BROADBAND EXPANSION IN RURAL INDIANA: CONFLICTING FEDERAL AND STATE POLICIES DELAY INTERNET ACCESS FOR MANY HOOSIERS

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INTRODUCTION

Broadband access is a critical necessity in the modern world and is something every Hoosier resident should have access to, no matter where they live. Indiana has made great strides in ensuring that every resident has access to broadband internet, but there are still many legislative improvements that can be made to the broadband grant programs to best utilize the unprecedented amount of taxpayer dollars available. By (1) eliminating the denial of state grant funding for census blocks that were awarded federal dollars, (2) prioritizing funding for better mapping data, (3) redefining adequate broadband service to speeds of 100/100 Mbps, (4) allowing areas that lack 100/100 Mbps service to be eligible for state broadband funding, and (5) prioritizing funding projects with fiber technology, Indiana can ensure that all Hoosiers get timely access to adequate broadband services.

Rural communities in particular are being left behind as the digital divide widens. If it was not clear before, the COVID-19 pandemic has solidified the vital need for internet access for every person, regardless of where they live. Internet is essential for things like education, healthcare, and employment.[1] "[I]nternet connectivity . . . [is] a necessity, not a luxury."[2] Therefore, it is critical that broadband grant programs at the state and federal levels effectively and efficiently provide broadband service to rural Indiana.

To reach the goal of providing every Hoosier with access to high-speed internet, Indiana's leaders created the Next Level Connections Broadband Grant

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1. ALISON GRANT ET AL., PURDUE UNIV. CTR. FOR REG'L DEV., RESEARCH & POLICY INSIGHTS: ESTIMATION OF THE NET BENEFITS OF INDIANA STATEWIDE ADOPTION OF RURAL BROADBAND 5-6 (Aug. 2018), *available at* https://pcrd.purdue.edu/wp-content/uploads/2018/12/006-RPINsights-Indiana-Broadband-Study.pdf [https://perma.cc/U3GA-BPHK].

2. Adam Edgerton & Peter Cookson, *Closing the Digital Divide: The Critical Role of the Federal Government*, LEARNING POL'Y INST. (Nov. 10, 2020), https://learningpolicyinstitute.org/blog/covid-closing-digital-divide-federal-government [https://perma.cc/N5EM-GVCS].

Program ("NLC").[3] "The [NLC] . . . is designed to provide funds for the deployment of broadband infrastructure to provide eligible broadband service to unserved end users, which include households, businesses and community anchor institutions, such as schools and health clinics, across Indiana."[4] Eligible areas for NLC funds are any areas without access to the minimum broadband speeds of 25/3 Mbps (25/3 Mbps refers to twenty-five megabits per second download speed and three megabits per second upload speed).[5] However, NLC funds cannot be awarded to any area where federal funds have been awarded.[6]

At the federal level, the Federal Communications Commission (FCC) established the Rural Digital Opportunity Fund (RDOF) on January 30, 2020.[7] RDOF represents the Commission's largest step towards closing the digital divide and connecting rural Americans with high-speed internet.[8] RDOF provides up to $20.4 billion in a reverse auction to eligible areas that do not have a minimum speed of 25/3 Mbps.[9]

While both grant programs are well-intentioned, there are conflicting policies that will ultimately create several challenges to meeting the end goal of serving rural Hoosiers, schools, and health clinics with adequate broadband service. Many winners of the RDOF auction are already defaulting or being disqualified.[10] So, the NLC program's exclusion of any addresses that were awarded federal dollars is effectively making the almost 153,000 locations awarded in Indiana ineligible for any state funds for a minimum of six years, regardless of whether the projects are actually built out or not.[11] Removing the exclusion of addresses awarded grant dollars under the federal programs is essential to meeting the critical goal of providing Hoosiers with qualified broadband access.

The defaulting RDOF winners are creating a gap in broadband service that

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3. *Next Level Connections Broadband Program*, Ind. Off. of Cmty. & Rural Affs., https://www.in.gov/ocra/nlc/ [https://perma.cc/7N3Z-WWYH] (last visited Mar. 10, 2022).

4. *Id.*

5. *Id.*

6. *Program Requirements*, Ind. Off. of Cmty. & Rural Affs., https://www.in.gov/ocra/nlc/home/nlc-faq/ [https://perma.cc/VT63-NBPJ] (last visited Jan. 12, 2023).

7. Fed. Commc'ns Comm'n, In the Matter of Rural Digital Opportunity Fund Connect America Fund 2 (2020), https://ecfsapi.fcc.gov/file/02070806418528/FCC-20-5A1.pdf [https://perma.cc/2SFZ-YUPY].

8. *Id.*

9. *Id.* at 3.

10. Stephen Hardy, *FCC Nixes Some RDOF Recipients, Questions 197 Others*, Broadband Tech. Rep. (July 28, 2021), https://www.broadbandtechreport.com/fiber/article/14207620/fcc-nixes-some-rdof-recipients-questions-197-others?utm_source=BTR%20Networking&utm_medium=email&utm_campaign=CPS210729025&o_eid=0358G3600990E9E&rdx.ident%5Bpull%5D=omeda%7C0358G3600990E9E&oly_enc_id=0358G3600990E9E [https://perma.cc/JT2J-ZU2V].

11. *Next Level Connections Broadband Program, supra* note 3; Fed. Commc'ns Comm'n, Attachment B, Auction 904 Winning Bidders (Dec. 7, 2020), *available at* https://www.fcc.gov/document/auction-904-winning-bidders/attachment-b [https://perma.cc/77XG-HYW6] [hereinafter Attachment B, Auction 904].

needs to be filled. This gap, combined with the existing inaccurate maps, and poor speed standards are all problems that need further analysis and redress in state statutes. The demand for internet access in rural Indiana is great and one that must often be balanced with concerns of overbuilding and best use of taxpayer dollars.

The importance and urgency of this has never been more present. In November 2021, President Biden signed the bipartisan Infrastructure Investment and Jobs Act into law, creating the single largest broadband funding program, the Broadband Equity Access and Deployment (BEAD) program.[12] The BEAD program will provide $42.5 billion for broadband deployment; each state is guaranteed $100 million and additional funds will be allocated by formula based on new FCC maps.[13] With an influx of hundreds of millions of dollars into the state from BEAD funding for further broadband deployment, it is absolutely essential that the state program is set up in the best way to distribute those funds and make the most of this historic opportunity.

This Note provides an overview of the digital divide crisis in Indiana. It highlights the impact of lack of internet on rural communities, the education system, healthcare, and economic development, including employment. This Note also provides an overview of the scope of the problem, including statistics on how many Hoosiers lack access to adequate and reliable internet service.

This Note then transitions to an overview and history of two grants programs with substantial impact in Indiana, the NLC and RDOF. This Note recaps phase I of RDOF and look into the future for phase II. It also recaps Round One and Round Two of the NLC and the changes legislated in 2021 for Round Three of NLC. Then, this Note reviews the creation of the BEAD program and the future funding opportunities BEAD will provide.

Next, this Note analyzes multiple deficits within the NLC program and offer five solutions to these deficits—these improvements will help make sure the BEAD funding has the greatest impact. The first issue is the exclusion of addresses from NLC eligibility that have been awarded federal funds. As many providers default on their RDOF wins, which are allotted six years for project completion, many Hoosiers will be left behind or in limbo for more than six years. The second issue is inaccuracies in current mapping data. The census block data collected by the FCC excludes many addresses who do not actually have access to service and limits lack of service to speeds of 25/3 Mbps, leaving many Hoosiers behind, again. The third issue is the definition of adequate broadband services as 25/3 Mbps. The world runs on internet, and faster speeds are required to perform needed functions of healthcare, education, and employment. The fourth and final issue is the kinds of technology grant programs fund and support.

12.   NAT'L RURAL ELEC. COOP. ASS'N, SUMMARY OF THE BROADBAND EQUITY, ACCESS AND DEPLOYMENT PROGRAM (BEAD) NOFO 1 (June 10, 2022), https://www.cooperative.com/programs-services/government-relations/regulatory-issues/Documents/Memorandum.BEAD.NOFO.Summary.06.10.2022.pdf [https://perma.cc/7XWL-63UL] [hereinafter SUMMARY OF THE BEAD NOFO].

13.   *Id.*

With multiple technologies available, it is important to ensure that taxpayer dollars are spent on the most efficient, cost-effective, and reliable technology available.

Finally, this Note proposes solutions to the identified issues through statutory reform to the NLC program. Legislative reform can allow Indiana to capitalize on the existing programs and funds in place to ensure that America's investment is made wisely—to best serve the most Hoosiers with reliable high-speed internet service.

I. OVERVIEW OF THE DIGITAL DIVIDE CRISIS IN INDIANA

A. Impact on Education, Healthcare, and Economic Development

There are many reasons why accessing the Internet is a necessity for modern life. However, there are three significant areas to consider: education, healthcare, and economic development. Education, healthcare, and economic development are critical aspects of not only an individual's happiness and success, but also of a flourishing community. "It is this high-speed, reliable and affordable connectivity that enhances community development, enables businesses to grow and equips Hoosiers with the necessary tools. Broadband has become essential for industries such as agriculture, healthcare and industries that rely on telecommuting."[14] Unfortunately, the current policies in place in the grant programs are not the most effective solutions to ensuring rural Hoosiers receive the access to broadband they desperately need for healthcare, education, and economic development.

First, consider healthcare; through broadband, healthcare providers can deliver care at a distance, thus creating more affordable access to care and the opportunity to build a healthier state.[15] Virtual healthcare reduces the time required to diagnose and treat patients, thereby improving health outcomes, and lowers expensive emergency room visits and transportation costs.[16] However, rural Hoosiers who lack access to reliable high-speed internet will be left behind, once again.[17] Barbara Scott, CEO of Aspire Indiana, stated,

> Prior to the pandemic, Aspire [a healthcare company] conducted an average of seven video appointments per day. Within two business days of Indiana's shelter-in-place order, we [Aspire] had increased that to 400 per day. Within a week it was 500 per day, and after 10 business days we [Aspire] averaged 725 daily video appointments.[18]

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14. *What Is Broadband*, IND. BROADBAND, https://www.in.gov/indianabroadband/broadband-is/what-is-broadband/ [https://perma.cc/5VNP-ZMMH] (last visited Mar. 10, 2022).

15. *Id.*

16. Nick Darrah, *Why Investing in Broadband in Indiana Will Transform Northeast Indiana's Economy, Competitiveness*, NE. IND. REG'L P'SHIP (Aug. 29, 2020), https://neindiana.com/blog/broadband-northeast-indiana [https://perma.cc/8LNH-BUBF].

17. *Id.*

18. *Id.*

Telehealth is only becoming more of an important aspect of healthcare in the post-pandemic age. Rural Hoosiers cannot be continually left behind, especially when it comes to healthcare access.

Internet access is also critical for education because broadband provides students with the ability to engage in e-learning. In the wake of the pandemic, "[m]any schools have designated eLearning days, or . . . utilize eLearning during times when school cannot be in session . . . ."[19] The COVID-19 pandemic made e-learning essential as virtually every school system in the state was forced to adopt some form of distance learning at the end of the last academic year, with most continuing e-learning options today.[20] A study released by Ball State University in the summer of 2020 "identified as many as 81,118 school-aged Hoosiers who lack any internet access. This number doesn't reflect the many more Hoosier households with unreliable or insufficient internet speeds."[21] And lack of internet access does not just disadvantage school-age children, but also adults who wish to pursue higher education. Many adult Hoosiers are seeking educational opportunities to improve their competitiveness in the job market or change careers in the wake of the pandemic.[22] Thus, without access to reliable high-speed internet, rural Hoosier children and adults are once again being left behind and increasingly disadvantaged.

Finally, internet access is crucial for employment and economic development. Telecommuting is becoming the norm for many businesses.[23] The ability to work from home when necessary is a widely recognized benefit in today's world, and broadband access makes that possible.[24] "A June 2020 survey . . . found that 83% of office workers want to work from home at least one day a week and 55% of employers anticipate that more of their workers will do so" in the future.[25] Additionally, sites like eBay and Craigslist have become common sources of income for some Americans.[26] "[A] study by AC Neilson indicated that more than 1.5 million Americans supplement their income each year by selling products through eBay."[27]

"COVID-19 has created long-lasting shifts in the workplace. Without access to reliable high-speed internet, rural communities will not be able to compete in

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19. *What Is Broadband, supra* note 14.

20. Darrah, *supra* note 16.

21. *Id.*

22. *Id.*

23. *What Is Broadband, supra* note 14.

24. *Id.*

25. Darrah, *supra* note 16.

26. Brian Whitacre et al., *Rural Broadband Success Story: Sallisaw – A Fiber Optic Network for the Ages*, OKLA. STATE UNIV. (Apr. 2017), https://extension.okstate.edu/fact-sheets/rural-broadband-success-story-sallisaw-a-fiber-optic-network-for-the-ages.html [https://perma.cc/TZ4E-SUZ5].

27. *Id.*

a post-COVID-19 . . . environment . . . ."[28] Alison Bell, Chancellor of WGU Indiana, stated a "lack of access to broadband services is a barrier to Hoosiers seeking to fulfill their potential and to contribute [to] the growth of the state's future workforce."[29] Furthermore, a lack of fast internet access has caused many complications for Hoosier parents who have transitioned to working from home in order to assist their children with e-learning.[30] "The limited bandwidth available [in rural Indiana] drastically limits the ability of both parents and children to do their jobs and e-learning from home . . . ."[31]

The lack of internet access also limits economic development, entrepreneurship, and business growth.[32] Entrepreneurship is a "critical driver of economic growth," but it "is severely stifled by the lack of access to reliable . . . high-speed internet."[33] Broadband is "an essential infrastructure when it comes to [operating] a business. Without broadband, rural communities will miss out on . . . new jobs and increased incomes . . . ."[34] "Without reliable high-speed internet access, rural businesses are unable to function and Hoosiers who live in rural areas are unable to do their jobs . . . ."[35] Broadband opens new possibilities in which businesses of all shapes and sizes can thrive. Broadband gives business owners the connection they need to "make game-changing opportunities for their ventures."[36]

A key component of rural communities is often farming, and farmers desperately need broadband. "Farms could contribute billions more dollars to the U.S. economy with the help of precision agriculture technology, but this can't happen without more broadband, said experts during a National Telecommunications and Information Administration . . . ."[37] Like all aspects of modern society, agriculture is becoming an increasingly technology-driven field and farmers' access to high-speed, quality internet is "exceedingly important."[38] The economic impact farmers could make with access to high-speed internet not only to their rural communities but to America as a whole is significant.

Internet is a key driver of economic development in rural communities. A perfect example of this occurred in Sallisaw, a rural community in eastern

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28. Darrah, *supra* note 16.

29. *Id.*

30. *Id.*

31. *Id.*

32. *Id.*

33. *Id.*

34. *Id.*

35. *Id.*

36. *What Is Broadband*, *supra* note 14.

37. *The Future of Farming Relies on Internet Connectivity*, PURDUE UNIV. (Sept. 25, 2020), https://www.purdue.edu/research/features/stories/the-future-of-farming-relies-on-internet-connectivity/ [https://perma.cc/ZX67-EPRP].

38. Megan Nelson, *Farmers' Growing Reliance on Technology Highlights Need For Robust Digital Toolbox*, FARM BUREAU (Aug. 26, 2019), https://www.fb.org/market-intel/farmers-growing-reliance-on-technology-highlights-need-for-robust-digital-t [https://perma.cc/M82W-4NW3].

Oklahoma with a population of "approximately 8,000 residents."[39] Prior to 2005, the town had no internet connectivity.[40] The town leaders recognized the problem and banded together to solve it by creating a municipally-owned fiber system to provide internet for the residents and businesses in their community.[41] By 2017, the community had connected over 1,200 customers to the fiber optic network, with 755 subscriptions to internet service.[42] In that time, Sallisaw has seen a residential boom with a large jump in inquiries relating to the town and what the community has to offer.[43] Indiana has an opportunity to achieve the same economic development in its rural communities statewide, as well as have significant impacts in the critical life areas of education and healthcare, but not without changes to the current NLC policies.

B. Scope of the Problem: How Many Lack Internet

It is fairly established that the Internet is a critical need in modern life, so it is important to understand the scope of problem and just how many people lack access to minimum internet speeds. Hundreds of thousands, possibly millions, of people in Indiana lack reliable internet access to speeds of at least 25/3Mbps.[44] Estimates of how many Hoosiers lack broadband internet range from 261,000 to 4.1 million and the enormous difference is due to different agencies reporting different data.[45]

While lack of internet access can occur statewide in rural, urban, or suburban areas, it is primarily a rural problem. "[B]roadband adoption has not significantly increased for urban and suburban Americans . . . [but] rural residents have seen a . . . rise in home broadband . . . . Despite [this rise], rural residents are still less likely . . . to report having home broadband."[46] Further, "rural Americans have consistently lower levels of technology ownership than urbanites and lower broadband adoption than suburbanites."[47] Figure 1 below illustrates the percent of U.S. adults who say they have or own home broadband, smartphones, tablets, and desktop or laptop computers, separated by whether they reside in a rural,

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39. Whitacre et al., *supra* note 26.

40. *Id.*

41. *Id.*

42. *Id.*

43. *Id.*

44. Brittany Steff, *Digital Inclusion in a Time of Coronavirus: New Report Explores the State of Digital Access and Rural Internet in Indiana*, PURDUE UNIV. (Feb. 2, 2021), https://www.purdue.edu/newsroom/releases/2021/Q1/digital-inclusion-in-a-time-of-coronavirus-new-report-explores-the-state-of-digital-inclusion-and-rural-internet-in-indiana.html [https://perma.cc/7J9K-2LVC].

45. *Id.*

46. Emily A. Vogels, *Some Digital Divides Persist Between Rural, Urban and Suburban America*, PEW RSCH. CTR. (Aug. 19, 2021), https://www.pewresearch.org/fact-tank/2021/08/19/some-digital-divides-persist-between-rural-urban-and-suburban-america/ [https://perma.cc/YQ3E-QBHP].

47. *Id.*

suburban, or urban area.[48] This graph clearly highlights the disproportionate number of rural Americans without access to broadband.
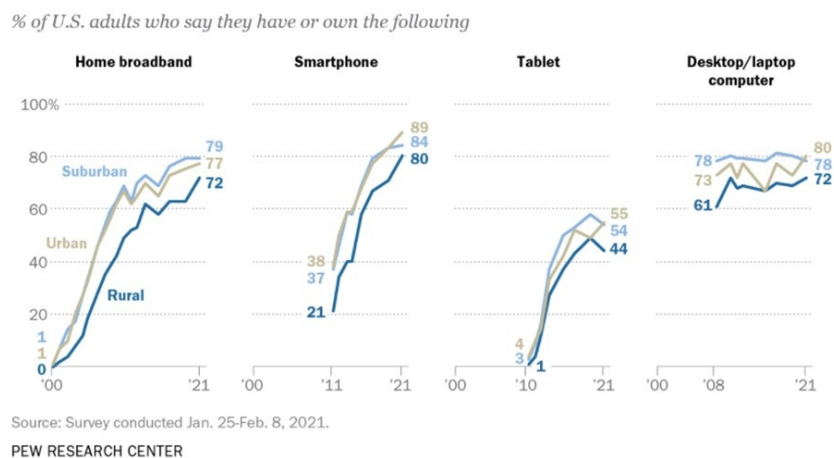

% of U.S. adults who say they have or own the following

Source: Survey conducted Jan. 25-Feb. 8, 2021.

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Figure 1[49]

It is important to note that broadband availability also disproportionately affects minorities.[50] According to a survey conducted in 2021, Black and Hispanic adults in the United States are less likely than White adults to have home broadband.[51] Figure 2 below highlights the racial and ethnic differences found in the 2021 survey.[52]
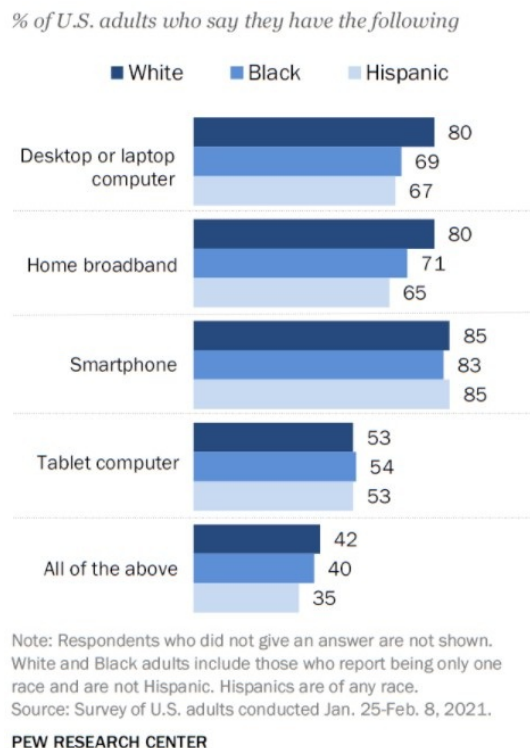
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48. *Id.*

49. Pew Research Center Survey Results (illustration), *in* Emily A. Vogels, *Some Digital Divides Persist Between Rural, Urban and Suburban America*, PEW RSCH. CTR. (Aug. 19, 2021), https://www.pewresearch.org/fact-tank/2021/08/19/some-digital-divides-persist-between-rural-urban-and-suburban-america/ [https://perma.cc/YQ3E-QBHP].

50. Sara Atske & Andrew Perrin, *Home Broadband Adoption, Computer Ownership Vary by Race, Ethnicity in the U.S.*, PEW RSCH. CTR. (July 16, 2021), https://www.pewresearch.org/fact-tank/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s/ [https://perma.cc/BQ5Q-389T].

51. *Id.*

52. *Id.*

% of U.S. adults who say they have the following

■ White ■ Black ■ Hispanic

	White	Black	Hispanic
Desktop or laptop computer	80	69	67
Home broadband	80	71	65
Smartphone	85	83	85
Tablet computer	53	54	53
All of the above	42	40	35

Note: Respondents who did not give an answer are not shown. White and Black adults include those who report being only one race and are not Hispanic. Hispanics are of any race.
Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.

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Figure 2[53]

All residents need access to broadband services. The lack of internet access has drastic impacts on communities faced with the digital divide. "The issue of digital inclusion includes the availability, accessibility and reliability of high-speed internet and digital devices. The gap between those who have easy, reliable, fast access to the internet and those who do not is the 'digital divide.'"[54] Whether the actual number is a quarter of a million Hoosiers or four million Hoosiers, having access to reliable, high-speed internet is a critical necessity for each and every Hoosier.

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53. *Pew Research Center Survey Results (illustration), in* Sara Atske & Andrew Perrin, *Home Broadband Adoption, Computer Ownership Vary by Race, Ethnicity in the U.S.*, PEW RSCH. CTR. (July 16, 2021), https://www.pewresearch.org/fact-tank/2021/07/16/home-broadband-adoption-computer-ownership-vary-by-race-ethnicity-in-the-u-s/ [https://perma.cc/BQ5Q-389T].

54. Steff, *supra* note 44.

II. BROADBAND GRANT PROGRAMS: OVERVIEW AND HISTORY

A. The Creation and History of RDOF

The Federal Communications Commission's Rural Digital Opportunity Fund (RDOF) is one the first and largest allocations of federal dollars for funding broadband projects and is the foundation for many states broadband grant programs.[55] "The [RDOF] broadband initiative is the single largest distribution of Universal Service Fund (USF) dollars made available to communications service providers in US history."[56] The USF is a fund put into place by the federal government to subsidize "rapid, efficient, nationwide communications service with adequate facilities at reasonable charges."[57] A substantial advantage of the RDOF program is that the funding comes from USF, and does not rely on legislative appropriations; the funds are present and set to be allocated.[58] RDOF will award $20.4 billion over ten years to help establish broadband networks for rural communities.[59] Eligible areas in rural communities include those lacking current or already funded access to "adequate" broadband service—adequate, as defined by the FCC, is 25 Mbps downstream and 3 Mbps upstream (25/3).[60]

In December of 2020, Phase I of the RDOF auction concluded.[61] One hundred and eighty bidders were awarded $9.2 billion over 10 years to provide internet to 5.2 million homes and businesses.[62] Eleven bidders were selected in Indiana, totaling an award of more than $169 million to serve 152,983 locations.[63] Winning bidders are required to reach all assigned locations within six years of the award.[64] Phase II of RDOF will award the remaining $11.2 billion—the question is when.[65] Phase II will not happen until the FCC completes the Broadband Data Collection (BDC) program and creates new broadband maps to

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55. RURAL DIGIT. OPPORTUNITY FUND, https://rdof.com/rdof [https://perma.cc/X8BM-23AV] (last visited Mar. 10, 2022) [hereinafter RDOF.COM].

56. *Id.*

57. *Universal Service Fund*, FED. COMMC'NS COMM'N, https://www.fcc.gov/general/universal-service-fund [https://perma.cc/A45H-NS4G] (last visited Mar. 10, 2022).

58. RDOF.COM, *supra* note 55.

59. *Id.*

60. *Id.*

61. *Rural Digital Opportunity Fund Phase I Results*, FED. COMMC'NS COMM'N, https://www.fcc.gov/reports-research/maps/rdof-phase-i-dec-2020/ [https://perma.cc/2NNF-DGRB] (Dec. 7, 2020).

62. *Id.*

63. Press Release, Fed. Commc'ns Comm'n, Successful Rural Digital Opportunity Fund Auction to Expand Broadband to Over 10 Million Rural Americans (Dec. 7, 2020), https://docs.fcc.gov/public/attachments/DOC-368588A1.pdf [https://perma.cc/7T56-3RS4].

64. *Rural Digital Opportunity Fund Phase I Results, supra* note 61.

65. *The Rural Digital Opportunity Fund: What's Up With the Wait for Phase II?*, CONNECTED NATION (Sept. 24, 2021), https://connectednation.org/blog/2021/09/24/the-rural-digital-opportunity-fund-whats-up-with-the-wait-for-phase-ii/ [https://perma.cc/6DYZ-J7E7].

guide eligibility.[66] It is currently projected to be late 2022 or early 2023 before any new FCC maps can be created and mid-to-late 2023 before Phase II can even begin.[67] With the start date likely at least a year away, at the earliest, and a six year timeframe for winners to provide service after that, it will likely be, at a minimum, seven years before any addresses could receive broadband from RDOF Phase II funding.[68]

B. The Creation and History of NLC

To complement the federal broadband programs, many states have also created independent programs with independent funding to address the issue of broadband access. In Indiana, at the state level, the Indiana legislature created the NLC Program to provide funds for the deployment of broadband infrastructure to unserved, those with access to less than speeds of 25/3 Mbps, end users, including households, businesses, schools, and health clinics across Indiana.[69] In November of 2019, NLC Round One awards were announced with $28.41 million awarded to fourteen projects.[70] The fourteen projects proposed service to 11,324 homes and businesses in eighteen predominately rural counties.[71] In September of 2020, NLC Round Two awards were announced with over $50 million awarded to forty-nine projects.[72] The forty-nine projects proposed service to 10,590 homes and businesses in thirty-two predominately rural counties.[73]

Round Three of the NLC program began accepting applications in August 2021 with a focus on new priorities set out by the legislature in the 2021 General Session by HEA 1449.[74] One of the several changes to the NLC program this bill introduced is the prioritization for public school buildings used for educating students, access points for all students, and rural health clinics.[75] Another substantial change is the ineligibility of any address which have or will receive funding for broadband speeds of at least 25/3 Mbps from the federal government, including RDOF.[76] There is $270 million available and awards are expected to be

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66. *Id.*

67. *Id.*

68. *See id.*

69. *Next Level Connections Broadband Program, supra* note 3.

70. *NLC 2019 Round 1 Awards*, IND. OFF. OF CMTY. & RURAL AFFS., https://www.in.gov/ocra/nlc/2019-round-1-awards/ [https://perma.cc/EQ2A-9NRB] (last visited Mar. 10, 2022).

71. *Id.*

72. *Id.*; *2020 Round 2 Awards*, IND. OFF. OF CMTY. & RURAL AFFS., https://www.in.gov/ocra/nlc/2020-round-2-awards/ [https://perma.cc/A4YA-8GTM] (last visited Mar. 10, 2022) (The number forty-nine is derived from the listing of applicants who will provide broadband service with fundings from Round Two).

73. *2020 Round 2 Awards, supra* note 72.

74. *Next Level Connections Broadband Program, supra* note 3; *see* H.R. 1449, 122nd Gen. Assemb., Reg. Sess. (Ind. 2021).

75. Ind. H.R. 1449, § 1.

76. *Id.* at § 6.

announced in April 2022.[77] Both the state and federal government have made significant strides in solving the rural broadband crisis, but there are still strides that need to be made. Without improvements to the policies in place, these funds will not be best used to get every Hoosier, hospital, and school access to internet.

C. The Creation and Future of BEAD

In November 2021, President Biden signed the bipartisan Infrastructure Investment and Jobs Act into law, which created the single largest broadband funding program, the Broadband Equity Access and Deployment (BEAD) program.[78] The BEAD program will provide $42.5 billion for broadband deployment.[79] "Funding will be overseen by the National Telecommunications Information Administration (NTIA) but given to states to award."[80] Each state is guaranteed a minimum of $100 million of funding and additional funds will be allocated by formula based on new FCC maps.[81] Areas with less than speeds of 100/20 Mbps are considered "underserved locations" and eligible for grant application.[82] All states were required to submit an application for initial planning funds by August 15, 2022.[83] Once funds are received, states have 270 days to submit a five-year action plan.[84] Funding amounts for each state will be announced after the completion of the new FCC broadband maps.[85] There is a historic amount of funding available in the BEAD program for states to distribute. Now is the time to reshape the NLC program to maximize the impact of those funds.

III. NLC Grant Program: Remaining Deficiencies and Proposed Solutions

This section analyzes multiple deficiencies within the NLC program and offers five solutions to these issues. These solutions will help ensure the greatest use and impact of dollars invested. The issues analyzed include (1) the exclusion of addresses from NLC eligibility that have been awarded federal funds, (2) inaccuracies in current mapping data, (3) the definition of adequate broadband services, and (4) the kinds of technology that grant programs fund and support. The solutions proposed seek to help Indiana capitalize on the existing programs and funds in place to better reach its goal of providing every rural Hoosier, school, and hospital with adequate broadband service.

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77. *Next Level Connections Broadband Program, supra* note 3.

78. SUMMARY OF THE BEAD NOFO, *supra* note 12, at 1.

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.*

83. *Id.*

84. *Id.* at 3.

85. *Id.*

A. Issue 1: Exclusion of Addresses Awarded RDOF Funds

1. Defaulting RDOF Winners and NLC Exclusion of Addresses.—While both grant programs are well-intentioned, there are conflicting policies and gaps that will ultimately create several challenges to meeting the end goal of serving rural Hoosiers, schools, and health clinics with adequate broadband service. Specifically, the NLC program's exclusion of any addresses that were awarded federal dollars is effectively making the almost 153,000 RDOF awarded locations ineligible for any Indiana state funding for a minimum of six years, regardless of whether the projects are actually built out or not.[86] Thousands of Hoosiers could potentially continue to go without internet access for at least six more years, despite their location being awarded grant funding. Not only is this alarming on its face, but it is especially alarming in light of the fact that many winners of the RDOF auction are already defaulting or being disqualified.[87] In the first seven months since awards were announced, "RDOF winners [have] already defaulted on $78 million in bids."[88] In June of 2022, an RDOF winner defaulted on more than $20 million, bringing the total defaulted amount to just under $100 million.[89] The list of expected census block defaults runs longer than 150 pages; each census block representing a residence or business that will continue to go without internet access.[90] Not only will these residences and businesses lose out on service from FCC funding, but these census blocks no longer being covered by RDOF are also ineligible for funding from other state, federal, and local programs.[91] As it is set up now, these rural communities are stuck.

2. Conflicting Social Policies: Providing Internet Quickly but Not Using State Dollars to Overbuild.—Many Hoosiers whose addresses were awarded RDOF funding are stuck as multiple providers default on their applications, but even

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86.   H.R. 1449, 122nd Gen. Assemb., Reg. Sess. (Ind. 2021); ATTACHMENT B, AUCTION 904, *supra* note 11.

87.   Hardy, *supra* note 10.

88.   Diana Goovaerts, *RDOF Winners Already Defaulted on $78M in Bids—Much More Could Follow*, FIERCE TELECOM (Aug. 4, 2021), https://www.fiercetelecom.com/regulatory/rdof-winners-already-defaulted-78m-bids-much-more-could-follow [https://perma.cc/C6BB-3E56].

89.   Public Notice, Fed. Commc'ns Comm'n, Rural Digital Opportunity Fund Support Authorized for 513 Winning Bids; Bid Defaults Announced (June 14, 2022), https://www.fcc.gov/document/auction-904-10th-authorization-public-notice   [https://perma.cc/75AF-K953]. Attachment B, accessible in the link above, lists the defaults for Conexon Connect LLC, which added together equal just over $20 million. Adding this number to the above-mentioned $78 million accounts for just under $100 million.

90.   Joan Engebretson, *FCC Ready to Authorize More Smaller RDOF Winners, Gets Set for Defaults*, TELECOMPETITOR (Oct. 7, 2021), https://www.telecompetitor.com/fcc-ready-to-authorize-more-smaller-rdof-winners-gets-set-for-defaults/ [https://perma.cc/HP5J-QML2].

91.   Cathy Cash, *NRECA Asks FCC to Ensure RDOF Defaults Don't Leave Rural Areas Stranded*, NAT'L RURAL ELEC. COOP. ASS'N (Apr. 6, 2021), https://www.electric.coop/nreca-asks-fcc-to-ensure-rdof-defaults-dont-leave-rural-areas-stranded [https://perma.cc/2CNC-V5W8].

those who do not default are six years out from receiving internet service.[92] This is far too many people left without service for far too long. These complications and delays have many asking why the state legislature opted to include the exclusion of addresses in the NLC state program in the first place. The main reason often cited as an explanation for precautions such as the exclusion of any addresses awarded federal dollars is overbuilding.[93] Overbuilding is the construction of broadband infrastructure in locations where there was already access to reliable broadband.[94] Many elected officials, legislators, members of the public, and broadband entities share a similar view that broadband access should be provided to those who need it the most, those without any access to reliable broadband.[95] Many also believe that federal or state aid should be limited and taxpayer dollars should be carefully spent and not "wasted" on areas that already have broadband access.[96] The concern rests on the view that permitting overbuilding will divert scarce funds from unserved areas that most need them.[97]

Additionally, most broadband corporations view federal or state funded grants for areas with adequate broadband service already in place as unfair competition in a private sector.[98] Arguments have been made against federal subsidies for broadband, claiming they promote overbuilding and "imped[e] private sector broadband efforts and potentially threatening the viability of smaller or mid-sized companies."[99] It has also been argued that funding broadband projects that overbuild service is dangerous because it allows companies to "cannibalize [the company's] service areas, steal the biggest and most lucrative clients around, and jeopardize [the company's] ability to serve remaining consumers."[100]

With the concerns of overbuilding in mind, the question then becomes how to assure the people without internet access receive it, quickly, but without wasting taxpayer dollars or creating unfair competition. As previously noted,

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92. *See supra* text accompanying notes 67-68.

93. *See, e.g.*, Press Release, Sen. John Thune, Thune: Effective and Efficient Broadband Investments are Critical for Rural America (Aug. 5, 2021), https://www.thune.senate.gov/public/index.cfm/press-releases?ID=C286BCCF-EF7D-4831-981D-763B0BA1C96D [https://perma.cc/669B-FFAK].

94. *Id.*

95. *Id.*

96. John Stephenson, *If Broadband Ain't Broken, Don't Fix it with Overbuilding*, AM. LEG. EXCH. COUNCIL (Mar. 5, 2013), https://www.alec.org/article/if-broadband-aint-broken-dont-fix-it-with-overbuilding [https://perma.cc/Y58K-MMS9].

97. John Eggerton, *FCC's O'Rielly Vows to Keep Fighting Overbuilding*, MULTICHANNEL NEWS (Apr. 15, 2019), https://www.nexttv.com/news/fccs-orielly-vows-to-keep-fighting-overbuilding [https://perma.cc/67YJ-JAFF].

98. Stephenson, *supra* note 96.

99. Sean Gonsalves, *Beltway Pols Worry About "Overbuilding" in Underbuilt Market*, INSTIT. FOR LOCAL SELF RELIANCE (May 19, 2021), https://muninetworks.org/content/beltway-pols-worry-about-overbuilding-underbuilt-market [https://perma.cc/SGT9-GQXC].

100. Eggerton, *supra* note 97.

"overbuilding" is an engineering term used to describe additional building where infrastructure already exists; but, as John Sallet, former FCC General Counsel and Deputy Assistant Attorney General points out, "[t]here is a tendency to call the construction of new, competitive networks in a locality with an existing network 'overbuilding'—as if it were an unnecessary thing, a useless piece of engineering."[101] Sallet goes on to argue that what is referred to as "overbuilding" should really be called competition.[102] Calling it competition shifts the focus from counting the number of broadband networks in an area to counting the dollars that customers save when they have choices.[103] While the priority should remain on areas without access to broadband services, perhaps the risk of overbuilding is not as detrimental as initial perception would seem to indicate.

Furthermore, Indiana's legislature has already built in mechanisms to guard against subsidizing overbuilding.[104] Each round of the NLC has included a challenge process to prevent funding overbuilding.[105] The challenge process occurs between the submission of letters of intent (where companies submit a list of addresses they propose to serve if they receive the funding requested) and the deadline for full applications.[106] Essentially, the challenge phase is an opportunity for other companies to review an address a company has proposed to serve and "challenge" that the address is already served.[107] If the challenge is successful, it cannot be considered in the full application.[108] In this way, Indiana has already set up sufficient processes to prevent overbuilding from occurring, thus locations that have been awarded federal funding, but as of yet have not received service, should remain eligible for state NLC funds.

Additionally, it is essential to consider whether the need for reliable internet access outweighs the concerns of overbuilding entirely. The inherent need for internet access is clear—people in rural Indiana need broadband services for education, healthcare, and employment.[109] Internet is not a luxury but a necessity. And, as the pandemic has clearly illustrated, time is of the essence. Nothing is stable or consistent in a world burdened by a pandemic, and after two years of this "new normal," those without internet access are in desperate need for it, immediately.[110]   However, "[b]ecause RDOF winners are only obligated to

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101.   Gonsalves, *supra* note 99.

102.   *Id.*

103.   *Id.*

104.   *See* Roslyn Layton, *12 Pillars of State and Local Broadband Policy Success*, FORBES (Dec. 13, 2021, 8:43 AM), https://www.forbes.com/sites/roslynlayton/2021/12/13/12-pillars-of-state-and-local-broadband-policy-success/?sh=3099bcec7770 [https://perma.cc/RL6L-7TDV].

105.   *Id.*

106.   *Next Level Connections Broadband Program, supra* note 3.

107.   *See generally* IND. OFF. OF CMTY. & RURAL AFFS., BROADBAND GRANT PROGRAM: CHALLENGE PHASE, *available at* https://www.in.gov/ocra/nlc/files/Challenge_Phase_Instructions_Round-3_11_19_21.pdf [https://perma.cc/ZF7A-C4JZ] (last visited Dec. 28, 2022).

108.   *Id.*

109.   *What Is Broadband , supra* note 14.

110.   Kathryn de Wit, *Who's Not Online in America Today?*, THE PEW CHARITABLE TRS. (May

complete 40 percent of their build-out by the end of the third year of funding, it may be years before a community can determine whether an awardee will deliver as promised."[111] Additionally, "[i]f an auction winner does not deliver on its commitments, it is unclear when those awarded areas will be eligible for additional federal funding."[112] In a time when it is quite clear that internet access is a necessity, the uncertainty of a multi-year (six years and more) delay for internet access is unacceptable. Broadband is a present need, not a future need. Overbuilding concerns are resolvable through the challenge process that is currently in place. If the policy of excluding addresses already awarded federal grant dollars were eliminated, the critical goal of providing Hoosier residents, hospitals, and schools with desperately needed broadband service would be much easier to meet.

3. Solution: Elimination of Denial of Addresses Awarded RDOF Funds.— Eliminating the exclusion of census blocks that were awarded federal dollars from NLC eligibility will greatly aid in meeting the goal of quickly providing rural Hoosiers with internet access. It is immensely important to get people internet access as quickly as possible; it is intolerable to deny 153,000 locations eligibility simply because they *might* receive service in the next six years from a provider that received a federal grant, especially in light of the multitude of providers already defaulting on their commitments. Mechanisms are already in place to prevent overbuilding, and so the priority must be on the timeliness of getting internet into the rural parts of Indiana where it is desperately needed.

B. Issue 2: Inaccurate Mapping Data

1. Discrepancies in Mapping Data and the Problems It Causes.—As previously mentioned, estimates of how many Hoosiers lack broadband internet vary wildly due to different agencies reporting different data.[113] Organizations such as the FCC and Microsoft both track internet usage and speed by location, but their respective data does not match and is typically over two years old.[114] The result is that, in 2019, the FCC reported about 261,000 Indiana residents who lacked access to internet meeting the minimum speed standard of 25/3 Mbps, while Microsoft found that 4.1 million Hoosiers—a significant portion of the 6.7 million total population—lacked access to internet that met this standard.[115]

Despite this disparity, the FCC has only used its own data to create the

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29,   2020),   https://www.pewtrusts.org/en/research-and-analysis/articles/2020/05/29/whos-not-online-in-america-today [https://perma.cc/9Z4J-76TL].

111.   Ziggy Rivkin-Fish, *FCC's Rural Digital Opportunity Fund Auction Was Supposed to Significantly Reduce America's Rural Broadband Gap*, BENTON INST. FOR BROADBAND & SOC'Y (Dec. 21, 2020),   https://www.benton.org/blog/fccs-rural-digital-opportunity-fund-auction-was-supposed-significantly-reduce-americas-rural [https://perma.cc/Z66D-ACAH].

112.   *Id.*

113.   Steff, *supra* note 44.

114.   *Id.*

115.   *Id.*

statewide maps that both the state (NLC) and federal (RDOF) broadband programs use to determine eligibility for funding.[116] Thus, there are millions of Hoosiers currently ineligible to receive grant funding due to inaccurate mapping data. To address the issue, stakeholders, scientists, and policymakers need to first have access to reliable data.[117] Without better data, stakeholders, scientists, and policymakers are unable to holistically assess the digital divide problem or begin solving the problem.[118] Accurate maps cannot be created without accurate data.

Furthermore, the current FCC maps operate on census block data, which is 1,000 households by census track.[119] This means that the FCC analyzes whether there is broadband service of at least 25/3 Mbps available in a singular census block, not whether that service is available to every home within the census block.[120] The result is that an entire census block would be marked as having adequate broadband service based on just a single household with access to satisfactory internet, rendering every other address within the block that lacks internet access ineligible for any future funding. It would be much more prudent to have maps based on address-level data because every American counts and no one should be left behind simply because they had the misfortune of being grouped into a census block where others have broadband service.

Any effort to improve either the state or federal broadband grant programs will be futile without more accurate mapping data. This data would be the foundation of a more successful grant program because it ensures that all areas that need internet are eligible to receive it and that taxpayer dollars are spent efficiently. It all starts with better, more accurate maps.

2. Solution: Prioritize Funding for Better Maps.—Accurate maps are the basis of a successful grant program and should be prioritized. The actual number of unserved and underserved Hoosiers is unclear due to disparities and inaccuracies in poor mapping data. Funding should be allocated to collect better data on actual address-level internet availability in Indiana. Setting aside some funding to improve the maps would ensure that no Hoosier is left behind and would also help to eliminate any remaining concerns of overbuilding.

C. Issue 3: Defining "Adequate Broadband Service"

1. Minimum Speeds Needed for Proper Access to Education, Healthcare, and Employment.—While the ultimate goal of the grant programs is to provide rural Indiana with internet access, it is just as important that the internet provided by capable of the speeds necessary to perform critical functions. Broadband grant

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116. *See Rural Broadband*, Ind. Off. of Cmty. & Rural Affs., https://www.in.gov/ocra/additional-resources/rural-broadband/ [https://perma.cc/YNV6-6ZLE] (last visited Mar. 10, 2022).

117. Steff, *supra* note 44.

118. *Id.*

119. *Form 477 Census Tract Data on Internet Access Services*, Fed. Commc'ns Comm'n, https://www.fcc.gov/form-477-census-tract-data-internet-access-services [https://perma.cc/G5GL-5HNC] (last visited Mar. 10, 2022).

120. *See id.*

programs have multiple facets to consider in addition to what areas are eligible for funding, including the minimum speeds required for providers to bid for grant funds and prioritization of speeds that are more likely to win bids if providers can offer them. As previously mentioned, the FCC defines qualified broadband speeds as 25/3 Mbps.[121] This standard came into effect in 2015 as an increase from the previous standard of 4/1Mbps.[122] The increase was justified as "necessary due to 'advances in technology, market offerings by broadband providers and consumer demand.'"[123] However, in context, this benchmark is absurd. A recent survey showed that the median American considers 50/5 Mbps as broadband, while twenty-nine percent of Americans consider 1000/1000 Mbps (Gigabit speed) as broadband.[124] In actuality, the ideal internet speed for most households is in the 100–200 Mbps range.[125] According to OpenVault, who "tracks broadband usage data across America" less than eighteen percent of broadband customers subscribe to internet services of 100 Mpbs or slower.[126]

The U.S. Department of Agriculture, which operates the $1 billion ReConnect program for rural broadband, recognized this reality and revised its definition of a "served" area to refer to those with access to broadband internet of at least 100/20 Mbps.[127] "This is significantly faster service than what previously qualified for funds and will help ensure that rural communities are not left behind with inferior internet service."[128] The program is also requiring providers to be capable of serving symmetrical speeds of 100/100 Mbps.[129] ReConnect has recognized what other programs have not, internet is needed, but not just any internet. 25/3 Mbps is not enough for the modern world.

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121. RDOF.COM, *supra* note 55.

122. Tyler Cooper, *The FCC Definition of Broadband: Analysis and History*, BROADBANDNOW (Nov. 2, 2021), https://broadbandnow.com/report/fcc-broadband-definition/ [https://perma.cc/N7LT-4YHS].

123. *Id.*

124. Roger Entner, *The Median American Considers 50/5 Mbps as Broadband*, FIERCE TELECOM (Dec. 7, 2021, 5:52 PM), https://www.fiercetelecom.com/broadband/median-american-considers-505-mbps-broadband-entner?mc_cid=436bfbb49f&mc_eid=2aa3198f50 [https://perma.cc/J388-8N3T].

125. Tyler Cooper, *How Much Internet Speed Do I Need?*, BROADBANDNOW (Oct. 20, 2021), https://broadbandnow.com/guides/how-much-internet-speed-do-i-need [https://perma.cc/PD3Y-P5Z9].

126. Bernie Arnason, *The Absurdity of Broadband . . . the Official Speed Definition That Is*, TELECOMPETITOR (Nov. 29, 2021), https://www.telecompetitor.com/the-absurdity-of-broadband-the-official-speed-definition-that-is/?utm_source=sendgrid&utm_medium=email&utm_campaign=Newsletters [https://perma.cc/32J8-2SH2].

127. Cathy Cash, *Round 3 of ReConnect Offers $1B for Rural Broadband with Improvements for Co-ops*, COOPERATIVE.COM (Oct. 25, 2021), https://www.cooperative.com/news/Pages/Round-3-of-ReConnect-Offers-1B-for-Rural-Broadband-With-Improvements-for-Co-ops.aspx [https://perma.cc/D5MQ-3JLJ].

128. *Id.*

129. *Id.*

Faster speeds are not just a nice thing to have but often a requirement for many programs and applications to run. This is especially true for areas Indiana has identified as priorities: telehealth, education, and employment, as these all typically require multiple programs running and often video conferencing. Even with internet access, without adequate speeds rural Hoosiers will continue to be left behind.

For example, a reliable and fast internet connection is central to any telehealth service.[130] Telehealth services typically require internet that can support things like video streaming and large file transmission. For telehealth to function, both the doctor and patient need to have access to adequate broadband connections.[131] Also, when it comes to education, the use of online learning tools, including web-based rich content (i.e., videos), interactive digital textbooks, e-books, and online assessments will continue to require more and more bandwidth.[132] And, people need faster internet to work from home or run small businesses; "[g]enerally speaking, each user should maintain speeds around 100 Mbps for business Internet connectivity. . . . Many companies will offer smaller packages, including 25, 50, and 75 Mbps, but given the need for speed in the modern business world, these may not be enough."[133] Thus, it is imperative that Indiana redefine adequate broadband service to provide the speeds Hoosiers actually need; 25/3 Mbps is simply not enough.

1. Solution 1: Redefine Adequate Speeds to 100/100 Mbps.—Adequate broadband service should be redefined to speeds of 100/100 Mbps. Internet access is needed for telehealth, education, and employment. It is important to have speeds capable of supporting the functions people need to perform. The State is already conscious of using taxpayer dollars efficiently and can do so better by only funding projects that can provide the speeds Hoosiers actually need.

2. Solution 2: Increase Eligibility Areas to Anywhere with Less than 100/100 Mbps.—The NLC should continue to prioritize applications to areas that lack access to at least 25/3 Mbps but should also allow areas without access to 100/100 Mbps to be eligible for state broadband funding. Unserved areas have been a priority focus for the Indiana legislature and should continue to be, but "underserved" areas should also be eligible for funding.[134] As previously discussed, anything with less than 100/100 Mbps is not sufficient internet speed

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130. Tyler Cooper, *Widespread Telehealth Adoption in Rural Communities Requires Widespread Broadband Availability*, BROADBANDNOW (Dec. 16, 2020), https://broadbandnow.com/report/telehealth-requires-broadband-availability/ [https://perma.cc/VH5B-KG6G].

131. *Id.*

132. Mary Burns, *The Bandwidth Schools Have and the Bandwidth They Need*, ELEARNING INDUS. (Nov. 10, 2014), https://elearningindustry.com/bandwidth-schools-bandwidth-need [https://perma.cc/C463-A8E9].

133. Tom Collins, *What Is a Good Internet Speed for Business in 2021?*, ATLANTECH ONLINE (Jan. 6, 2021), https://www.atlantech.net/blog/what-is-a-good-internet-speed-for-business [https://perma.cc/6WJJ-Q8MC].

134. *See Next Level Connections Broadband Program*, *supra* note 3.

for the things Hoosiers need.[135] Adjusting the eligibility to include anything less than 100/100 Mbps would model the NLC program after the federal ReConnect program and help more Hoosiers get access to the Internet they need for healthcare, education, and employment.[136]

D. Issue 4: Prioritization of State Dollars on the Most Efficient Technology

1. A Comparison of Available Broadband Technologies.—Like speeds, it is important that the State only fund the best broadband technology so communities do not find themselves without internet when an older or inefficient technology becomes too outdated or fails to keep up with modern demands. Broadband can be delivered through several technologies: fiber optic cable, copper telephone lines, cable modem, wireless, or satellite.[137] Although each technology has varying pros and cons, one of the newest emerging technologies is satellite services, which "can deliver services anywhere," such as Elon Musk's SpaceX's Starlink platform.[138] Satellite "could provide a 'stop-gap' solution" for those waiting on fiber service and should therefore be considered for state and federal grant funding.[139] On the other hand, satellite internet offers slower speeds, greater latency (the time it takes for data to be transferred from its source to destination), less reliability, and higher costs compared to other (fiber) technology.[140] The FCC recognized this and rejected the previously awarded RDOF winners, LTD Broadband and Starlink.[141] LTD Broadband applied to serve the awarded areas with fixed wireless and Starlink with low earth orbit satellite.[142] The FCC rejected more than $2 billion of awards because the Commission determined that the provider's applications failed to demonstrate delivery of the promised service and that the funding would not be the best use of funds to bring broadband to unserved areas.[143]

The other newest and arguably most popular technology is fiber optic cable,

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135. *See* discussion *supra* Section III.C.1.

136. *Id.*

137. *Rural Broadband, supra* note 116.

138. Charlie Taylor, *Government Urged to Give Satellite Grant to Those Unable to Get Fibre Broadband*, THE IRISH TIMES (July 7, 2021, 2:16 PM), https://www.irishtimes.com/business/technology/government-urged-to-give-satellite-grant-to-those-unable-to-get-fibre-broadband-1.4614037 [https://perma.cc/E66C-HWV6].

139. *Id.*

140. Katie Kienbaum, *Satellite Subsidies Will Widen Digital Divide in Rural America*, INST. FOR LOCAL SELF-RELIANCE (Jan. 14, 2020), https://muninetworks.org/content/satellite-subsidies-will-widen-digital-divide-rural-america [https://perma.cc/HB46-GBS2].

141. Press Release, Fed. Commc'ns Comm'n, FCC Rejects LTD Broadband, Starlink Bids for Broadband Subsidies (August 10, 2022), https://www.fcc.gov/document/fcc-rejects-ltd-broadband-starlink-bids-broadband-subsidies [https://perma.cc/MMH4-GX24].

142. *Id.*

143. *Id.*

or fiber-to-the-home service.[144] The Fiber Broadband Association (FBA) recently released research quantifying the advantages of fiber technology.[145] It was found that fiber has the lowest cost per megabit at $0.66 per Mbps whereas other technologies range from $1.00 to $6.00.[146] Fiber has also received the highest satisfaction ratings from consumers with an average net promoter score (NPS) of 20, while other broadband technologies scored between -5 to -45.[147] Additionally, fiber technology had the highest reliability, the highest speeds, and lowest latency.[148] Moreover, fiber internet is ten to twenty times faster than cable or satellite internet.[149] Fiber cables can handle more users and more data at consistently higher speeds.[150] Having a fiber-to-the-home connection "increases the value of homes by 3.4%, apartment rental prices by 8.1%, and apartment operating income by 15%."[151]

Providing internet for rural Hoosiers who are without is of top priority. But as previously mentioned, Indiana has a history of making it clear that it is a priority to be conscious of taxpayer dollars.[152] The best way to balance these interests and get the most reliable internet to the Hoosiers who desperately need it is to follow the FCC's lead, reject fixed wireless and satellite applications and instead prioritize funding fiber projects.

2. Solution: Prioritize Funding Fiber Technology Projects.—Projects that can provide fiber to the home technology should be prioritized. Fiber has the highest reliability with the lowest cost per megabit.[153] Reliability is a key piece in broadband considerations because the State identified priorities of healthcare, education, and employment, which require an internet service that is dependable and consistent.[154] State dollars should be used for the best technology to actually provide rural Hoosiers with the access they need and to prevent the need for future funding in several years.

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144. *See* Kienbaum, *supra* note 140.

145. Carl Weinschenk, *Broadband Superiority? FBA Makes the Case for Fiber Broadband*, TELECOMPETITOR (Nov. 16, 2021), https://www.telecompetitor.com/broadband-superiority-fba-makes-the-case-for-fiber-broadband/?mc_cid=810a23e361&mc_eid=2aa3198f50 [https://perma.cc/QYE2-2JWY].

146. *Id.*

147. *Id.*

148. *Id.*

149. Tom Gerencer, *Top 10 Advantages of Fiber Optic Internet Connections*, HP.COM (Apr. 21, 2020), https://www.hp.com/us-en/shop/tech-takes/top-10-advantages-fiber-optic-internet-connections [https://perma.cc/4MH4-4HTF].

150. *Id.*

151. Weinschenk, *supra* note 145.

152. S*ee* Stephenson, *supra* note 96.

153. *See* Weinschenk, *supra* note 145.

154. *See* discussion *supra* Section I.A.

IV. SUMMARY OF PROPOSALS

The solution to getting Hoosiers without internet access a broadband connection quickly, efficiently, and effectively is a multifaceted and complicated one. The state of Indiana and the federal government made broadband a priority and have taken great strides to solve the rural broadband crisis. This Note analyzed how to improve the way state dollars are used to fill the gaps and overcome the challenges in reaching the goal of getting rural Hoosiers, hospitals, and schools broadband access.

To maximize the impact of the historic BEAD investment and greatly aid the overall goal of getting Hoosiers reliable internet access, this Note proposes five solutions through statutory reform of the NLC program: (1) Eliminate the denial to state grant funding for census blocks that were awarded federal dollars, (2) prioritize funding for better mapping data, (3) redefine adequate broadband service to speeds of 100/100 Mbps, (4) allow areas that lack 100/100 Mbps to be eligible for state broadband funding, and (5) prioritize funding projects with fiber technology.[155] These solutions will set Indiana up for the best success to ensure that all Hoosiers get timely access to adequate broadband services. These solutions will also enable Indiana to ensure that no Hoosiers without internet access are left behind, that the provided Internet is able to perform needed functions, and that Indiana is investing in the best long-term solution.

CONCLUSION

The conflicting policies of the federal and state grant programs hinder the deployment of critical broadband service. The exclusion of any census blocks awarded federal dollars, whether currently served or unserved, is very detrimental to rural Hoosiers. With more than $370 million set aside for broadband deployment to rural Hoosiers, the Indiana legislature has an opportunity to build on its achievements and maximize state dollars to serve more people, quicker, with faster, more reliable internet.[156]

Indiana should eliminate the denial of addresses from eligibility that were awarded federal funds. The existing challenge process in place resolves the concern of overbuilding. Also, the risk of overbuilding is minimal compared to the benefits of quickly deploying internet to rural Hoosiers who desperately need it, especially to function in the "new normal" of a post pandemic society when it comes to telehealth, education, and employment.

Indiana should prioritize the creation of new maps with address level data. Both RDOF and NLC programs eligibility are based on the current FCC maps. As the Microsoft data highlighted, there are possibly millions of Hoosiers unaccounted for in the current eligibility maps. Also, the current maps are based on census block data, which is not an accurate representation of broadband availability for every Hoosier.[157] The current maps leave many residents,

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155. *See* discussion *supra* Part III.

156. *Next Level Connections Broadband Program, supra* note 3.

157. *See* Steff, *supra* note 44.

hospitals, schools, and businesses behind.

To make the most effective and efficient use of state dollars, Indiana should re-define "adequate broadband service" as 100/100 Mbps and the NLC should prioritize projects without 25/3 service but include eligibility for any locations with less than 100/100 Mbps.[158] The NLC should also prioritize awarding funding to projects with fiber technology. These conclusions are supported by the recent changes to the federal ReConnect program, the physical demands of applications necessary for telehealth, education, and employment, and the substantially higher reliability of fiber internet.[159] The demands for internet are only going to increase, and it is therefore in the best interest of society to spend tax dollars on technology that can support the most people for the foreseeable future.

The solutions argued for within this Note will capitalize upon the historic amount of taxpayer dollars allocated to provide broadband for Hoosiers. Additionally, these solutions will serve the most residents with the best, most reliable internet and ensure that America's investment is wisely spent. The solutions will also guarantee that no Hoosier is left behind or overlooked due to inaccuracies in data. Broadband is a critical necessity in the modern world, and it is vital that all people have access to high-speed, quality internet services, no matter where they live. Indiana has a great program in place and now is the time to maximize the funds available by adopting the proposed solutions within this Note.

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158. *See* discussion *supra* Section III.C.3.

159. *Id.*