Supplier Diversity Programs in the Telecommunications Industry:
A Focus on 5G Innovation and Deployment

Advisory Committee on Diversity and Digital Empowerment (ACDDE)

A Report of the

Diversity in the Tech Sector Working Group

Presented by

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EXECUTIVE SUMMARY

The explosion of fifth generation (5G) mobile broadband has added to the range of opportunities for those trapped by digital disparities. Advanced mobile communications, like 5G, can offer faster speeds and lower latency that enables a host of applications that bring high-speed broadband to rural communities and under-represented populations. Companies and their workforces need to be operational and ready to respond to the massive amount of infrastructure required for 5G as quickly as possible, especially those owned by Minority- and Women-Owned Businesses (MWBEs). Further, more research needs to be done to identify and compile the programs these diverse suppliers can benefit from, some of which are included in this report.

The Diversity in the Tech (DIT) Working Group of the Advisory Committee on Diversity and Digital Empowerment ("ACDDE") explores a range of opportunities around workforce development, tech entrepreneurship, and burgeoning digital opportunities, including 5G technologies. The Supplier Diversity Subgroup ("Subgroup") of the DIT has focused on this aspect during its ACDDE tenure to reveal how diverse suppliers are engaging or being engaged in 5G rollout and expansion, as well as related rural broadband projects.

The targeted industries that were included in our research were "telecommunications companies," that have competitively qualified and were awarded funds through programs including E-Rate, the Connect America Fund, the Rural Digital Equity Fund, the Telecom Infrastructure Loan Fund, the 5G Fund for Rural America, Lifeline, the Covid-19 Relief Program, and the Rural Digital Opportunity Fund. Each of these programs, which are described in the report, can offer "competitive opportunities" for diverse suppliers in infrastructure, services, and maintenance. For this report, "competitive opportunities" are defined as the creative and collaborative business relationships between diverse suppliers and grant, loan, and subsidy broadband recipients.

Our report's conclusions offer the Federal Communications Commission (FCC) a range of competitive opportunities available via existing supplier diversity programs among a range of companies. Data was gleaned from gathered surveys from four telecommunications companies. In the Appendices, we provide both a draft questionnaire that can be used to glean such competitive opportunities from companies on a voluntary basis, along with a starter listing of the federally funded broadband programs where opportunities exist for diverse suppliers.

Our final report also offers the following recommendations to the FCC, which surface the supplier diversity opportunities available in existing and emerging programs related to 5G and rural broadband below.

RECOMMENDATIONS

1. Information Communications Technology (ICT) sector businesses are encouraged to increase the transparency of their supplier diversity goals, objectives and achievements. We recommend that the new Communications Equity and Diversity Council compile and report such information to the FCC.
2. The Commission use that data to host a series of workshops that raise awareness about federal programs that can benefit 5G and rural infrastructure deployments and related services.
3. The Commission should issue a formal statement to companies under the agency's jurisdiction through the Office of Communications Business Opportunities about the importance of supplier diversity in high-investment critical innovation opportunities, including 5G.
4. The Commission should continue to leverage the ACDDE to gather, report, and share strategies for ensuring the diversity and inclusion of minority-and women-owned businesses in their emerging sectors.

I.   INTRODUCTION

One of the many ways to close the digital divide is to catalyze academic, industry, and community leaders to address 21st century workforce development gaps, as well as to integrate diverse suppliers into the burgeoning technology ecosystem. Doing so will align community leaders, researchers, corporate leaders, entrepreneurs, civic organizers, Historically Black Colleges and Universities (HBCUs), Predominantly Black Institutions (PBIs), Hispanic-Serving Institutions (HSIs), Tribal Colleges and Universities, and other Minority Serving Institutions (MSIs) around innovative tech workforce strategies and diverse supplier inclusion.

The explosion of fifth generation (5G) mobile broadband has added to the range of opportunities for those trapped by digital disparities. Advanced mobile communications, like 5G, can offer faster speeds and lower latency that enables a host of applications that bring high-speed broadband to rural communities and under-represented populations.

To amplify this point, the WIA Innovation and Technology Council in its 2018 report, *Wireless Infrastructure as the Foundation of Smart Cities and Communities*, concluded that the U.S. needs "[t]o avoid a digital divide that segments the populations into those with robust wireless services and those without." More specifically, the report states that "the reality is that lack of robust infrastructure can lead to a significant disparity of available services for underserved residents. Significant investment in broadband wireless connectivity is needed to prevent these disparities."[1]

In their new research report, *5G Promises Massive Job and GDP Growth in the U.S.,* the Boston Consulting Group, in collaboration with CTIA – The Wireless Association, found that "5G deployment will contribute $1.4 trillion to $1.7 trillion to the U.S. GDP and create between 3.8 million to 4.6 million jobs in the next decade. The growth will occur directly through infrastructure investment and indirectly enabling innovation that transforms all sectors of the economy."[2]

The report also concluded that "[d]elays in network infrastructure buildout or making more licensed spectrum available would carry significant opportunity

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[1] Wireless Infrastructure Association, Wireless Infrastructure as the Foundation of Smart Cities and Communities. (May 22, 2018), Wireless Infrastructure as the Foundation of Smart Cities and Communities - WIA

[2] Enrique Duarte Melo et al., "5G Promises Massive Job and GDP Growth in the US," *Boston Consulting Group*, February 2021, 2, https://api.ctia.org/wp-content/uploads/2021/01/5G-Promises-Massive-Job-and-GDP-Growth-in-the-US_Feb-2021.pdf.

costs."[3] Generally, the findings suggest that "at a national level, every six-month delay in 5G network deployment could, on average, mean missing out on $25 billion of the potential 5G benefits from 2020 to 2030. An extended delay could also erode the comparative advantage that the U.S. currently hold in many industries."[4]

Further, the Wireless Industry Association Innovation and Technology Council published a 2018 White Paper, *Technical Preparation Needed for 5G Infrastructure Deployments*, which found that "[t]he rollout of 5G technologies and the services that will transverse this infrastructure will transform many industries across the globe. Given its importance to the world economy, the companies working to bring this vision into reality must get it right."[5]

Although this report and others present the compelling needs for companies and their workforces to be operational and ready to respond to the massive amount of infrastructure required for 5G as quickly as possible, more needs to be done to identify and compile the programs those diverse suppliers can benefit from, some of which are included in this report.

The Diversity in the Tech Sector Working Group of the Advisory Committee on Diversity and Digital Empowerment ("ACDDE") explores a range of opportunities around workforce development, tech entrepreneurship, and burgeoning digital opportunities, including 5G technologies. The Supplier Diversity Subgroup ("Subgroup") has focused on this aspect during its tenure to reveal how diverse suppliers are engaging or being engaged in 5G rollout and expansion, as well as related rural broadband projects.

The targeted industries that were included in our research were telecommunications companies that have competitively qualified and were awarded funds through programs including E-Rate, the Connect America Fund, the Rural Digital Equity Fund, the Telecom Infrastructure Loan Fund, the 5G Fund for Rural America, Lifeline, the Covid-19 Relief Program, and the Rural Digital Opportunity Fund. We describe these programs in this report. For the report, "competitive opportunities" are defined as the creative and collaborative business relationships between diverse suppliers and grant, loan, and subsidy broadband recipients.

Our report's conclusions offer the Federal Communications Commission (FCC) a range of competitive opportunities available via existing supplier diversity programs among a range of companies. Data was gleaned from gathered surveys from four telecommunications companies. In the Appendices, we provide both a draft

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[3] Duarte Melo et al., 10.
[4] Duarte Melo et al., 10.
[5] WIA Innovation & Technology Council, Technical Preparation Needed for 5G Infrastructure Deployments, April 18, 2018, WIA-White-Paper-5G-Technical-Prep.pdf

questionnaire that can be used to glean such competitive opportunities from companies on a voluntary basis, along with a starter listing of the federally funded broadband programs where opportunities exist for diverse suppliers.
We implore federal agencies to explore how to increase supplier diversity among companies that are deploying broadband infrastructure, especially in communities in dire need of connectivity. Such data could potentially encourage the role of diverse businesses as important economic drivers in underserved communities and providers of workforce opportunities, business development, and wealth generation.

It is the intent of our subgroup to share which federal funding programs could be engaged to increase diverse representation and not necessarily give detail on the specific strategies that can be deployed. Therefore, we close our report with a set of proposed recommendations for consideration to the ACDDE and FCC.

II. DIVERSE SUPPLIERS CAN SIGNIFICANTLY BENEFIT FROM FEDERALLY FUNDED PROGRAMS SUPPORTING 5G AND RURAL BROADBAND

5G

In the mobile industry, 5G is a game-changer. In the past, 3G and 4G technology used wireless towers that could cover 30-45 miles over flat terrain. But 5G is completely different. It uses what is called "small cell architecture," which requires far more cell phone tower locations. For major metropolitan areas, this could mean one small cell phone tower on almost every street corner.

Today, there are about 200,000 cell phone towers scattered across the U.S.[6] Yet, when the 5G network is constructed, there will be more than 1,000,000 cell phone towers to support the higher bandwidth, higher speeds, and new services delivered over 5G. That is at least a five-time increase in the number of towers needed for 5G compared to the previous generation wireless technology.[7]

To provide the enormously faster data speeds of 5G, the next-generation system requires much denser infrastructure than 4G – with up to 300,000 small cell antennae required over the next four years (equal to two times the number of macro cell towers built in the last 30 years). There is a radical difference between building a 4G network and building a 5G network, from going from macro to small cells, between erecting macro cells and hanging small cell antennae on utility poles and buildings.

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[6] Bill Snyder, "5G could require cell towers on every street corner," *CIO*, September 8, 2016, https://www.cio.com/article/3117705/5g-could-require-cell-towers-on-every-street-corner.html.
[7] Jeff Brown, The Near Future Report, 2019, https://www.brownstoneresearch.com/products/the-near-future-report/.

Looking forward, the radically different buildout requirements for 5G make them well-suited for small, diverse businesses. The amount of capital investment in equipment, training, and safety concerns is less of a barrier to entry than traditional large cell tower construction, maintenance, and upgrades. This makes small diverse suppliers generally *more suitable* to meet these requirements and play a key role in deployment of 5G networks. This is not only beneficial to serving underserved communities with new networks, but to creating economic growth and jobs in these communities from diverse suppliers. The wireless industry is reported to be confronted with a major workforce shortage. It is estimated that over 20,000 jobs are needed to build and maintain the required infrastructure for 5G deployment. This shortage can present opportunities for the engagement of diverse suppliers, especially those working and living within inclusive communities.

Rural Broadband

The COVID-19 pandemic has accelerated the United States' dependence on broadband infrastructure, particularly in the areas of education, employment, healthcare, and e-commerce. In rural areas, where the Biden Administration's American Jobs Plan estimates that 35 percent of Americans lack broadband access, this rapid shift to remote learning, telecommuting, and telehealth, along with increased dependence on e-commerce retailers, has widened existing socioeconomic disparities.[8]

The growing "digital divide" between Americans who can participate in the digital world and those who cannot threatens to erode U.S. economic productivity and harm potential advances in healthcare and education. Indeed, rural Americans without broadband access have fewer workforce opportunities. Additionally, critical shortages of medical providers in rural areas pointed to the need for telehealth long before the COVID-19 pandemic rendered telehealth a vital element of modern healthcare, highlighting the need for increased investments in broadband infrastructure in rural areas.[9] Lack of broadband accessibility also leads to fewer educational opportunities, leaving rural students at a disadvantage compared to their peers with reliable, high-speed internet connectivity.

Due to the direct relationship between broadband accessibility, economic productivity, and employment rates, investing in rural broadband infrastructure

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[8] "FACT SHEET: The American Jobs Plan," The White House, March 31, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/31/fact-sheet-the-american-jobs-plan/.

[9] Esther Hing and Chun-Ju Hsiao, "State Variability in Supply of Office-based Primary Care Providers: United States, 2012," NCHS, May 2014, https://www.ruralhealthweb.org/NRHA/media/Emerge_NRHA/PDFs/db151.pdf.

remains a critical priority for addressing socioeconomic disparities that have been exacerbated by the digital divide.[10]

III. PROJECT OBJECTIVES, METHODS, AND TASKS

To compile the findings for our report, the Supplier Diversity subgroup reviewed the use of diverse supplier programs in 5G deployments by four randomly selected, private sector vendors, all of whom received funding from federal agencies. The goal of our inquiry was to identify some of the legacy and new federal grant, loan, and subsidy programs that support the delivery of 5G and broadband services to targeted communities. Through an FCC approved survey instrument (Appendix A), we also share their experiences with diverse suppliers in the capacities of direct vendors and as sub-awardees as part of their federal grant, loan, and subsidy programs. The responses are aggregated in Appendix B.

The intent for the study is to demonstrate areas where the FCC can be more proactive in identifying and supporting the engagement of diverse suppliers in 5G and rural infrastructure deployments. More specifically, we identified and compiled publicly available programs with opportunities for diverse suppliers, which are listed in Appendix C.

 At the outset of the work, the subgroup identified three objectives, and a set of assigned tasks with set methods for data collection. Each objective is outlined below.

> ➢ *Objective #1*: <u>Compile information of telecommunications industry supplier diversity programs</u>.
>
>   Task 1: Select four 5G / rural broadband service providers
>   Task 2: Design the questionnaire instrument
>   Task 3: Secure FCC review and approval of the questionnaire
>   Task 3: Analyze questionnaire responses
>   Task 4: Integrate results into the final report

Objective #1 was an aggressive goal in terms of timing, but we managed to collect and analyze the results from four completed surveys, whose data will be reported later in the report. Our research strategy was to poll a small, anonymous sample of industry stakeholders to apply as a limited beta test around the improved ways to engage supplier diversity in emerging technology businesses, like 5G. The formal survey instrument, which was approved by the FCC, is in Appendix A. This report

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[10] "Impact of broadband on the economy," International Telecommunication Union (ITU), April 2012, https://www.itu.int/ITU-D/treg/broadband/ITU-BB-Reports_Impact-of-Boradband-on-the-Economy.pdf.

also includes data gleaned from public information, websites, annual reports, and Securities and Exchange Commission filings.

> *Objective #2*: Present a summary compilation of survey findings (Appendix B) federally funded broadband programs to include loans, grants, auctions, and other subsidies. (Appendix C)

> *Objective #3*: Collaborate with other ACDDE working groups in sharing the findings and knowledge gained from work on this report.

On objective #3, our subgroup participated the *Tech and Communications Diversity Opportunity Symposium and Virtual Fair,* which was held on April 28, 2021, in partnership with the Digital Empowerment and Inclusion Working Group (DEI). The event included a match-making exercise to connect diverse communications businesses and employees with large and mid-sized communications firms. Our subgroup supported the symposium and virtual fair development and production.

IV.   FINDINGS

The Supplier Diversity subgroup found gaps in the examination of how diverse suppliers are benefitting in the areas of developing, designing, and building infrastructure for new 5G technologies and rural broadband innovations after a review of public, private, and survey research data. Our subgroup also found that little empirical data exists on how federal agencies, including the FCC and the U.S. Departments of Commerce and Agriculture, are directly engaging diverse suppliers in their programs. While there have been prior attempts to examine these areas, formal programs and transferable best practices have not been unearthed, leaving vast opportunities for the FCC to promote supplier diversity options among incumbent companies and MWBEs.[11]

Appendix B is a compilation of aggregated responses from a select number of service providers that were recipients of some stream of the federal funding identified within the report. Among the respondents, many were unable to provide all the information for our inquiries due to the proprietary nature of the information being sought, and a likely competitive procurement advantage. A summary of the themes that emerged from the survey data is below:

1. The companies that responded to the survey do place supplier diversity procurement as a top priority.
2. In most instances, the supplier diversity programs of respondent companies report directly to C-suite level.

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[11] The aggregation of telecommunications industry supplier diversity data is also not readily available to capture data and progress in these areas since the 2019 ACDDE Tech Diversity Best Practices Report.

3. Most respondents viewed capacity and mergers and acquisitions (M&As) as challenges to increasing procurement spends with diverse suppliers.
4. Many respondent companies engaged third party organizations to certify supplier diversity status, and to assist with identifying diverse suppliers.
5. Participating company respondents also felt that diverse supplier companies should do a better job in developing relationships with program managers and procurement personnel such as buyers and forecasters.
6. Company respondents desired to see diverse suppliers more engaged in their corporate events, such as conferences, webinars, and trade shows to business with them.
7. Respondents reported that the use of external diversity councils and other engagements provide valuable feedback and ideas about equity and inclusion best practices for diverse suppliers.

These topline themes are worth noting for our final deliverable because they offer some substantive guidance on how to increase the engagement of diverse suppliers on both sides. They also suggest that more data should be voluntarily collected from companies and suppliers to ensure a more balanced procurement ecosystem.

V. PROPOSALS TO THE FCC TO ADVANCE THE INCLUSION OF DIVERSE SUPPLIERS IN ADVANCED COMMUNICATIONS SYSTEMS

The limited survey findings from company respondents, along with the in-depth analyses of the available federally procurement programs are the focus of this report. Our findings could suggest that there is value in the FCC collecting and reporting supplier diversity metrics. We offer in the final section a set of initial actionable recommendations for consideration by the ACDDE and the FCC for implementation and/or exploratory review.

RECOMMENDATIONS

1. Information Communications Technology (ICT) sector businesses are encouraged to increase the transparency of their supplier diversity goals, objectives and achievements. We recommend that the new Communications Equity and Diversity Council compile and report such information to the FCC.
2. The Commission use that data to host a series of workshops that raise awareness about federal programs that can benefit 5G and rural infrastructure deployments and related services.
3. The Commission should issue a formal statement to companies under the agency's jurisdiction through the Office of Communications Business Opportunities about the importance of supplier diversity in high-investment critical innovation opportunities, including 5G and rural broadband.

4. The Commission should continue to leverage the ACDDE to gather, report, and share strategies for ensuring the diversity and inclusion of minority-and women-owned businesses in their emerging sectors.

APPENDICES

       A. Industry Questionnaire
       B. Summary Compilation of Questionnaire Responses
       C. Summary Compilation of Broadband Federal Funded Programs

Appendix A
Industry Questionnaire

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1. How is your company structured to ensure diverse suppliers are used to build out your infrastructure for broadband, 5G, and other networks?

2. Describe your supplier diversity program and highlight any successful program innovations and strategies.

3. Are you the recipient of government broadband grants or other subsidies? If yes, can you describe the programs and the utilization level of Black, Hispanic, Asian, and women-owned companies in fulfilling the program requirements?

4. What are some of the areas in your company where diverse suppliers are utilized the most in your infrastructure rollouts, such as site acquisitions, new tower builds and upgrades, permitting, right of ways, site inspections, and deinstallations and 5G densification?

5. Overall, what is your company's percentage levels of infrastructure spends with diverse suppliers in these areas? Can you specify by Blacks, Hispanics and Asians and women-owned companies?

6. In the future, are there other areas in your company's infrastructure business that you want to increase the utilization level of diverse suppliers? If yes, what are the areas?

7. What do you consider the greatest challenges to increasing your company's level of diverse suppliers in infrastructure requirements?

8. What resources, approaches, or methods at your disposal can ameliorate these challenges?

Appendix B
Summary Compilation of Questionnaire Responses

1. *How is your company structured to ensure diverse suppliers are used to build out your infrastructure for broadband, 5G, and other networks?*

Response:
Respondents maintain high level oversite to supplier diversity programs through diversity councils, strategic leadership teams and executive level reviews. They employ targeted accelerator type programs that encourage internal units to be competitive in increasing diverse supplier utilization. Companies also stated that C-suite executives are given annual supplier diversity targets which are reviewed on a regular basis. To aid with matchmaking, companies engage third party agencies to broadcast procurement information and accepts third party supplier diversity certifications and have internal specialized supplier diversity teams that conducts mandatory trainings for sourcing managers.

2. *Describe your supplier diversity program and highlight any successful program innovations and strategies.*

Response:
One respondent provides in depth resource guides on becoming a successful supplier and this resulted in the company exceeding $1billion dollars in diverse spending for three consecutive years. Other companies provide resource guides on opportunities and how to become a successful supplier. Another responded has a dedicated supplier diversity team that support diversity champions in the organization. These teams advocate and educate employees on the benefits of a robust supplier diversity initiative. In some instances, companies require first tier suppliers to contractually commit to percentage of spends on diverse suppliers and achieve improvement year over year. Another respondent identifies very specific business units that are targeted for increased diverse supplier spends. The specialized unit conducts mandatory trainings for internal sourcing managers. One respondent has developed Memorandum of Understanding (MoU) with a coalition of civil rights groups to expand on its existing nationally recognized diversity initiatives. This company also identifies and invest in programs that mentor and coach diverse business owners who seek to compete for contracting opportunities in the wireless network industry. To combat access to capital, a respondent actively partners with minority-led community organizations to promote contracting opportunities and programs and provides 30-day payment terms to help preserve liquidity in small-business MBEs so they can not only survive, but flourish.

3. *Are you the recipient of government broadband grants or other subsidies? If yes, can you describe the programs and the utilization level of Black, Hispanic, Asian, and women-owned companies in fulfilling the program requirements?*

Response:
Respondents were reluctant to disclose this information for part one or part two, although all the respondents are recipients of government grants and subsidies according to public records. One respondent stated that it is a recipient of the Rural Digital Opportunity Fund. None of the respondents

shared utilization level *of Black, Hispanic, Asian, and women-owned companies in fulfilling the program requirements?*

4. *What are some of the areas in your company where diverse suppliers are utilized the most in your infrastructure rollouts, such as site acquisitions, new tower builds and upgrades, permitting, rights of way, site inspections, and deinstallations and 5G densification*

Response:
One responded stated it does not track diverse supplier utilization related to infrastructure rollouts. Conversely, another respondent uses diverse suppliers in all the identified areas. While other respondents did not disclose the requested information. Conversely, one respondent uses diverse suppliers in all of the areas, in addition to Business Services, Engineering, Accounting, Research, Management, Industrial and Commercial Machinery and Computer Equipment, Electronic, Electrical Equipment & Components, and Durable Goods.

5. *Overall, what is your company's percentage levels of infrastructure spends with diverse suppliers in these areas? Can you specify by Black, Hispanic, Asian, and women-owned companies?*

Response:
Although one company would not give specific spend levels, it reported that diverse suppliers in all the areas were recipients of procurement opportunities. Another respondent reported spending over $50 billion over 10 years across all categories, including network infrastructure. It was also responded that some diverse spend records are filed with the California Public Utilities Commission (CPUC).

6. *In the future, are there other areas in your company's infrastructure business that you want to increase the utilization level of diverse suppliers? If yes, what are the areas?*

Response:
Generally, companies chose not to disclose this information. Although one responded stated a desire to increase utilization in the infrastructure rollout areas previously identified in question #4. Another respondent noted it is consistently pinpointing minority vendors for opportunities to fulfill commercial needs throughout all levels of the company

7. *What do you consider the greatest challenges to increasing your company's level of diverse suppliers in infrastructure requirements?*

Response:
Of the companies responding, one noted that spend level overall vary from year to year and impacts proportionate spends with diverse suppliers. The acquisition and mergers of diverse suppliers often alters the size standards of a small business, and M&As often create a minor ownership position for the diverse business owner. As company requirement needs become more robust, companies state that the capacity of diverse suppliers to adjust to the demand for their services does not keep pace. Capacity building was regarded as the greatest challenge. However, procurement of communications equipment remains a challenge for the industry specifically in the manufacturing and sale of handset and SIMs.

8. *What resources, approaches, or methods at your disposal can ameliorate these challenges*?

Response:
It is suggested that companies should work with third party agencies. Diverse suppliers should make their services known and engage with company team members. Other approaches include encouraging diverse suppliers to follow corporate web pages, enter business profiles info in the buyers' data bases, connect at corporate sponsored events such as conferences, trade shows, and other professional events. Mergers and acquisition strategies for diverse suppliers is one method to increase the capacity of these companies. The company leveraged its technology-aimed solutions to host and participate in countless virtual meetings, panels, and events that were dedicated to increasing supplier diversity within the company and the industry. One such program provides expansive original educational content for entrepreneurs and small businesses and is specifically designed with Black-owned small businesses in mind. The company also offers regular workshops and educational learning opportunities for small businesses, such as an upcoming series about marketing and using social media platform for marketing, public engagement, and contract fulfillment.

Preliminary List of Federally Funded Broadband Programs

Federal Communications Commission

5G Fund for Rural America
"The 5G Fund will use multi-round reverse auctions in two phases to target support from the Commission's Universal Service Fund to eligible areas based upon the improved mobile broadband coverage data gathered in the Commission's Digital Opportunity Data Collection proceeding."

Emergency Broadband Benefit Program
$3.2 billion federal initiative to help lower the cost of high-speed internet for eligible households during the on-going COVID-19 pandemic. The Emergency Broadband Benefit Program was created by Congress in the Consolidated Appropriations Act of 2021.

Rural Digital Opportunity Fund
Builds on the 2018's Connect America Fund (CAF) Phase II auction, which allocated $1.488 billion to deploy networks serving more than 700,000 unserved rural homes and businesses across 45 states. The Rural Digital Opportunity Fund will provide up to $20.4 billion to connect millions more rural homes and small businesses to high-speed broadband networks.

U.S. Department of Agriculture

Community Connect Grant Program
The Community Connect program helps fund broadband deployment in rural communities where it is not yet economically viable for private-sector providers to deliver service. The grants offer financial assistance to eligible service providers that will construct, improve, or expand broadband networks in rural areas.

Rural Broadband Access Loan and Loan Guarantee Program (Broadband Program)
The Rural Broadband Access Loan and Loan Guarantee Program (Broadband Program) furnishes loans and loan guarantees to provide funds for the costs of construction, improvement, or acquisition of facilities and equipment needed to provide service at the broadband lending speed in eligible rural areas.

Telecom Infrastructure Loan Program
This program provides financing for the construction, maintenance, improvement and expansion of telephone service and broadband in rural areas.

Distance Learning Telemedicine (DLT) Grant Program

The Distance Learning and Telemedicine program helps rural communities use the unique capabilities of telecommunications to connect to each other and to the world, overcoming the effects of remoteness and low population density.

[Connect America Fund](#)
"The ReConnect Program offers unique federal financing and funding options in the form of loans, grants, and loan/grant combinations to facilitate broadband deployment in areas of rural America that don't currently have sufficient access to broadband, defined by the law as 10 Mbps (megabits per second) downstream and 1 Mbps upstream."

U.S. Department of Labor

Workforce Development in Telecommunication Sector: Apprenticeship Investments in Support of Broadband and 5G
The Telecommunications Industry Registered Apprenticeship Program ("TIRAP") is a joint venture of telecommunications companies, industry associations and the U.S. Department of Labor that develops credentialed apprenticeship programs available to qualified employers for career development of the telecommunications workforce.

U.S. Department of Commerce (NTIA)

Tribal Broadband Connectivity Program

A $1 billion program directed to tribal governments to be used for broadband deployment on tribal lands, as well as for telehealth, distance learning, broadband affordability, and digital inclusion.

Broadband Infrastructure Program

A $300 million broadband deployment program directed to partnerships between a state, or one or more political subdivisions of a state, and providers of fixed broadband service to support broadband infrastructure deployment to areas lacking broadband, especially rural areas.

Connecting Minority Communities Pilot Program

 A $285 million grant program to Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and Minority-Serving Institutions (MSIs) for the purchase of broadband internet access service and eligible equipment or to hire and train information technology personnel.

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