LESSONS FROM WEST VIRGINIA: LEVERAGING LAW CLINICS TO FACILITATE BROADBAND INFRASTRUCTURE DEVELOPMENT

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Access to fast, reliable internet has become a mainstay of American life. Streaming services are quickly outbidding network (wired/cable) television for major sports programming like Thursday Night Football[1] and even vehicles are wired to act as internet hotspots.[2] Despite our increasingly connected world, access to high-speed internet is far from ubiquitous. Many low-income communities and rural communities are trapped in the digital divide—"the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities."[3]

A lack of physical infrastructure can serve as a huge underlying driver for the digital divide in rural communities.[4] Here, the term "Broadband infrastructure" refers to the physical infrastructure—the cables, utility poles, etc.—that compose the middle and last miles of the broadband system. In some rural communities, no physical fiber infrastructure exists.[5] Accordingly, these communities rely on slower technologies like dial-up internet or outdated copper systems.[6]

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1. Edward Sutelan, *Why Is NFL 'Thursday Night Football' Only on Amazon? How Streaming Giant Won Rights to Prime-Time Games for 11 Years*, SPORTING NEWS (Sept. 15, 2022), https://www.sportingnews.com/us/nfl/news/amazon-nfl-thursday-night-football-streaming/vwrdbages1omqsfucyypt0b7 [https://perma.cc/S7WY-ESHS].

2. Hearst Autos Rsch., *Cars with Wi-Fi: Everything You Need to Know*, CAR & DRIVER, https://www.caranddriver.com/research/a32814112/cars-with-wifi [https://perma.cc/A5PW-96WK] (last visited Feb. 12, 2023).

3. ORG. FOR ECON. COOP. & DEV., UNDERSTANDING THE DIGITAL DIVIDE 5 (2001), https://www.oecd.org/sti/1888451.pdf [https://perma.cc/R527-CJRR].

4. Sophia Campbell, Jimena Ruiz Castro & David Wessel, *The Benefits and Costs of Broadband Expansion*, BROOKINGS (Aug. 18, 2021), https://www.brookings.edu/blog/up-front/2021/08/18/the-benefits-and-costs-of-broadband-expansion [https://perma.cc/KPU5-B32Q] (emphasizing that urban households may have available infrastructure and face other obstacles, but rural households may lack infrastructure access all together).

5. *See e.g.*, Shelby Harris, *No Internet, No Telehealth: Rural North Carolina Residents Struggle to Connect with Doctors Virtually*, CAROLINA PUB. PRESS (Oct. 22, 2022), https://www.northcarolinahealthnews.org/2022/10/22/no-internet-no-telehealth [https://perma.cc/E5HG-WWGS] (explaining data from the North Carolina Department of Information Technology has shown only one in four mountain residents has access to fiber Broadband service).

6. Emily Allen, *Newly Revealed Data Shows Problems with Frontier's W.Va. Landline Phone System*, W. VA. PUB. BROAD. (Apr. 10, 2020, 5:32 PM), https://www.wvpublic.org/news/2020-04-10/newly-revealed-data-shows-problems-with-frontiers-w-va-landline-phone-system [https://perma.cc/F78W-56DV].

Communities need to invest in infrastructure development in order to ameliorate the digital divide, but the construction and operation of a complex broadband network is no small undertaking.

As communities navigate this process, clinical programs at law schools are poised to play an important role. At the early stages of development, communities and local governments need a great deal of education and capacity building. This Article outlines the work of two clinics at the West Virginia University College of Law and their work supporting Broadband infrastructure development in the state. The experience in West Virginia illustrates the role clinics can play in supporting infrastructure development. By working directly with rural communities on these complex projects, law students build important lawyering skills. Moreover, the opportunity to work directly with rural communities strengthens a student's compassion and commitment to rural places.

I. THE NEED FOR BROADBAND IN WEST VIRGINIA

West Virginia currently ranks 48th in the nation for broadband access[7], meaning the average household has less access to information and communication technologies compared to communities in other states. The digital divide refers not only to access to the internet, but access to reliable, high-speed service.[8] Many West Virginians may only have access to inferior lower speeds that make it difficult to access telehealth or remote education services.[9] Likewise, lower-speeds and connectivity issues can hurt small businesses that need consistent access and the ability to use a variety of online tools and programs to operate.[10]

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7. Lucas Manfield, *West Virginia Leaders Say Improving Internet Is a Top Priority. The Latest Numbers Show Access in the State Is Just Getting Worse*, MOUNTAIN STATE SPOTLIGHT (Feb. 16, 2021), https://mountainstatespotlight.org/2021/02/16/west-virginia-leaders-say-improving-internet-is-a-top-priority-the-latest-numbers-show-access-in-the-state-is-just-getting-worse [https://perma.cc/39PY-8YB4] ("[T]he percentage of West Virginia residents with a high-speed internet connection" dropped 0.2 percentage points to 82.2% and "is one of only five states that is sliding backward.").

8. *See generally* NAT'L TELECOMMS. INFO. ADMIN., AMERICAN BROADBAND INITIATIVE: MILESTONES REPORT 11 (2019), https://www.ntia.doc.gov/files/ntia/publications/american_broadband_initiative_milestones_report.pdf [https://perma.cc/ZFJ3-5RQN] (referencing the FCC defined broadband speeds of 25 Mbps and 3 Mbps upload speeds and noting most underserved individuals live in rural areas).

9. Joe Severino, *Telehealth Is Here to Stay. WV Doesn't Have The Broadband Capability to Support It*, HEARALD DISPATCH (Aug. 17, 2020), https://www.herald-dispatch.com/news/telehealth-is-here-to-stay-wv-doesnt-have-the-broadband-capability-to-support-it/article_0a685ab1-cdaa-56ed-8212-cc8e3ab3f562.html [https://perma.cc/8E8N-G8D6]; Kris Maher, *Remote Schooling Out of Reach for Many Students in West Virginia Without Internet*, WALL ST. J., (Sept. 13, 2020, 5:30 AM), https://www.wsj.com/articles/remote-schooling-out-of-reach-for-many-students-in-west-virginia-without-internet-11599989401 [https://perma.cc/RWJ4-RS6H].

10. W. VA. BROADBAND ENHANCEMENT COUNCIL, WEST VIRGINIA STATE BROADBAND PLAN

Like many rural communities, West Virginia is saddled with limited Broadband infrastructure, resulting in a dependence on outdated technology.[11] The costs of upgrading existing infrastructure to provide high-speed service requires significant expenditures. Private companies may determine the costs to be too onerous, particularly if they have a practical monopoly or duopoly with existing customers.[12] Moreover, the same private service providers are either unwilling or financially unable to develop new infrastructure and extend service to communities outside their current service areas.[13]

The dilemma faced by West Virginia is emblematic of many other Appalachian communities,[14] a region of the country noted for its hyper-rurality.[15]

2020–2025, at 2 (2019), https://broadband.wv.gov/wp-content/uploads/2020/01/West_Virginia_State_Broadband_Plan_2020-2025.pdf [https://perma.cc/FS98-YTF3] [hereinafter W.V. BROADBAND PLAN]; *see also* Lucas Manfield, *Bankruptcy, Blackouts, and Broken Broadband Promises*, MOUNTAIN STATE SPOTLIGHT (Sept. 17, 2020), https://mountainstatespotlight.org/2020/09/17/bankruptcy-blackouts-and-broken-promises/ [https://perma.cc/5RHQ-GCD6] ("Nearly 40% of small businesses reported inadequate internet service during the pandemic, according to a survey conducted by a coalition of West Virginia economic development organizations.").

11. Manfield, *supra* note 7. Reporting on the topic has demonstrated that West Virginia's dominant ISP, Frontier, operates an outdated copper network, providing slower DSL internet. *Id*. This problem is particularly egregious as the telecommunication giant received significant government funds and chose to expand outdated technologies outside the state rather than upgrade infrastructure within the state. *Id*.

12. W.V. BROADBAND PLAN, *supra* note 10, at 71 ("The State's low population density presents another challenge. The low population density in the rural, mountainous parts of the State means that there are few potential customers available to subscribe to broadband service, making it too costly for most ISPs to build in these areas without secondary funding."); *see also* Katie Kienbaum, *Near the Heart of Silicon Valley, a Community Failed by the Big Internet Providers Is Building Its Own Network*, INSTIT. FOR LOC. SELF-RELIANCE (Sept. 10, 2020), https://ilsr.org/near-the-heart-of-silicon-valley-a-community-failed-by-the-big-internet-providers-is-building-its-own-network/ [https://perma.cc/GC29-8YG9] (discussing other examples of communities experiencing poor service because of limited ISP options, noting the lack of competition in Los Altos Hills "means there's little incentive for providers to improve service quality, despite interest from subscribers."); Katie Kienbaum, *Rural Minnesotans Face "Corporate Indifference" of Internet Service Provider*, INSTIT. FOR LOC. SELF-RELIANCE (Oct. 4, 2018), https://ilsr.org/rural-minnesotans-face-corporate-indifference-of-internet-service-provider/ [https://perma.cc/65HU-ZSA4] (noting issues in rural Minnesota with the private ISP indifference); H. TROSTLE ET. AL., CMTY. NETWORKS & INST. FOR LOC. SELF-RELIANCE, PROFILES OF MONOPOLY: BIG CABLE AND TELECOM (2020), https://cdn.ilsr.org/wp-content/uploads/2020/08/2020_08_Profiles-of-Monopoly.pdf?_gl=1*dgptbw*_ga*ODQ3MjU2MzcyLjE2Njg1MzAyNTI.*_ga_M3134750WM*MTY2ODUzMzU5MS4yLjEuMTY2ODUzNDIwMi4wLjAuMA..&_ga=2.2663609.862441991.1668530252-847256372.1668530252 [https://perma.cc/YST7-BL8W].

13. W.V. BROADBAND PLAN, *supra* note 10, at 73, ("If there is no pre-existing infrastructure, this can pose an enormous barrier to any ISP interested in bringing service to an unserved area . . . .").

14. *See* Priya Baskaran, *The Economic Justice Imperative for Lawyers in Trump Country*, 7 TENN. J. RACE, GENDER & SOC. JUST. 161 (2018). West Virginia is the only State entirely contained

Appalachian communities often experience lower densities and higher poverty rates than non-Appalachian communities in the same state.[16] The geographic isolation of Appalachian communities has led to challenges in providing adequate investment in the region, making it difficult for denizens to access resources, programs, and services more readily available in other places.[17]

The centrality of broadband access as a catalyst of economic growth and development in modern society underscores the importance of investing in the development of high-speed internet systems. Yet the absence of private sector investment necessitated more active participation from local governments and community stakeholders. Communities in West Virginia, confronted with indifference from existing private companies, began the long and arduous process of advocating for community-owned infrastructure to mitigate the digital divide.

II. THE LIMITATIONS OF THE LEGAL LANDSCAPE FOR BROADBAND

In April 2017, the movement to increase broadband access in West Virginia gained state-wide attention and traction. Despite an incredibly contentious process, the state legislature passed a historic bill—HB3093—enabling the creation of locally owned broadband systems.[18] The bill authorized two types of locally owned broadband developments. First, it enabled community members to form a brand-new type of entity—broadband cooperative associations ("broadband cooperatives"). These broadband cooperatives could pursue funding to plan, develop, and operate community-owned systems.[19] Second, the legislation also authorized a limited number of local government "pilot projects" empowering local governments to create their own networks.[20] This was an important addition as the existing statutory regime in West Virginia did not grant local governments the power to build, own, or operate broadband networks.[21]

The desire for broadband was an outgrowth of the deep seeded need for greater economic and social reinvestment in the state. For example, the State was

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within Appalachia. *See id*. at 166.

15. *See generally* APPALACHIAN REGIONAL COMMISSION, https://www.arc.gov/ [https://perma.cc/TXU9-XS65] (last visited Feb. 24, 2023).

16. *Appalachia's Digital Gap in Rural Areas Leaves Some Communities Behind*, POPULATION REFERENCE BUREAU, https://www.prb.org/resources/appalachias-digital-gap-in-rural-areas-leaves-some-communities-behind/ [https://perma.cc/YW6G-VWYR] (last visited Feb. 12, 2023).

17. *Id*. (noting the specific gaps related to broadband access between Appalachian and non-Appalachian communities within the same state).

18. H.R. 3093, 2017 Leg., Reg. Sess. (W. Va. 2017) (enacted); *see House Bill 3093*, W. VA. LEGISLATURE, http://www.wvlegislature.gov/Bill_Status/bills_history.cfm?INPUT=3093&year=2017&sessiontype=RS [https://perma.cc/9DMK-JKMB] (last visited Feb. 24, 2023).

19. W. VA. CODE § 31G-2-1 (2023).

20. W. VA. CODE § 31G-1-10 (repealed 2018).

21. *See* W. VA. CODE § 8-12-1 (providing that the general powers granted to municipal government does not expressly include Broadband).

facing a growing nursing shortage[22] while simultaneously experiencing low labor force participation[23] and population loss as young people left the state to pursue employment opportunities.[24] In many ways this dilemma was emblematic of a larger problem—the state had low rates of educational attainment, which affected labor force participation.[25] The nursing shortage was connected to education as the number of trained nurses was far too small to meet industry demand.[26] In an effort to ameliorate the nursing shortage, educational programs in the region began exploring and launching online learning options to help train individuals.[27] In a perfect world, these remote learning opportunities would also help increase labor force participation in West Virginia. However, reporting uncovered that, "the reach" of these online programs were limited as "because parts of rural West Virginia don't have access to the broadband needed for students to take the classes."[28] Sadly, this was merely one story among many, emphasizing the importance of internet access for the State's economy and quality of life. These stories and experiences helped galvanize interest and broadband advocacy efforts.

Despite the popular support for HB3093, the passage of the legislation was not a certainty. Industry lobbyists fought the bill to its bitter end, claiming they already adequately served these areas or would in near future expansions.[29] However, the lived experience of most West Virginians painted a starkly different narrative.[30] Much of Appalachia is marked by a history of corporate dominance,[31]

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22. *See* James Casto, *W. Va. Nursing Shortage Said to be 'Worst Ever'*, STATE J. (Dec. 9, 2017), https://www.wvnews.com/statejournal/w-va-nursing-shortage-said-to-be-worst-ever/article_32302564-2691-53a3-9ae6-95462e7b153d.html [https://perma.cc/2DTZ-5YK7].

23. Sean O'Leary & Ted Boettner, *State of Working West Virginia 2015*, W. VA. CTR. ON BUDGET & POL'Y (Nov. 9, 2015), https://wvpolicy.org/state-of-working-west-virginia [https://perma.cc/FD2S-6SSD].

24. Dave Mistich, *How Can West Virgina Keep Young People From Moving Away?*, W. VA. PUB. BROAD. (May 1, 2014, 7:24 PM), https://www.wvpublic.org/news/2014-05-01/how-can-west-virginia-keep-young-people-from-moving-away [https://perma.cc/MR5Y-GXXJ].

25. O'Leary & Boettner, *supra* note 23.

26. *See* Casto, *supra* note 22.

27. *See Lack of Nurse Educators is Likely Contributing to the Nurse Workforce Shortage,* MARKETPLACE (Nov. 14, 2017), https://www.marketplace.org/2017/11/14/lack-nurse-educators-likely-contributing-nurse-workforce-shortage [https://perma.cc/A8K9-XDJU].

28. *Id*.

29. *See* Eric Eyre, *Frontier Axes WV Senate President Weeks After Broadband Vote*, CHARLESTON GAZETTE-MAIL (June 6, 2017), https://wvpress.org/breaking-news/frontier-axes-wv-senate-president-weeks-broadband-vote/ [https://perma.cc/CV36-6CMG].

30. *See* Lucas Manfield, *After Years of Slow Internet and Broken Promises, West Virginia Finally Has a State Office Dedicated to Broadband*, THE REGISTER-HERALD (Feb. 4, 2021), https://www.register-herald.com/news/money/after-years-of-slow-internet-and-broken-promises-west-virginia-finally-has-a-state-office/article_92b317a2-7c5d-552f-8244-20c054917696.html [https://perma.cc/MZU5-MTXP].

31. *See generally* RONALD D. ELLER, UNEVEN GROUND: APPALACHIA SINCE 1945, at 7 (2008) ("Much of the story of Appalachia describes the exploitation of the region at the hands of outside

with business interests dictating the allocation of precious resources[32] and heavily influencing the development of regulatory frameworks to favor industry.[33] It is no surprise that the telecommunication industry would wish to create a closed system, maintaining their dominance and excluding any possibility of competition—and thus actual internet service.

The hills and hollers of Appalachia have long been sites of resistance[34] and the fight for broadband would prove no different. The legislation ultimately passed, resulting in one prominent politician ultimately losing his "day job" in the telecommunication industry.[35] The resounding support for the bill despite the corporate opposition was a hopeful sign.[36] The State needed very much to secure critical infrastructure investments in order to bridge the digital divide. Pursuing funding was impossible without creating a new legal framework that empowered communities to explore and pursue locally owned infrastructure.

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economic interests."); SHANNON ELIZABETH BELL, FIGHTING KING COAL: THE CHALLENGES TO MICROMOBILIZATION IN CENTRAL APPALACHIA 18 (2016) (discussing the consolidation of legal and political interests in West Virginia by coal companies as means to ensure their dominance); RONALD D. ELLER, MINERS, MILLHANDS, AND MOUNTAINEERS: INDUSTRIALIZATION OF THE APPALACHIAN SOUTH, 1880–1930, at 39-85 (1982) (discussing the subrogation of labor and corporate ownership of land, all to the detriment of local populations in Appalachia).

32. *See* Priya Baskaran, *Thirsty Places*, 2021 UTAH L. REV. 501, 527-29.

33. A recent and egregious example of this phenomenon was the 2014 chemical spill and drinking water contamination in Charles, WV. The panel of stakeholders convened by then Governor Tomblin consisted of industry interests, subrogating the citizenry and environmental groups concerned about the liberties taken by corporate actors that resulted in the disaster. LUKE ERIC LASSITER, BRIAN A. HOEY & ELIZABETH CAMPBELL, I'M AFRAID OF THAT WATER: A COLLABORATIVE ETHNOGRAPHY OF A WEST VIRGINIA WATER CRISIS 29 (2020).

34. For an introduction to the rich history of resistance in West Virginia and Appalachia, see generally ELIZABETH CATTE, WHAT YOU ARE GETTING WRONG ABOUT APPALACHIA 43 (2018); Nicholas F. Stump & Anne Marie Lofaso, *De-Essentializing Appalachia: Transformative Socio-Legal Change Requires Unmasking Regional Myths*, 120 W. VA. L. REV. 823, 839 (2018); Mark Baller & Leor Joseph Pantilat, *Defenders of Appalachia: The Campaign to Eliminate Mountaintop Removal Coal Mining and the Role of Public Justice*, 37 ENVTL. L. 629 (2007). For a recent example of West Virginia resistance, look no further than the West Virginia Teacher's Strike in 2018. *See* Bob Moser, *The Resistance Is Infiltrating Trump Country*, ROLLING STONE (Apr. 18, 2018), https://www.rollingstone.com/politics/politics-features/the-resistance-is-infiltrating-trump-country-630145/ [https://perma.cc/4FNG-XWVH].

35. Eyre, *supra* note 29. State Senate President Mitch Carmichael lost his position as a sales executive with Frontier shortly after the passage of the legislation. *Id.* The company had lobbied intensely against the bill and other proposed broadband bills. *Id*. Although he did take a principled stance with the 2017 legislation, Carmichael had vociferously criticized other legislation intended to improve broadband access, criticizing a 2016 bill intending to create a state-owned broadband system. *Id.* Carmichael noted this state-owned system would discourage private market solutions from existing telecommunication companies, like his then employer Frontier. *Id*.

36. The bill passed with only two votes against. *Id*.

III. PHYSICAL INFRASTRUCTURE AND CHALLENGES IN THE MOUNTAIN STATE

Infrastructure development is intrinsically a huge undertaking, one that requires time and money to build, maintain, and operate. Physical broadband infrastructure is most easily explained by drawing a comparison to drinking water. Imagine the internet as a river, a large flowing body that you need to "tap" into. High-capacity cable trunk lines serve as the primary "pipe" that connects to the internet.[37] This free-flowing information is processed and made available through server farms, akin to a water treatment plant. This is often collectively referred to as the first mile.[38] The internet river now needs to make it its way into the towns and communities. This is typically done through a physical infrastructure network, such as high-speed fiber optic cables.[39] We can think of these as the pipes that flow through any town. Just as a town must build water mains and sewer pipes, the local community or government must pay to create a system of fiber optic cables or similar infrastructure to connect the town to the "first mile." This part of Broadband infrastructure is referred to as the middle mile and the responsibility of local communities.[40] Finally, the internet river must flow from the main avenues in town to individual homes and businesses. These direct connections are referred to as the last mile.[41]

In addition to the physical infrastructure, there must be an Internet Service Provider (ISP).[42] Drawing again on the water system analogy, the ISP is the

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37. NAT'L RURAL TELECOMMS. COOP., NAT'L RURAL ELEC. COOP. ASS'N & ERICSSON, THE VALUE OF A BROADBAND BACKBONE FOR AMERICA'S ELECTRIC COOPERATIVES: A BENEFIT ASSESSMENT STUDY 9-11 (2018), https://www.cooperative.com/topics/telecommunications-broadband/Documents/The%20Value%20of%20a%20Broadband%20Backbone.pdf [https://perma.cc/ZEW4-SG9H]; *see also What Is the Middle-Mile?*, CA.GOV., https://site-cammbi.hub.arcgis.com/pages/what-is-the-middle-mile [https://perma.cc/5KPJ-VB6E] (last visited Feb. 11, 2023).

38. *Id.*

39. *Id.*

40. *Enabling Middle Mile Broadband Infrastructure (MM) Frequently Asked Questions (FAQs)*, NAT'L TELECOMM. & INFO. ADMIN., 2022, at 2, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-06/Middle-Mile-FAQs.pdf [https://perma.cc/M35H-NYJQ]; *see also Middle-Mile Broadband Initiative*, CA.GOV, https://middle-mile-broadband-initiative.cdt.ca.gov/ [https://perma.cc/JL7W-8VPP] (last visited Feb. 9, 2023); NAT'L TELECOMMS. & INFO. ADMIN., THE ENABLING MIDDLE MILE BROADBAND INFRASTRUCTURE (MM) PROGRAM 7 (2022), https://broadbandusa.ntia.gov/sites/default/files/2022-05/MM-101-Webinar-Presentation-05-19.pdf [https://perma.cc/5EPM-4VXP].

41. *How Does the Internet Work and What Are the Implications for Broadband Policy?*, PEW CHARITABLE TRS. (July 7, 2022), https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2022/07/how-does-the-internet-work-and-what-are-the-implications-for-broadband-policy [https://perma.cc/RX65-XZZB]; *see also What Is the Middle-Mile?*, *supra* note 37.

42. Devin Delfino, *What Is an ISP? The Companies That Provide You with Access to the Internet, Explained*, INSIDER (June 11, 2021, 5:51 PM), https://www.businessinsider.com/guides/tech/what-is-isp [https://perma.cc/HGA4-GW2E].

equivalent of the water company. They are responsible for providing the method of connection to the internet through a modem, billing for service, providing maintenance and operations, etc. ISPs include large private enterprises like AT&T as well as smaller companies.[43] Certain communities also form their own ISPs and operate them like a public utility.[44]

This brief and partial summary only outlines the core components of construction of the system. Part and parcel of this process are the complex regulatory frameworks involved in both building the infrastructure and maintaining it in accordance with telecommunications laws.[45] With such a massive undertaking, challenges and obstacles can emerge at any juncture of the planning, fundraising, construction, operation, and maintenance phases.

The Mountain State[46] also experienced some unique challenges that further complicated infrastructure development. First, the existing dominant service providers operated their systems on outdated technology, relying on copper coils rather than high-speed fiber optic cable.[47] Second, even the outdated physical infrastructure had a relatively small geographic footprint. This resulted in a number of communities being completely excluded by existing internet service providers.[48] The limited availability of physical infrastructure, when coupled with the outdated technology of existing systems, meant much of West Virginia needed to build a new and updated system in its entirety. This includes acquiring land, acquiring access to utility poles or easements, and building the physical infrastructure. The goal would be to connect previously disenfranchised and ignored communities with high-speed connections while upgrading the speed for ostensibly connected communities.

As mentioned earlier, even a small Broadband infrastructure project requires

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43. *See Michigan Broadband Providers by County*, CONNECTED NATION, https://connectednation.org/michigan/wp-content/uploads/sites/13/2018/08/MI_BB-Providers-by-County.pdf [https://perma.cc/XQY5-END7] (last visited Feb. 9, 2023) (listing large, small, and local companies).

44. NextLight in Longmont, CO, is one such example of a community owned and operated ISP. *See* NEXTLIGHT, https://mynextlight.com/about/ [https://perma.cc/VE68-R886] (last visited Feb. 9, 2023).

45. *See* US IGNITE & ALTMAN SOLON, BROADBAND MODELS FOR UNSERVED AND UNDERSERVED COMMUNITIES 7 (2020), https://www.us-ignite.org/wp-content/uploads/2020/07/USIgnite_Altman-Solon_Whitepaper-on-Broadband-Models_FINAL_7-9-2020.pdf [https://perma.cc/YE9P-S4AK].

46. West Virginia is commonly referred to as "The Mountain State." *See, e.g.*, W. VA. DEP'T TOURISM, https://wvtourism.com [https://perma.cc/V5FA-3JX7] (last visited Feb. 24, 2023).

47. *See* Doug Brake, *A Policymaker's Guide to Rural Broadband Infrastructure*, INFO. TECH. & INNOVATION FOUND., Apr. 2017, at 7, https://www2.itif.org/2017-rural-broadband-infrastructure.pdf [https://perma.cc/5Q2V-9QW5].

48. W.V. BROADBAND PLAN, *supra* note 10, at 71. For a discussion of this as a national phenomenon, see *Bridging the Broadband Divide Dashboard: Prioritizing People Over Miles*, DIGIT. PLANET, https://sites.tufts.edu/digitalplanet/broadband-infrastructure-funding-and-the-digital-divide-prioritizing-people-over-miles/ [https://perma.cc/D69L-5TW2] (last visited Feb. 8, 2023).

a significant investment of time, resources, and funding. Interested stakeholders in West Virginia were not envisioning a modest project but advocating for large-scale broadband deployment to connect excluded rural Appalachian communities. Communities were enthusiastic but completely unfamiliar with the new state legislation authorizing broadband development and the intersecting regulatory regimes governing broadband development. What communities really needed during the nascent exploration of broadband development was help understanding and navigating the funding systems, land requirements, regulatory frameworks, and other legal and business components of building and operating a broadband system.

IV. THE WVU LAW CLINIC COLLABORATION

In 2017, The Land Use and Sustainable Development Law Clinic ("LUSD")[49] and the Entrepreneurship & Innovation Law Clinic ("EILC")[50] were the two transactional law clinics operating within the West Virginia University College of Law ("WVU"). WVU is the only law school in the State of West Virginia, and the clinics provided vital, complimentary services throughout the State. In the aftermath of the 2017 legislation, both clinics were approached by community groups interested in developing broadband. The statute had authorized the creation of Broadband Cooperatives as the need for broadband was clear. However, the process of forming the new cooperatives, applying for funding, and developing the infrastructure remained a mystery. The EILC was asked to provide targeted educational materials on the application of the new law. Although detailed toolkits of varying lengths were available from the Appalachian Regional Commission, NTIA, and USDA—none directly addressed the quirks and challenges of the West Virginia legislation.

The EILC's Broadband Cooperative toolkit[51] was the first comprehensive, community-oriented guide in West Virginia. The purpose was to provide a starting place for interested groups seeking background information. The 2017 legislation focused on authorizing broadband cooperatives as the primary vehicle for developing locally owned infrastructure. The statute enabled a group of twenty individuals to form a broadband cooperative association, an official entity authorized to develop, own, and operate community owned infrastructure. As the legislation was so new and untested, the tool kit focused on providing a comprehensive but direct overview of the infrastructure development process.

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49. *Land Use and Sustainable Development Law Clinic*, W. VA. UNIV. COLL. L., https://landuse.law.wvu.edu [https://perma.cc/N68C-ELQK] (last visited Feb. 24, 2023).

50. *Entrepreneurship and Innovation*, W. VA. UNIV. COLL. L., https://www.law.wvu.edu/clinical-law/clinics/entrepreneurship-innovation [https://perma.cc/PSN9-AS46] (last visited Feb. 24, 2023).

51. W. VA. COLL. L. ENTREPRENEURSHIP & INNOVATION L. CLINIC, A GUIDE TO WEST VIRGINIA BROADBAND COOPERATIVES, https://www.law.wvu.edu/files/d/6abf8912-7e56-4561-bcbc-fc5fc42765de/broadband-cooperative-toolkit-eilc.pdf, [https://perma.cc/3DPS-HJSR] (last visited Feb. 8, 2023).

The toolkit outlined everything from the entity options, formation requirements, governance structures, tax issues, development costs, and the funding landscape.

As part of the toolkit, students conducted interviews with successful broadband cooperatives in other rural jurisdictions. This research was encapsulated within the toolkit as case studies, illustrating the complexity of infrastructure development while showcasing the long-term benefits of community owned infrastructure for traditionally excluded rural communities.

A. Educating Local Government

The original 2017 broadband legislation strictly limited local government participation in developing local broadband infrastructure. Only three municipalities or local governments could participate in pilot projects to pursue, develop, and build broadband infrastructure.[52] However, subsequent legislation eliminated the pilot project limitations, enabling local governments to form broadband cooperatives and create locally owned systems.[53]

The LUSD Law Clinic, as the state experts in representing local governments on a variety of land use and infrastructure projects,[54] received a grant to begin working with local governments interested in pursuing broadband development.[55] The LUSD Law Clinic created a toolkit tailored specifically for local governments, which can play a number of different and overlapping roles.[56] For example, local governments can serve as owners of the infrastructure or land use components to construct the infrastructure.[57] Here, the local government owns the utility poles or easements needed to construct the infrastructure, meaning running cable through utility poles or using rights of way to bury underground cables.[58] In this scenario, the government can also own the physical infrastructure components—cables, etc.—of the middle mile and last mile.[59] Local governments could also serve as the ISP, although currently no local governments are serving in this role.[60] Finally, the local governments also play an important role as regulators.[61]

In addition to the toolkit, the LUSD Law Clinic toolkit provided local

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52. W. VA. CODE § 31G-1-10 (repealed 2018).

53. H.R. 4629, 2018 Leg., Reg. Sess. (W. Va. 2018) (enacted).

54. *Land Use and Sustainable Development Law Clinic*, *supra* note 49.

55. Interview with Professor Katherine Garvey, Dir. Land Use & Sustainable Dev. L. Clinic (Sept. 30, 2022) (on file with author).

56. JARED B. ANDERSON ET AL., W. VA. COLL. L. LAND USE AND SUSTAINABLE DEV. L. CLINIC, BROADBAND IN WEST VIRGINIA: A LEGAL GUIDE FOR LOCAL GOVERNMENTS, https://landuse.law.wvu.edu/files/d/e89b3329-799f-4d72-8c16-9fd65457df4e/turbo-toolkit.pdf, [https://perma.cc/ML44-UVJ2] (last visited Feb. 8, 2023).

57. *See id.* at 40, 45.

58. *Id.*

59. *Id.*

60. *Id.*

61. Interview with Professor Katherin Garvey, *supra* note 55.

governments with technical assistance and training for certified urban planners, attorneys, and local leaders on planning for broadband.[62] The educational programming was designed to help local government actors understand their possible roles and assess their capacity in each category. For example, does the local government have the bandwidth to manage a large infrastructure development project? Should they seek out additional partners to increase capacity and expertise?

Finally, the LUSD Law Clinic provided some direct services to local governments. Examples of their work included helping local governments create asset maps that cataloged helpful easements, cell towers, and other infrastructure that could be beneficial to future broadband development.[63] Likewise, the LUSD Law Clinic helped communities create utility ordinances to help regulate broadband development.[64]

B. Benefits of Law Clinic Engagement

Communities require a great deal of client counseling to understand and plan for infrastructure development. Often, this type of outreach and education is both necessary but also difficult to access as this type of work is not a lucrative endeavor for private attorneys. Law clinics can help bridge this gap by providing essential pre-development education and capacity building for communities. In other words, clinics can provide the necessary early-stage client counseling for rural communities.

Client counseling is an essential lawyering skill for transactional lawyers. A large and complicated component of transactional practice is helping clients choose between the inevitably imperfect options. Transactional attorneys frame and assess risks for clients. Moreover, good attorneys support clients as they grapple with capacity, funding, and risk tolerance limitations. Clinic broadband projects center on client counseling as part of capacity building and education. Many communities and stakeholders keenly interested in broadband had a limited understanding of the physical infrastructure, the costs of development, the regulatory considerations, the timeline, the funding requirements, and other important considerations. The clinics' engagement provided communities with much needed support and facilitation surrounding the requirements and stages of broadband development. By doing so, the clinics also provided law students with an opportunity to engage in client counseling.

CONCLUSION

Building infrastructure is a complex, lengthy, and incredibly important undertaking. At its core, infrastructure development is a type of social

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62. *See* ANDERSON ET AL., *supra* note 56.

63. *Projects*, W. Va. Coll. L. Land Use and Sustainable Dev. L. Clinic, https://landuse.law.wvu.edu/projects [https://perma.cc/F38U-JKSK] (last visited Feb. 12, 2023).

64. *Id.*

investment.[65] Favored geographies within the United States have long benefitted from an infusion of funds for new roads and water systems.[66] Broadband is only the latest manifestation of unequal infrastructure investment, a phenomenon that inevitably elevates certain places at the expense of rural communities and other disenfranchised geographies. Research repeatedly shows the importance of high-speed broadband in improving educational access,[67] health outcomes,[68] and economic development.[69] Despite the importance of broadband, far too many rural communities are trapped in the digital divide.

The dominant broadband model in the United States relies on private industry and inevitably excludes or underserves rural areas. Private ISPs struggle to generate sufficient revenues from low-density rural communities to justify expansion into these geographies. The solution, in the absence of private sector interest, must be collaborative government reinvestment in rural communities. With the passage of the Bipartisan Infrastructure Bill and existing funding sources from the USDA, NTIA, and other agencies, rural communities can explore funding and developing their own network systems.

Law clinics are well positioned to provide essential assistance to rural communities during the initial stages of broadband planning and development. In particular, communities need a great deal of education and capacity building before undertaking a broadband project. Clinics can help communities conceptualize the various stages of development, associated costs, regulatory components, and land use considerations. Clinics can also help communities identify assets, obstacles, and stakeholders to cultivate important partnerships with state agencies. Moreover, clinics can build technical expertise and capacity for the private bar by cultivating student interest and providing vital training during law school. Students who work on infrastructure projects during law school are well positioned to continue this work post-graduation. Beyond the skills and experience, engaging students in rural infrastructure projects builds student appreciation for the creativity and resilience of rural communities.

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65. Baskaran, *supra* note 32, at 508.

66. *Id.* at 551-54.

67. Amanda Rabinowitz, *Students Are Falling Behind in Rural Ohio Where Remote Learning Has Exposed the Digital Divide*, IDEASTREAM PUB. MEDIA (Mar. 4, 2021, 10:53 AM), https://www.wksu.org/education/2021-03-04/students-are-falling-behind-in-rural-ohio-where-remote-learning-has-exposed-the-digital-divide [https://perma.cc/7D5F-TMHA].

68. Adie Tomer et al., *Digital Prosperity: How Broadband Can Deliver Health and Equity to All Communities*, BROOKINGS (Feb. 27, 2020), https://www.brookings.edu/research/digital-prosperity-how-broadband-can-deliver-health-and-equity-to-all-communities/ [https://perma.cc/RQ8C-XLUT].

69. ALISON GRANT ET. AL., PURDUE UNIV. CTR. FOR REG'L DEV., ESTIMATION OF THE NET BENEFITS OF INDIANA STATEWIDE ADOPTION OF RURAL BROADBAND 1, 6-7 (2018), https://pcrd.purdue.edu/wp-content/uploads/2018/12/006-RPINsights-Indiana-Broadband-Study.pdf [https://perma.cc/Z73R-G493].