%	42	Mellette	49%	65
Edmunds	83%	22	Brule	78%	44	Todd	47%	66

3.4.3 Broadband Affordability – Needs & Gaps

We have identified the following needs and gaps related to broadband affordability in South Dakota. This assessment focuses on affordability issues in certain locations and for certain populations based on information gathered through the stakeholder engagement process.

Relative to the national average rate of ACP enrollment of 30%, South Dakota has a low level of ACP participation at 12%. According to the ACP Dashboard published by the non-profit Education Superhighway, South Dakota has 129,617 ACP eligible households. The rate of

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[50] US Census American Community Survey (published in 2021), S2801 Types of Computers and Internet Subscriptions 1-Year Estimates. Accessed at:
https://data.census.gov/table?t=Computer+and+Internet+Use&g=040XX00US46&tid=ACSST1Y2021.S2801

enrollment among eligible households is 12% (against the national average of 30%) with 14,810 enrolled and 114,807 unenrolled households. Eighty-seven (87) ISPs across South Dakota participate in the ACP. Of the 64 ISPs currently providing or building new fiber lines, 33 participate in the ACP program.[51]

The structure of the providers in South Dakota contributes to the price ISPs can charge South Dakotan residents and businesses for high-speed internet. South Dakota's large urban areas, including the cities of Sioux Falls, Rapid City, and Aberdeen, have multiple ISPs providing fiber-to-the-premises. In rural parts of the State, one fiber-to-the-premises provider serves each area, if at all; otherwise, they are serviced by one or more ISPs providing DSL, cable, or fixed wireless, or satellite connectivity if none of those are available.

According to the South Dakota Bureau of Information and Telecommunications (BIT) GIS mapping of provider coverage, 64 ISPs are currently providing or, in the future, will provide fiber-to-the-premises. For the ISPs with price points listed on their websites, the average price of a 100 Mbps connection was ~$70, which is higher than the national average of ~$65.[52]

3.4.4 Broadband Access – Needs & Gaps

This section addresses the needs and gaps related to the various ways people can publicly access the internet, whether through a computer or other device connected to a public network or a mobile device connected to a cellular network.

No central inventory or coordinated network of Public Wi-Fi and public access points exists at a State level. While public libraries across most of the State are connected to high-speed internet, offer public Wi-Fi, and have public-use computers, a need exists to build a centralized resource for people to search for local options for such public resources. This resource will help connect persons in need of public broadband resources to the existing locations that offer them.

Based on the 2021 American Community Survey, while 93.4% of all South Dakota citizens have access to at least one computing device like a desktop or laptop, smartphone, or tablet, almost 10% of citizens exclusively own just a smartphone. Additionally, as many as 22% of South Dakotans do not own or use a desktop or laptop computer.

Table 18: Device Access in South Dakota - Summary[53]

Device	Households	% of Total Households
Total households	356,887	100%
No computer	23,506	6.6%
Has one or more types of computing devices	333,381	93.4%

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[51] Federal Communications Commission (published on February 6, 2023), Affordable Connectivity Program Providers. Accessed at: https://www.fcc.gov/affordable-connectivity-program-providers.
[52] 2022 Broadband Pricing Index (March 2022), USTelecom. Accessed at: https://ustelecom.org/wp-content/uploads/2022/06/USTelecom-Broadband-Pricing-Report2022.pdf.
[53] US Census American Community Survey (published in 2021), S2801 Types of Computers and Internet Subscriptions 1-Year Estimates. Accessed at:
https://data.census.gov/table?t=Computer+and+Internet+Use&g=040XX00US46&tid=ACSST1Y2021.S2801.

Table 19: Device Access in South Dakota – Detailed Attribution[54]

Device	Households	% of Total Households
Has one or more types of computing devices:	333,381	93.4%
Desktop or laptop	278,186	77.9%
Desktop or laptop with no other type of computing device	13,094	3.7%
Smartphone	311,210	87.2%
Smartphone with no other type of computing device	33,930	9.5%
Tablet or other portable wireless computer	216,310	60.6%
Tablet or other portable wireless computer with no other type of computing device	3,442	1.0%
Other computer	6,147	1.7%
Other computer with no other type of computing device	40	0.0%

Analysis of the above data by county shows that five counties have a particularly large number of households without a computer, smartphone, or tablet with more than 25% not having access:[55]

- Oglala Lakota County (39.1%)
- Todd County (37.6%)
- Mellette County (37.6%)
- Corson County (29.5%)
- Dewey County (28.9%)

3.4.5 Digital Equity – Needs & Gaps

South Dakota's Digital Equity Plan will provide a more in-depth discussion of the State's digital equity needs and gaps. The Broadband Team in GOED will work in close tandem with DLR, which will provide an important voice for the Digital Equity Plan, to address the needs and gaps identified in it.

These needs and gaps may include the need for additional funding for programming identified as digital equity assets in Section 3.3.5 or for new programming in the State. They may also include an identification of communities that are in need of additional or new digital equity programming.

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[54] US Census American Community Survey (published in 2021), S2801 Types of Computers and Internet Subscriptions 1-Year Estimates. Accessed at:
https://data.census.gov/table?t=Computer+and+Internet+Use&g=040XX00US46&tid=ACSST1Y2021.S2801.
[55] US Census American Community Survey (published in 2021), S2801 Types of Computers and Internet Subscriptions 1-Year Estimates. Accessed at:
https://data.census.gov/table?t=Computer+and+Internet+Use&g=040XX00US46&tid=ACSST1Y2021.S2801.

4 Obstacles or Barriers

As South Dakota outlines the required implementation to achieve universal broadband service, a realistic assessment of potential obstacles is key. This section outlines the **types of potential barriers** as well as approximates their **expected effect** on South Dakota's ability to delivery universal, high-speed internet to the State.

Three broad areas for consideration exist, along with several topics of potential obstacles or barriers for consideration.

1. **Construction and Labor** – market, labor, or other conditions that act as barriers to on-time or at-budget completion of infrastructure expansion.

2. **Regulatory** – legislative, regulatory, or permitting barriers that prevent or slow down delivery of high-speed broadband to communities in need.

3. **Inclusion and Adoption** – barriers to reaching covered populations and coordinating practices in adoption and digital literacy.

Considering the effects of these obstacles or barriers on the delivery of broadband access to South Dakotans is important. Four broad types of effects exist:

1. **Cost** – the ability to complete broadband expansion efforts at budget or in a cost-effective manner. Obstacles would increase cost.

2. **Time** – the ability to complete construction work or initiatives on schedule. Obstacles would extend delivery time.

3. **Quality** – the ability to deliver infrastructure and services to expand broadband at a high standard. Obstacles would reduce the quality or make high-quality delivery of an initiative more difficult.

4. **Inclusivity** – the ability to provide dependable, high-speed broadband to the communities and populations unserved and/or underserved. Obstacles would decrease the likelihood that efforts are affecting the targeted populations or groups on the wrong side of the digital divide.

Table 20: Anticipated Barriers in Implementing the BEAD Plan

Category	Obstacle or Barrier	Effect Explanation	Cost	Time	Quality	Inclusivity
Construction and Labor	Building the talent pool	Without active investment, skilled labor to complete the jobs will be in short supply.	X		X	
Construction and Labor	Supply-chain shortages	Concerns arise around feasibility of project completion within the required timeframe.	X	X		
Regulatory	Local Permitting	Permitting could cause a delay in the overall timeline of the projects.		X		
Regulatory	Federal Permitting	Permitting could cause a delay in the overall timeline of the projects.		X		
Inclusion and Adoption	ACP Adoption	A low rate of ACP adoption exists, which results in South Dakotans continuing to forego internet services due to cost.				X

Barrier Type #1: Construction & Labor

A number of barriers related to construction and labor of deployment expansion in South Dakota exist. Industry participation has not been a historic problem in South Dakota, as evidenced by active participation in the ConnectSD program since 2019. On top of those efforts, organic expansion of fiber capability in the State is already ongoing without public intervention or incentives. One constraint is the seasonality of construction in the State. With an active construction season that lasts only four months, large infrastructure projects are often scheduled for the same time periods. South Dakota successfully completes capital projects in this environment, but it is a barrier worth consideration.

The U.S. Chamber of Commerce declared an overall workforce shortage in South Dakota. However, DLR projects the seven employment areas (as classified under the Standard Occupational Classification System) related to the telecommunications industry to expand between 2020 to 2030. Specifically for telecommunications equipment installers and repairers (excluding lines), employment is expected to increase by 16.3%. While growth within the field is projected, local coordination discussions with ISPs suggest that quality of the workers remains a concern, particularly as the demand for services will occur simultaneously. To overcome this challenge, one ISP that covers a substantial geographic region of the State actively works with schools to recruit and build talent for the telecommunications industry.

While no formalized Buy America statewide policy exists in South Dakota, it is common practice to source from manufacturers in the following locations in this order: local, statewide, regional, national, and finally international. With so many other eligible entities targeting simultaneous deployments of fiber infrastructure, the supply of materials may not be able to meet the demand. Even before the implementation of BEAD funding, one ISP executive mentioned waiting over a year to obtain materials needed to carry out a fiber project.

For one of the three target regions for broadband expansion – the Black Hills – topography is a major contributor to the delay and the cost of universal coverage in the area.[56] To bore in this area requires far more tools and power than other parts of the State.

Barrier Type #2: Legislative & Regulatory

At a state level, few regulatory or policy barriers to expanding fiber exist; however, permitting is a consistent claim for roadblocks that might potentially slow down the deployment efforts. South Dakota offers a low regulatory business environment that encourages private sector growth. Reflective of this, permitting among key state departments like DoT offer a turnaround of roughly 2 weeks.

For municipal or local permitting and easement policy though, uncertainty remains as to the complexity and the number of permitting requirements on the horizon. GOED is prepared to engage localities to help communities understand the impact and implications of this work. For municipal or local permitting and easement policy though, uncertainty remains as to the complexity and the number of permitting requirements on the horizon. GOED is prepared to engage localities to help communities understand the impact and implications of this work.

Federal permitting, especially in the Black Hills region of South Dakota, is also a barrier worth consideration. Since the Department of the Interior (DOI), USDA, and the Department of Defense (DOD) manages or owns 95% of federal land in the county, many Eligible Entities will face coordination challenges when it comes to permitting for expanding broadband deployment. GOED is ready to engage the relevant federal contacts to mitigate permitting on federal lands as a barrier to timely expansion of future-proof, high-speed internet infrastructure.

Barrier Type #3: Inclusion & Adoption

While a network of programs and organizations promotes digital literacy, a low ACP participation rate relative to the national average of qualified participants exists. Whether awareness or ISP participation lies at the heart of the low ACP participation in South Dakota, a major obstacle barrier toward improving the affordability of broadband subscriptions is the low enrollment among South Dakotans eligible for the program.
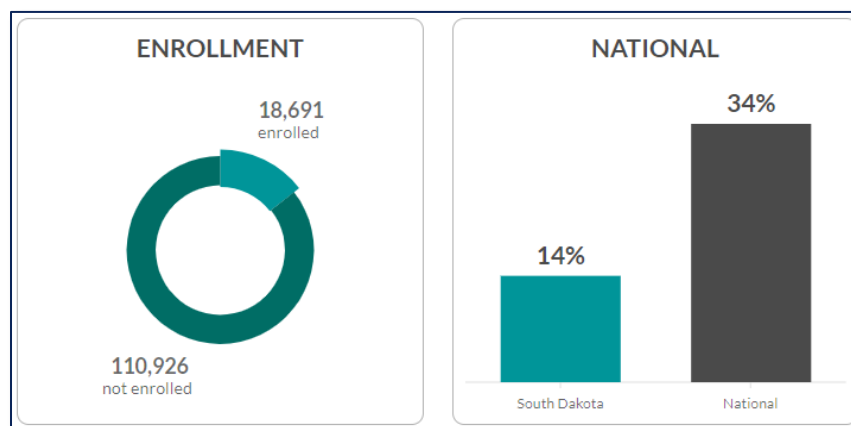
Figure 6. ACP Adoption in South Dakota as of June 26, 2023[57]

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[56] South Dakota Department of Agriculture and Natural Resources (published in 2004), Geologic Map of South Dakota. Accessed at: https://www.sdgs.usd.edu/pubs/pdf/G-10.pdf.

[57] Education Superhighway (accessed on June 26, 2023), No Home Left Offline: Accelerating Affordable Connectivity Program Adoption. Accessed at: https://www.educationsuperhighway.org/no-home-left-offline/acp-data/.

5 Implementation Plan

Converting South Dakota's vision into tangible positive impacts for residents, businesses, and communities requires a clear implementation plan to expand broadband assets and overcome barriers and obstacles. The remainder of this section provides detail on the following contributors to the current state of broadband and digital inclusion in South Dakota:

- **5.1 Stakeholder Engagement Process** – provides an overview of South Dakota's method for identifying stakeholders as well as the State's engagement strategy and plan for receiving ongoing feedback.
- **5.2 Priorities** – outlines the priorities for South Dakota's implementation principles.
- **5.3 Planned Activities** – covers the activities South Dakota intends to implement to meet its goals and objectives and deliver universal service to the State.
- **5.4 Key Execution Strategies** – presents the key strategies South Dakota will execute to meet its goals and objectives and align with the BEAD program requirements.
- **5.5 Estimated Timeline for Universal Service** – provides an estimated timeline to provide universal service in South Dakota.
- **5.6 Estimated Cost for Universal Service** – provides the estimated implementation cost to provide universal service in South Dakota.
- **5.7 Alignment** – presents where South Dakota's broadband expansion efforts intersect with other ongoing major initiatives in the State.
- **5.8 Technical Assistance** – covers areas of anticipated support and technical assistance South Dakota will need to ensure the Initial and Final Proposals meet the requirements and goals of the BEAD Program.

5.1 Stakeholder Engagement Process

As described in Section 2 of this document, coordination with the Digital Equity Plan has been a priority. Therefore, the State developed a singular plan to convene individuals and gather feedback in a way that provided insight for both the BEAD Five-Year Action Plan and the Digital Equity Plan. Development of the stakeholder engagement approach was established through three main activities: 1) understanding and meeting the NTIA requirements and mapping stakeholders, 2) outlining engagement activities and strategy, and 3) developing a plan for ongoing collaboration.

5.1.1 Stakeholder Mapping & Strategy

South Dakota's stakeholder engagement process is rooted in the requirements and guidance for both the BEAD Five-Year Action Plan and the Digital Equity Plan. The following three steps shaped South Dakota's engagement approach.

Step 1: Use the Five BEAD Coordination Requirements to underpin the State's engagement strategy. All related activities were designed to achieve the requirements intended outcomes.

BEAD Local Coordination Evaluation Criteria (BEAD NOFO, pp. 52-56):

- Full geographic coverage of the Eligible Entity (Rural, Suburban, Urban, Tribal);
- Meaningful engagement and outreach to diverse stakeholder groups;
- Utilization of multiple awareness and participation mechanisms and different methods to convey information and outreach;
- Establishment, documentation, and adherence to clear procedures to ensure transparency; and
- Outreach and engagement of unserved and underserved communities, including historically underrepresented and marginalized groups and/or communities.

Step 2: Incorporate the Digital Equity Act (DEA) Covered Populations into the relevant parties identified as priority participants.

Step 3: Add the DEA Policy Areas to further focus the strategy to guide discussion topics and gather pertinent input.

Digital Equity Covered Populations List (DE Planning Grant NOFO, p. 8):

- Individuals who live in covered households;
- Aging individuals;
- Incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility;
- Veterans;
- Individuals with disabilities;
- Individuals with a language barrier, including individuals who are English learners and individuals who have low levels of literacy;
- Individuals who are members of a racial or ethnic minority group; and
- Individuals who primarily reside in a rural area.

Digital Equity Priority Policy Areas (DE Planning Grant NOFO, p. 20):

- Economic and workforce development goals, plans, and outcomes;
- Educational outcomes;
- Health outcomes;
- Civic and social engagement; and
- Delivery of other essential services.

Once South Dakota developed an engagement framework based on the requirements for both BEAD and DE, the State went through a mapping exercise to identify relevant stakeholders and ensure representation of the covered populations and priority policy focus areas. The following tables provide insight to the stakeholders identified and the covered populations whose interests were represented. These tables were last updated on June 23, 2023.

Table 21: Stakeholders who Participated in at least one Engagement Activity

Note: This table does not include all the meetings that the South Dakota team independently held, including tribal meetings.

Entity Name	Entity Name
AARP	South Dakota Department of Corrections
Adult Education and Literacy Providers	South Dakota Department of Education
Avel eCare	South Dakota Department of Health
Black Hills Special Services Cooperative - Statewide Family Engagement Center	South Dakota Department of Human Services - Division of Rehabilitation Services
Career Learning Center of the Black Hills	South Dakota Department of Human Services (DHS) - Division of Service to the Blind and Visually Impaired
Center for Rural Affairs	South Dakota Department of Labor and Regulation
CenturyLink/Lumen	South Dakota Department of Public Safety
Communication Workers Union	South Dakota Department of Social Services (DSS)
Cornerstones Career Learning Center	South Dakota Department of Transportation
Dakota Link	South Dakota Department of Tribal Relations
Golden West Telecommunications	South Dakota Department of Veterans Affairs
Grow South Dakota	South Dakota Farm Bureau Federation
Interstate Telecommunications Cooperative, Inc.	South Dakota Housing Development Authority
Lake Area Technical College	South Dakota Municipal League
Lutheran Social Services of South Dakota	South Dakota Police Chief's Association
Maxwell Strategies	South Dakota Public Utilities Commission
Midco	South Dakota Retailers Association
Mitchell Technical College	South Dakota Sheriff's Association
PCs for People	South Dakota State Library
SDN Communications	South Dakota Telecommunications Association (SDTA)
Siouxland Libraries	South Dakota Workforce Development Council
South Dakota Board of Regents	South Dakota Workforce Innovation and Opportunity Act (WIOA) Partners
South Dakota Board of Technical Education	TrioTel
South Dakota Bureau of Information and Telecommunications	West River Cooperative Telephone Company
South Dakota Cattlemen's Association	Western Dakota Technical College

Table 22: Additional Entities Invited to Convene

Entity Name	Entity Name
Cheyenne River Sioux Tribe Telephone Authority	Oglala Lakota College
Ihanktonwan Community College	Sinte Gleska University
International Brotherhood of Electrical Workers	Sisseton Wahpeton College
Lutheran Social Services of South Dakota (Re-entry program)	Sitting Bull College
National Indian Council on Aging	Technical College - Southeast Tech
Native American Homeownership Coalition	Volunteers of America - Veteran Services

Table 23: Covered Populations Reached through Potential Stakeholders

	Households at or below 150% of the federal poverty line	Aging individuals	Incarcerated individuals	Individuals with disabilities	Veterans	Individuals with Language Barriers/ Low Literacy	Individuals belonging to a Racial/Ethnic Minority	Individuals residing in primarily rural areas
Count of one-on-one Meetings Covering the Needs of each Covered Population	8	7	1	3	1	3	2	18

5.1.2 Stakeholder Engagement Activities

Next, the State worked to determine the methodology for engagement with identified stakeholders. In alignment with the requirement to utilize multiple mechanisms for feedback, the State included a variety of activities that range from lower to higher touch engagements. The full list of potential activities is outlined below:

Activity	Intended Audience	Activity Description	Value
Communication			
Social Media	Public, External Stakeholders, ISPs	Periodic posting on the ConnectSD Twitter account and Facebook page to amplify messages (ex. public comment period)	Provides an opportunity to share messages and capture real time feedback from the general public
Dedicated Web Page	Public, External Stakeholders, ISPs	Posting BEAD and DE related updates on a web page	Will allow stakeholders to review information, including any notices, FAQ, or process documentation when needed
Press Release	Public, External Stakeholders, ISPs	Press releases with relevant information for stakeholders and the public – press releases can be distributed to mass media outlets and those that serve minority populations	Provides information about the project, upcoming engagement opportunities, and information on how to participate or where to submit comments
Consultation			
E-mail Inbox	Public, External Stakeholders, ISPs	An E-mail account dedicated to capture feedback on the BEAD and DEA programs	Can be used to capture public feedback, including during the required minimum 30-day public comment period for the DEA plan
One-on-one Meetings	Internal Stakeholders, External Organization Representatives	Semi-structured one-on-one conversations with representatives from relevant organizations	Provide insight on experiences in the represented communities as well as needed data for both the asset inventory and needs assessment
Group Meetings	Internal Stakeholders, External Organization Representatives	Focus groups should plan to have targeted groups of 8-10 people from representative organizations	Utilized as needed for follow up conversations based on the one-on-one meetings as well as group conversations with similar stakeholders, such as ISPs, which can provide deeper information needed as the projects progress, including for the BEAD initial proposal
Coordination			
Summit	External Organization Representatives, ISPs	Structured session to share information about the BEAD and DE programs and collect input from the public	Provides an opportunity to share a common message among multiple stakeholders and gather input from external stakeholders

Figure 7. Stakeholder Engagement Activities

5.1.3 Plan for Ongoing Collaboration

While initial engagement is critical to understanding the needs and implementation considerations for broadband expansion, South Dakota is keen on developing a long-term collaboration mechanism. Longevity is a goal of South Dakota, and the following areas provide an overview for how the State plans to work with key stakeholders.

Any stakeholder can share feedback with the Broadband Team through the team's email inbox. This inbox will remain active beyond the planning phase and will be utilized to continue capturing input and feedback. This promotes inclusivity, as it allows diverse voices from the public to provide input.

In addition to the email inbox, South Dakota will continue to maintain and monitor the portal where South Dakotans can report poor internet or lack of internet all together. This tool is an important mechanism to continue capturing information on broadband availability in the State.

This year, South Dakota hosted the first ever South Dakota Broadband Summit. The State intends to continue hosting this event annually. South Dakota will coordinate with ISPs and other representative organizations, such as the South Dakota Telecommunications Association (SDTA) throughout the application process. As the State enters the Initial Proposal phase and begins to develop the application, South Dakota will consider input from ISPs and SDTA on ways to improve or streamline the application. Once the application is established, South Dakota will hold technical assistance meetings to support ISPs in applying for the grant program. These activities will help to encourage inclusivity during the application process.

5.2 Priorities

The following priorities are key to supporting the South Dakota vision to connect every rural and urban resident, agricultural and commercial business, and community anchor institution to high-speed broadband internet across all locations in the State through strategic investments. The priorities for the BEAD program are primarily focused on infrastructure and cost but potential investments in additional programming and affordability initiatives are also important. Other priorities to address digital equity, adoption, and cybersecurity will be addressed in greater detail through the Digital Equity Plan.

While BEAD offers an opportunity for substantial investment, it is unlikely the funds will cover the cost to achieve full coverage of high-speed internet across the entire State. Therefore, South Dakota must prioritize geographic regions for investment. In alignment with the analysis in Section 3.4, the Black Hills region (Pennington, Lawrence, Meade, and Custer), the southeastern part of the State (Yankton, Clay, and Union), and tribal regions (Todd, Oglala Lakota, and Corson) are significant geographic regions of the State that continue to lack high-speed coverage. In part due to the topographical challenges described in Section 4, these areas are also high-cost regions. Through the USDA ReConnect Program and the Tribal Broadband Connectivity Program, South Dakota's Tribes have been awarded over $100 million for broadband investment. South Dakota intends to continue dialogue for coordination with Tribal Entities. However, geographic prioritization for BEAD investment is expected to primarily focus on the Black Hills and southeastern region.

Table 24: Priorities for Broadband Deployment and Digital Inclusion

Priority	Description
1. Expand last mile fiber deployment, especially in unserved areas of South Dakota	The State will use ConnectSD and the Governor's Office of Economic Development to award grants for strategic expansion of ISP coverage to unserved and underserved locations primarily in the Black Hills and southeastern region of the State.
2. Make fiber the standard by prioritizing fiber deployment through the subgrantee selection process	To enhance the longevity of the broadband expansion efforts, South Dakota will prioritize fiber deployment through the subgrantee process outlined in the ConnectSD application process.
3. Expand opportunity of broadband services for users	The State will promote ACP participation by ensuring ISPs and Digital Navigators are empowered to inform and enroll eligible residents with ACP through support and other forms of facilitation, as well as target other potential programming to help close the digital divide in South Dakota.

5.3   Planned Activities

To meet its goals and objectives, South Dakota's activities will need to be well-coordinated and well-funded. The State is fortunate to have a thriving ecosystem of willing partners – both private and non-profit – to engage in the broadband expansion work. Below is a list of the key activities to actualize South Dakota's vision, including the relevant implementation players, the expected funding sources, and the expected outcomes for each activity.

Table 25: Planned Activities for BEAD Implementation

Key Activities	Priority Category	Funding Source	Key Players	Expected Outcomes
Activity #1.1 – Administer ConnectSD grant	Priority #1 and #2	-BEAD funds -SD General Funds	-SD GOED -ISPs -SDN Communications	Select candidates will be most able to expand last mile fiber infrastructure.
Activity #1.1 – Prioritize Black Hills and southeastern region	Priority #1	-BEAD funds -SD General Funds	-SD GOED -ISPs	Deployment will reach some of the most difficult and expensive regions in the State.
Activity #1.2 – Prioritize fiber in project selection	Priority #1 and #2	-BEAD funds -SD General Funds	-SD GOED -ISPs	Infrastructure resulting from this funding will be robust, reliable, and long-lasting.
Activity #2 - ACP Registration support	Priority #3	-BEAD funds -DEA funds	-SD GOED -SD DLR -Grow SD	ACP participation will increase in the State and opportunities for broadband access will rise.

As illustrated in Section 3.4.1 above, pockets of South Dakota are categorized as unserved and underserved. In South Dakota, we believe infrastructure is the first step in addressing universal access to high-speed internet. Several stakeholders have echoed the same message – that the ability to connect to services from one's home or workplace is an essential prerequisite for broader digital literacy initiatives. This is reflected in South Dakota's priorities and identified key activities.

The primary activity utilizing BEAD funding will be supporting a grant program to allow ISPs to build out infrastructure for high-speed internet in the Black Hills, counties with Tribal Entities, and the southeastern region of South Dakota. Since the onset of the South Dakota ConnectSD program, the State has seen a significant expansion of high-speed coverage. The ConnectSD program has been successful in facilitating broadband infrastructure expansion. Building on this success, South Dakota intends to administer grants for projects in priority regions.

As highlighted through South Dakota's vision and goals, it is important to ensure this investment has long-lasting impacts. Working toward this goal includes choosing fiber when possible. Section 5.4 notes that the ConnectSD program is already a fiber-first program. South Dakota intends to uphold this standard throughout the BEAD process by setting preference for projects using fiber throughout the application process.

Successfully administering a grant program for BEAD will require collaboration with ISPs and representative organizations. South Dakota will support ISPs working to be eligible providers. This will include local coordination meetings and technical assistance workshops to help ISPs be successful in the application and award phases.

Most activities aimed to support affordability and adoption will be part of the greater Digital Equity Plan. However, given the requirement for participating providers to offer an affordable option, South Dakota intends to use the opportunity to work with providers to help facilitate participation in ACP. This effort will require collaboration with ISPs; DLR, which is supporting with the development of the Digital Equity Plan; and possibly community organizations.

5.4 *Key Execution Strategies*

South Dakota has put a great deal of effort toward establishing the ConnectSD grant program as a mechanism to distribute broadband related funding.[58] Given this structure already exists and prioritizes several of the points listed under Section 5.2, South Dakota intends to utilize the platform to administer additional broadband infrastructure grants funded by the BEAD program. Additional modifications or requirements may be included to ensure compliance with the BEAD program. However, the general steps outlined below will remain.

The ConnectSD program requirements focus on building infrastructure in underserved locations. Areas qualifying for grant projects are those lacking access to fiber or cable modem broadband speeds of 100 megabits per second download and 20 megabits per second upload. Primarily, ConnectSD plans to partner with providers to help connect locations in the Black Hills region, including north and south of I-90 from Rapid City to Spearfish or in key counties with Tribal Entities. Further, another region of focus will be south of Sioux Falls in the southeast corner of the State in the rural Vermillion/Yankton area.

Although the program allows for a minimum of 250/20 Mbps download and upload speeds for the 2023 grant year, it should be noted that, since 2019, the ConnectSD Broadband

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[58] Appendix 3 Press Release for latest ConnectSD funding.

Development Program has been a fiber-first program. The program requires grantees to offer a minimum download speed of 500 Mbps by 2027.

ISPs must submit a ConnectSD application for funding consideration. The ConnectSD grant program requires ISPs to apply for funding for specific projects. However, an ISP may submit multiple applications to allow for consideration of multiple projects. The applications are submitted via email. The Broadband Team, consisting of GOED and BIT personnel with oversight from the Governor's office, reviews these applications to ensure proposed projects meet the requirements of the program, including feasibility, cost, and impact value.

Grantees must maintain ongoing communication with GOED throughout the grant period and through grant closeout. Funding is distributed on a reimbursement basis. Grantees are asked to provide a quarterly update report to the State, which includes schedule updates, financial updates, and any additional information to highlight progress that has been made. Using actual receipts and costs incurred, as evidenced by proof of payment, the State will reimburse grantees.

Upon completion of the award, the grantee must provide the State with a Geographic Information System (GIS) shapefile detailing the updated service area. Grant closeout also includes a final report detailing, among other items, the technology used, speeds available, and final project costs. The Broadband Team will review this report to ensure compliance with the agreement made between the ISP and the State.

5.5 Estimated Timeline for Universal Service

Of the 50 completed ConnectSD projects with confirmed or estimated completion dates, the average duration for a project is roughly one year. Over time, the grants ConnectSD has administered cover longer timelines. For those projects in progress, the average duration is closer to a three-year rule of thumb in South Dakota.

Because one of the target regions for these efforts is the Black Hills, largely composed of granite, the time period for deployment in this area will likely be longer than the previous projects captured in the ConnectSD portfolio. Because of the topography and federal permitting, four or five years is a more realistic timeline for completion in this area based on qualitative feedback from stakeholders.

As previously discussed in Section 4 of this Plan, the construction season in South Dakota is already shortened due to weather but can also vary significantly due to the harshness of any given winter. South Dakota, through the ConnectSD program, has a proven track record of completing deployment expansion projects in a timely manner.

5.6 Estimated Cost for Universal Service

Cost is always difficult to estimate. However, by building off the portfolio of in progress and completed ConnectSD projects, GOED can estimate a cost for universal service in South Dakota. Deployment costs vary across South Dakota. Boring through granite in the Black Hills is quite different than laying fiber in much of the plains regions. As such, county-specific costs were accounted for to reflect these nuances.

As outlined in Section 3.4.1, an estimated 31,952 locations remain unserved or underserved in South Dakota. While these span the State, they are mostly in the three primary regions of focus: the Black Hills area, key counties with Tribal Entities, and the southeastern part of the State (Yankton, Union, and Clay counties).

Using the cost projection from completed or current ConnectSD projects, the total estimated cost for universal service in South Dakota is $281,322,164. Based on the project costs, an

average per location estimate was determined for each county. This average was then multiplied by the number of remaining unserved and underserved locations, as determined by the FCC. The counties with the highest estimated cost for full deployment are Pennington, Meade, Todd, Mellette, and Tripp. All of these counties fall within the target regions for deployment expansion for South Dakota. The full estimate was determined by summing up the estimated cost to reach all unserved and underserved locations across all counties. For additional detail, please see Appendix 1 under Section 7.

5.7   Alignment with other South Dakota Initiatives

Several policy priorities of the Governor align with, and will benefit from, the State's broadband expansion initiatives. All the goals and objectives outlined in this Plan have applicability or some relation to the following priorities of Governor Kristi Noem:

- **Connecting South Dakota** – The Governor's prioritization of funding behind broadband expansion directly underpins the additional support and funding BEAD can provide.[59]

- **Making Government More Transparent** – The Governor's initiative to make government more open through its online presence will be enhanced by broadband expansion, as citizens need access to broadband and the skills to use the internet to reap the full benefits of this increased transparency.[60]

- **Revitalizing Rural South Dakota** – Extending broadband to rural communities, which is a significant priority of ConnectSD, will play a major role in the Governor's initiative to attract people to live and work in these areas.[61]

- **Addressing the Stigma around Mental Health and Preventing Suicide** – Increased access to broadband and digital equity will allow South Dakotans to take advantage of telehealth resources that the Governor wants to make available to those who need mental health support.[62]

- **Battling the Meth Epidemic** – Similarly, increased access to broadband and digital equity will allow those who struggle with meth addiction to use telehealth resources that will support them.[63]

- **Leading the Way in Cybersecurity** – The Governor has prioritized enhancing cybersecurity in South Dakota, which is a crucial component of effectively using the internet.[64]

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[59] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Connecting South Dakota. Accessed at: https://governor.sd.gov/priorities/broadband.aspx.
[60] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Making Government More Transparent. Accessed at: https://governor.sd.gov/priorities/transparency.aspx.
[61] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Revitalizing Rural South Dakota. Accessed at: https://governor.sd.gov/priorities/rural-revitalization.aspx.
[62] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Addressing the Stigma Around Mental Health and Preventing Suicide. Accessed at: https://governor.sd.gov/priorities/mental-health.aspx.
[63] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Battling the Meth Epidemic. Accessed at: https://governor.sd.gov/priorities/meth.aspx.
[64] South Dakota Governor Kristi Noem (accessed on March 29, 2023), Leading the Way in Cybersecurity. Accessed at: https://governor.sd.gov/priorities/cybersecurity.aspx.

5.8   Technical Assistance

As South Dakota proceeds with its efforts to enact its vision and provide internet for all, a few areas of technical assistance are key to achieving universal service in the State.

One area of assistance from the NTIA that would help is early guidance on reporting requirements and timelines. As South Dakota begins translating the actions outlined in this Plan into workplans for the near future, ensuring alignment to these reporting requirements and creating pipelines of information that are relevant for those reports will be important.

Another area of assistance involves providing ongoing clarity around subrecipient requirements. As discussed earlier in this Plan, South Dakota has a proven vehicle for grant administration in the broadband space through ConnectSD. Ensuring communications on the rules and requirements around subrecipients will allow South Dakota to enhance the application process early in the implementation timeline. In this way, both ConnectSD and potential recipients of BEAD funding can align on how best to enact the South Dakota's vision for universal service.

6 Conclusion

It is South Dakota's vision to make strategic investments to connect every rural and urban resident, agricultural and commercial business, and community anchor institution to high-speed broadband internet across all locations in the State. This will allow every South Dakota citizen to fulfill their economic and social pursuits. ConnectSD offers a proven vehicle for awarding impactful grants and will continue to operate in that manner to accomplish this vision.

The State intends to use the funding provided under the BEAD Program to address the broadband needs of the unserved and underserved areas of South Dakota. Efforts will specifically focus on the counties around the Black Hills, counties in the south with Tribal Entities, and a few southeast counties. It will be important to work closely with ISPs to implement these initiatives and make high-speed broadband affordable, accessible, and advantageous to all South Dakota citizens.

The State is excited about its future broadband deployment efforts through the ConnectSD Program. South Dakota is looking forward to implementing this plan to further those efforts and take the next steps to create economic opportunity and bridge the digital divide in the State.

Successful implementation will hinge upon GOED's ability to maintain strong working relationships with the localized market participants that offer broadband to residents and businesses in the state. Open communication and coordination will continue to be a feature of the broadband expansion efforts in South Dakota.

7   Appendices

Appendix 1

The total estimated cost is a high-level estimate that relies on an aggregation of county-level estimates. Using the county level estimate is intended to account for differences in the cost of broadband projects across regions in South Dakota. A county-by-county breakdown of the estimated cost for full service is outlined below. All projections are based off the cost of ConnectSD projects that are completed or in progress. Using the estimation methods for unserved and underserved locations per county, a cost per location analysis was created. The following steps were taken to estimate the total cost.

1	**2**	**3**	**4**	**5**
Determine the number of locations served by each project within a given county	Calculate the proportioned cost of each project within the county	Use the sums from steps 1 and 2 to find the average per location cost within the county	Multiply the county's estimated cost per location by the number of unserved and underserved locations	Sum the estimated total cost for each county

Step 1. Determine the number of locations served by each project within a given county

Each ConnectSD project provides the number of locations served. Within a given project, multiple counties could be serviced. Using FCC data, the ratio of unserved and underserved locations across counties was used to estimate proportion of locations served within the county by each project. For example, assume a project reached 900 locations across county A and county B. If county A has twice as many unserved and underserved locations compared to county B, then it was assumed that the project served twice as many locations in county A compared to county B. County A is assumed to have 600 locations served through the project, and county B is assumed to have 300 locations served.

Step 2. Calculate the proportioned cost of each project within the county

For a given project, the estimated number of locations served was then multiplied by the cost per location as agreed upon in the application and reporting. This value is the proportioned amount the project spent or plans to be spent in the region.

Step 3. Use the sums from steps 1 and 2 to find the average per location cost within the county

After completing steps 1 and 2 for every ConnectSD project, the sum of the amount spent in each county is then divided by the estimated number of locations served in the county. This gives an estimate of the per location cost within the county. Nineteen (19) counties did not have cost information in the ConnectSD portfolio. For those, a statewide project average was used (these counties are noted with an asterisk in the table below).

Step 4. Multiply the county's estimated cost per location by the number of unserved and underserved locations

The FCC data provides an estimate of unserved and underserved locations in each county. The number of unserved and underserved locations is multiplied by the cost per location estimated in step 3. This calculates the estimated cost to achieve full coverage in each county.

Step 5. Sum the estimated total cost for each county

Using the county estimates found in the table below, a total estimate can be derived.

Methodology Limitations

Several variables impact the true cost of full coverage. The estimate listed is likely an underestimate of the true cost for full broadband deployment in South Dakota.

- FCC data does not completely capture the number of unserved and underserved locations. If more unserved and underserved locations exist, the cost will increase.
- This formula relies on the assumption that the ConnectSD projects are distributed proportionately by unserved and underserved locations across the regions each project serves. Therefore, some variance may exist in the true cost to achieve full coverage in each county.
- The Tribal Broadband Connectivity Program estimates are not considered. Additional costs that are not considered here may exist that could drive up the cost. For example, additional permitting costs are present on tribal lands.
- As demand for supplies and workforce increases due to the onset of broadband projects across the nation, the cost for materials and workforce will increase. The data used for this estimate relies on costs from previous years and does not capture anticipated increases.

County	Served Locations	Total Estimated Unserved and Underserved	Cost per Location	Total Estimated Cost per County
Pennington	34,939	4,295	$8,261	$35,479,337
Lawrence	9,736	2,980	$3,578	$10,662,936
Meade	8,794	2,936	$5,360	$15,738,339
Custer	3,375	1,989	$5,595	$11,128,910
Todd*	565	1,674	$8,923	$14,937,286
Oglala Lakota	1,526	1,258	$5,422	$6,820,614
Fall River*	3,573	1,219	$8,923	$10,877,271
Brown	13,896	983	$8,625	$8,476,165
Yankton	8,092	941	$8,281	$7,792,790
Clay	4,147	936	$1,068	$999,674
Campbell*	604	824	$8,923	$7,352,643
Marshall*	2,482	759	$8,923	$6,772,640
Minnehaha	64,259	747	$7,876	$5,887,091
Charles Mix	4,364	705	$7,421	$5,232,092
Butte	4,098	630	$4,712	$2,968,521
Lincoln	20,801	587	$10,068	$5,912,957
Day	3,996	501	$7,544	$3,778,123
Edmunds	2,360	499	$9,023	$4,502,444
Mellette	510	498	$42,619	$21,206,076
Jackson*	1,148	480	$8,923	$4,283,093
Codington	13,383	477	$10,273	$4,900,167
Bon Homme*	3,319	441	$8,923	$3,935,092
Tripp	3,156	438	$42,619	$18,656,247
Dewey	2,164	437	$4,679	$2,043,344
Corson	1,478	407	$7,776	$3,164,750
Union	6,929	395	$3,879	$1,532,162
Walworth*	3,619	337	$8,923	$3,007,088
Spink	3,509	317	$11,224	$3,556,193
Hutchinson	4,155	300	$3,080	$924,027
Stanley	1,437	292	$38,542	$11,251,167
Miner*	1,667	255	$8,923	$2,275,393
Jones	506	254	$38,542	$9,804,588
Bennett*	1,157	214	$8,923	$1,909,546
Grant	3,876	197	$8,169	$1,609,310
Brookings	11,845	184	$11,219	$2,066,875
Sanborn	1,553	184	$10,288	$1,893,010
Kingsbury	3,374	168	$11,219	$1,887,398
Haakon*	1,475	160	$8,923	$1,427,698
Douglas*	1,794	143	$8,923	$1,276,005

Deuel*	2,721	115	$8,923	$1,026,158
Roberts	5,360	112	$8,121	$909,520
Clark*	2,240	103	$8,923	$919,080
Gregory*	3,036	101	$8,923	$901,234
Hanson	1,581	100	$8,431	$843,079
Brule	2,595	95	$5,214	$497,362
Ziebach*	1,188	89	$8,923	$794,157
Faulk	1,647	78	$14,728	$1,148,808
Aurora	1,747	73	$5,214	$382,774
Perkins*	3,016	72	$8,923	$642,464
Harding	1,061	70	$42,619	$2,974,800
Hughes	7,392	64	$9,490	$607,363
Davison	8,496	62	$7,248	$449,382
Jerauld	1,430	46	$3,080	$141,684
Lyman	2,137	43	$6,809	$290,672
Buffalo	514	33	$5,214	$173,101
Hamlin	3,600	21	$4,012	$84,254
McPherson	3,106	20	$5,918	$121,131
Hand	2,850	19	$23,203	$440,859
Lake	5,729	3	$12,901	$36,282
Moody	3,200	2	$12,234	$18,939
Hyde*	1,042	0	$8,923	$0
Potter*	3,216	0	$8,923	$0
Sully*	2,226	0	$8,923	$0
Turner	4,448	-3	$7,179	$0
McCook	1,109	-130	$9,144	$0
Beadle	8,914	-277	$14,053	$0
TOTAL	**349,262**	**31,952**		**$281,332,164**

Appendix 2

Detailed Methodology for Determining Underserved and Unserved Locations Going Forward

The purpose of this analysis is to find specific addresses that are classified as unserved or underserved according to state policies. Across the broadband industry experts have long argued policies around what are considered underserved locations, what speed is a minimum, what technologies should be used, etc. It should be noted that, since 2019, the ConnectSD Broadband Development Program has been a fiber-first program. Other technologies such as copper, fixed wireless, and satellite, while they have their place in the ecosystem, are considered temporary "stop-gap" technologies. These technologies are undesirable to the end user experience; as consumers connect more devices to their networks, the performance for long term broadband sustainability drastically declines. South Dakota is not satisfied with the "good enough" mentality that would utilize a technology that barely (or usually) reaches minimum speeds. Rather, the state has made the policy decision to approve and fund future-proof fiber projects that are the gold standard for broadband deployment.

Using the South Dakota state guidelines and as ConnectSD is a fiber first program, the broadband technologies approved for considering underserved locations are fiber and cable technology. The State has allowed cable technology as most cable providers are converting to fiber and most existing cable networks are capable of 1Gig download speeds. Copper, fixed wireless, and satellite were not considered during this analysis because of these guidelines.

The first step is to gather all data which will be used in the analysis. The data that was used in this study was:

1. Version 3 of the Costquest Broadband Serviceable Location Fabric
    a. Used with the BDC filing as of June 30, 2023
2. The Fixed Broadband Availability Data
    a. Data as of December 31, 2022
    b. Used to map out the coverages of fiber and cable across the state
3. All known and reported **federal** awards issued from 2019 – May 2023
    a. Includes: USDA Reconnect, RDOF, Tribal (If known)
4. All known and reported **state** ConnectSD awards issued from 2019 – May 2023.

Once all the data has been gathered it is then brought into ArcGIS pro. The Broadband Fabric was charted using the Latitude and Longitude coordinates that were provided inside the table which created 398,483 address location points for total addresses inside the state borders. The next step is to create the latest Fixed Broadband coverage that was downloaded from the FCC, these CSV files must be joined with the newly adopted hexagon pattern. By running a join between the H3INDEX field (South Dakota hex 8 pattern) and the h3_9 field (FCC data tables) we can link the state hex pattern with the newest version of the FCC coverage data (it should be noted that this process will need to run for each broadband technology separately).

Now that the coverages have been built, the next step is to isolate those areas which fall into the 100/20 Mbps download/upload speed. This is done by running a selection tool with coded values programmed to find only those hexagons that meet the 100/20 guidelines which selects 36,073 hexagons. By keeping these features selected we can run a copy tool which will only copy the selected hexagons, thus creating features that are only within the 100/20 Mbps guidelines. If

we hit the switch tab inside the attribute table, the selected hexagons will change to those that are under the 100/20 (underserved) which will then select 1,232 hexagons. The same process for copying these selected features will apply in order to isolate the cable hexagons as well, which will create 2,289 covered hexagons within the 100/20 Mbps guidelines and 0 underserved.

Our background data having been built, the next steps will be to start the analysis to find which of the fabric points are outside of coverage and or already award areas (either state or federal). To find these areas the erase geoprocessing tool will be used against the 100/20 Mbps coverages of Fiber/Cable and all awarded areas from 2019-2023. The result from running the erase tool for every compounding feature class will leave only fabric points that are outside of the coverage and/or award areas.

The result from this analysis leaves a total of 21,398 unserved broadband serviceable locations and 3,217 underserved locations across the state. Totaling these locations tell us we have 24,615 locations to connect. As South Dakota's vision is for every location to be connected we'll continue to process this methodology to as much precision as possible. Our goal is to finalize connecting these last locations one-by-one if we have to.

Other methods to determine what locations are unconnected may include speed test data (our own, purchased, or citizen-based) and the state will also utilize outreach with providers, citizens, and local experts. Our goal is to strengthen the accuracy of our review by any available methods. This will only enhance our ability to maximize this program to help us do what is in the best interest of our citizens.

Appendix 3

Official Press Release from Governor Kristi Noem on New Grant Round for Fall 2023

Gov. Noem Announces $27 Million in High-Speed Broadband Grants

Governor Kristi Noem and the Governor's Office of Economic Development announced the final round of funding that will award up to $27 million to connect rural South Dakota to high-speed broadband.

Date published: 08/22/2023

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FOR IMMEDIATE RELEASE
August 22, 2023
Contact: Ian Fury

Gov. Noem Announces $27 Million in High-Speed Broadband Grants

PIERRE, S.D. – Governor Kristi Noem and the Governor's Office of Economic Development (GOED) announced the final round of funding that will award up to $27 million to connect rural South Dakota to high-speed broadband. Governor Noem made this announcement during the South Dakota Telecommunications Association Conference. You can find the video of Governor Noem's announcement here.

"We are revitalizing small town America with this investment. And we are preserving our way of life," said **Governor Noem.** "My vision is to bring, high-speed internet to every home and business in South Dakota. No one should have to choose between the modern economy and a life in their hometown. It's time to finish the job."

The Connect SD broadband program has connected tens of thousands of households and businesses to high-speed broadband since Governor Noem took office in 2019. Over $269.5 million has been invested into broadband expansion in South Dakota.

South Dakotans should never be left behind because of the small-town way of life they've chosen to build for themselves and for their families. Thanks to Governor Noem's continuous efforts, more and more South Dakotans are reaping the benefits of expanded opportunities in education, entertainment, and commerce," said **GOED Commissioner Chris Schilken**.

This investment will be crucial for South Dakota's workforce development and future economic efforts. The goal is to create vibrant, connected communities across the state.

This is South Dakota's eighth round of broadband expansion grants since 2019. Grant applications will be available soon on the Connect SD website.[65]

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[65] South Dakota State News Press Release from August 22, 2023 (accessed August 28. 2023). Accessed at: https://news.sd.gov/news?id=news_kb_article_view&sys_id=a039c3791bb4b11002f3dcaee54bcb06