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AVAILABILITY IN PENNSYLVANIA

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ISSN 0041-9915 (print) 1942-8405 (online) • DOI 10.5195/lawreview.2021.796
<http://lawreview.law.pitt.edu>



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James LaMarca*

INTRODUCTION

On March 11, 1989, the World Wide Web became publicly available.¹ In the following thirty-two years, the internet has become a fixture of everyday life across the world. The internet is used to some *extent* in nearly all industries² and has become ubiquitous in people's personal and social lives. In the past three decades, the internet has proven to be a source of positive change in the lives of individuals, but most states, including Pennsylvania, have not acted to ensure equal access to this all-important tool.³ State failure to act has led to private internet service providers selecting the winners and losers of economic development, while the government has remained complacent with the status quo.⁴ Ensuring access to broadband internet

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¹ Farnoush Amiri, *The World Wide Web Is 30 Years Old—and Its Inventor Has a Warning for Us*, NBC NEWS (Mar. 12, 2019), <https://www.nbcnews.com/tech/tech-news/world-wide-web-30-its-inventor-has-warning-us-n982156>.

² K. Sabeel Rahman, *The New Utilities: Private Power, Social Infrastructure, and the Revival of the Public Utility Concept*, 39 CARDOZO L. REV. 1621, 1650 (2018).

³ See generally *How States Are Expanding Broadband Access*, PEW (Feb. 27, 2020), <https://www.pewtrusts.org/en/research-and-analysis/reports/2020/02/how-states-are-expanding-broadband-access> (detailing different funding and workforce commitments in state governments from a study of nine states' broadband programs).

⁴ See ANGELA SIEFER, PELL CENTER FOR INT'S RELATIONS & PUB. POLICY, STATE-LEVEL BROADBAND POLICY (2015), <https://pellcenter.org/wp-content/uploads/2017/02/State-Level-Broadband-Policy-FINAL.pdf> (detailing state statutes concerning broadband with most of the enactment dates falling after 2010—over a decade after the advent of the World Wide Web).

is crucial in making sure large stretches of the country, including low-income communities, are not left behind.⁵

To ensure such access, Pennsylvania should designate internet service providers (ISPs) as public utilities and grant the Public Utility Commission (PUC) power to issue Certificates of Public Convenience based on regional needs within the commonwealth. This flexible, case-specific regulatory framework will allow the PUC to better address rural areas where the current free-market system has failed, without interfering in areas where it has the potential to work. In turn, this would enable Pennsylvania to be the first jurisdiction to remove itself from the current patchwork regulatory approach.

This Note outlines the rationale behind a proposed regulatory change and how it can be achieved through legislative amendments. Part I describes how broadband access is crucial to economic development and includes an analysis of its current availability across the commonwealth. Part II establishes the public policy and economic rationale behind designating an industry as a public utility and behind the current regulatory framework in Pennsylvania and then discusses the similarities between ISPs and current public utilities. Part III provides an overview of the patchwork of regulations employed around the country and examines Pennsylvania's current regulatory framework for ISPs. Finally, Part IV proposes amendments to the existing framework to easily allow regional public utility designation, explains why this regional approach is the best way to address the divergent issues present in Pennsylvania, and evaluates the current availability of broadband and market realities in rural and urban areas.

I. BROADBAND CONNECTIVITY AND THE EFFECT OF ACCESS TO BROADBAND ON THE ECONOMY

ISPs own and operate assets that offer customers broadband access to the internet.⁶ Broadband is defined as having an internet connection that enables twenty-five megabits per second download speed and three megabits per second upload

⁵ See generally *ReConnect Loan and Grant Program*, U.S. DEP'T AGRIC., <https://www.usda.gov/reconnect> (last visited Feb. 28, 2021).

⁶ See Erik Gregersen, *Internet Service Provider*, ENCYCLOPEDIA BRITANNICA, <https://www.britannica.com/technology/Internet-service-provider> (last visited Mar. 7, 2021).

speed.⁷ ISPs also continue to provide dial-up internet access which operates too slowly and inconsistently for industrial use.⁸ Access to broadband is a key element of economic development and social cohesion; lack of access hinders growth for both industry and individuals in a geographic region.⁹ In Pennsylvania, disparities in broadband access are evident in all regions of the commonwealth.¹⁰

A. Importance of Broadband Access to Economic Development

Increased availability of broadband access positively impacts regional economic development in several ways.¹¹ First, geographical areas with reliable broadband access attract businesses and enable enterprises to flourish.¹² This is because large multi-jurisdictional businesses have grown accustomed to the interconnectivity and instantaneous nature of communication facilitated by broadband connections.¹³ When presented with multiple acceptable locations to build physical infrastructure, businesses consider which site best enables them to connect and communicate with their other affiliates or divisions, and the connectivity of broadband is essential in assuring such communication.¹⁴

⁷ Jon O'Connell & Bill Wellock, *Report Challenges Internet Providers' Advertised Speeds*, CITIZENS' VOICE (Aug. 17, 2019), https://www.citizensvoice.com/news/report-challenges-internet-providers-advertised-speeds/article_a827be94-d771-59fe-afde-df798a7785ce.html.

⁸ *2015 Broadband Progress Report*, FED. COMM. COMMISSION (Feb. 4, 2015), <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2015-broadband-progress-report>.

⁹ See *infra* Section I.A.

¹⁰ See *infra* Section I.B.

¹¹ See generally COUNCIL OF ECON. ADVISORS, *THE DIGITAL DIVIDE AND ECONOMIC BENEFITS OF BROADBAND ACCESS* (2016); JED KOLKO, PUB. POLICY INST. OF CAL., *DOES BROADBAND BOOST LOCAL ECONOMIC DEVELOPMENT?* (2010); ORG. FOR ECON. CO-OPERATION & DEV., *ECONOMIC AND SOCIAL BENEFITS OF INTERNET OPENNESS* 18–22 (2016), <https://www.oecd-ilibrary.org/docserver/5jlwqf2r97g5-en.pdf?expires=1598813350&id=id&accname=guest&checksum=C92F102160EC47C35A8AC00686D69A1F> [hereinafter *ECONOMIC AND SOCIAL BENEFITS*].

¹² Darrell M. West, *Broadband: A Catalyst from Small Business Growth*, BROOKINGS (Feb. 15, 2012), <https://www.brookings.edu/testimonies/broadband-a-catalyst-for-small-business-growth/>.

¹³ See Laura Alfaro & Maggie X. Chen, *Multinational Activity and Information and Communication Technology* 1 (World Dev. Report, Working Paper, 2015), [https://www.hbs.edu/faculty/Publication%20Files/ICT_05-03-2015%20\(2\)_e96fb71e-8268-4119-a581-7144b1bee227.pdf](https://www.hbs.edu/faculty/Publication%20Files/ICT_05-03-2015%20(2)_e96fb71e-8268-4119-a581-7144b1bee227.pdf) (finding that the location of multinational firms varies with a county's availability of information and communication technology).

¹⁴ See Abigail Thorpe, *Absence of High-Speed Internet in Rural Areas Stunts Business Growth*, NAT'L FED'N INDEP. BUS. (June 12, 2018), <https://www.nfib.com/content/resources/start-a-business/absence-of-high-speed-internet-in-rural-areas-hurts-business-growth/>.

Second, and perhaps the most impressive measure of the importance of broadband, is its capacity to promote employment. When a zip code moves from having zero broadband providers to at least one, employment growth increases in that area by 6.4%.¹⁵ While the relationship between access and growth is not uniform across employment sectors, no sector is inhibited by access to broadband.¹⁶ Employment growth as a result of broadband access is particularly pronounced in the following sectors of the economy: utilities; information, finance, and insurance; professional, scientific, and technical services; management of companies and enterprises; and administrative and business support services.¹⁷ These sectors are particularly noteworthy because they significantly overlap with the sectors that the Bureau of Labor and Statistics identifies as the fastest-growing employment sectors across the United States.¹⁸

Third, preexisting businesses experience a rise in profits and efficiency from increased broadband availability.¹⁹ Without broadband availability in a business's surrounding area, the existing business functions in a technological landlock.²⁰ Increased broadband availability can boost efficiencies by providing manufacturing businesses with better access to logistical support and providers of goods and services with access to once remote markets. As a result, access to broadband not only enables new businesses to open and operate but also allows preexisting businesses to thrive.

Fourth, the benefits of broadband access go beyond commercial economic growth; access also supports more employment options for the residents of an area. Better broadband access for residents improves labor market outcomes.²¹ For example, residents can access more job listings and have more ways to research if a particular job that is listed would be a proper fit for them.²² This benefit is particularly

¹⁵ See KOLKO, *supra* note 11, at 22.

¹⁶ *Id.*

¹⁷ *Id.* at 23.

¹⁸ *Industries with the Fastest Growing and Most Rapidly Declining Wage and Salary Employment*, U.S. BUREAU LAB. STAT., <https://www.bls.gov/emp/tables/industries-fast-grow-decline-employment.htm> (last updated Sept. 1, 2020).

¹⁹ See KOLKO, *supra* note 11, at 24.

²⁰ *Id.*

²¹ See COUNCIL OF ECON. ADVISORS, *supra* note 11, at 1.

²² *Id.* at 6.

important due to the decline of the print newspaper industry, which is where most people without the internet search for jobs.²³

Fifth, better access to broadband also enables other secondary benefits to residents and the economy as a whole, such as greater availability of individual, high quality, live video feeds for telemedicine.²⁴ The demand for telehealth options has grown dramatically due to the COVID-19 pandemic, which left many patients afraid of going into their healthcare providers' offices or barred from doing so by state restrictions.²⁵ Telemedicine could play a crucial role in serving populations that often struggle to access health care, such as rural and low-income communities.²⁶ But this promise cannot be fulfilled while these communities lack reliable internet access.²⁷

Sixth, increased access “support[s] entrepreneurship and small businesses, promoting energy efficiency and energy savings, improving government performance, and enhancing public safety.”²⁸ Accordingly, increased broadband access will not only help industry but also people in the community by promoting energy savings which will put money in consumers' pockets. Increased connectivity will also increase public safety and government performance—two key metrics in people's lives.

Taken together, these benefits equate to economic growth. A recent study showed “that a ten-percentage point increase in broadband penetration boosts per capita growth rates by 0.9 to 1.5 percentage points.”²⁹ A different study also found that a one percent increase in the size of a country's internet-using population

²³ Douglas McLennan & Jack Miles, *A Once Unimaginable Scenario: No More Newspapers*, WASH. POST (Mar. 21, 2018), <https://www.washingtonpost.com/news/theworldpost/wp/2018/03/21/newspapers/>.

²⁴ See COUNCIL OF ECON. ADVISORS, *supra* note 11, at 6.

²⁵ Cara Murez, *Health Care After COVID: The Rise of Telemedicine*, U.S. NEWS (Jan. 5, 2021), <https://www.usnews.com/news/health-news/articles/2021-01-05/health-care-after-covid-the-rise-of-telemedicine>.

²⁶ Elaine Khoong, *How the Telemedicine Boom Threatens to Increase Inequities*, ASS'N AM. MED. CS. (Dec. 14, 2020), <https://www.aamc.org/news-insights/how-telemedicine-boom-threatens-increase-inequities>.

²⁷ *Id.*

²⁸ See COUNCIL OF ECON. ADVISORS, *supra* note 11, at 6.

²⁹ Nina Czernich, Oliver Falck, Tobias Kretschmer & Ludger Woessmann, *Broadband Infrastructure and Economic Growth*, 121 ECON. J. 505, 552 (2011).

increases gross domestic product per employed person by eight to fifteen dollars.³⁰ This shows that government action to ensure the increased access of broadband to citizens will encourage economic growth.

B. *Current Access to Broadband Across the Commonwealth*

Broadband access in Pennsylvania varies by region.³¹ According to the Federal Communications Commission (FCC), all counties in Pennsylvania have broadband access, and only 800,000 residents do not have access to broadband connectivity.³² Even the FCC, however, realizes this is likely a low estimate due to using average instead of median speed when making this determination.³³ According to the FCC, there are only 19 million residents nationwide without access to consistent broadband.³⁴ On the other hand, estimates from Microsoft, based on diagnostic tests of their devices and software in use around the country, show that 163 million residents do not have consistent access to broadband level speeds,³⁵ this is an astonishing difference of 858%.

This discrepancy has led to private and state initiatives that measure median internet speed to assist the commonwealth in decision-making and planning.³⁶ An example of one such initiative is the *Broadband Availability and Access in Rural Pennsylvania Report*, which was conducted by the Center for Rural Pennsylvania (CRP), a legislative agency within the Pennsylvania General Assembly.³⁷ This report compares the FCC data with actual data collected by M-Lab, a private company that

³⁰ Reza Najarzadeh, Farzad Rahimzadeh & Michael Reed, *Does the Internet Increase Labor Productivity?*, 36 J. POL'Y MODELING 986, 993 (2014).

³¹ SASCHA D. MEINRATH, HANNAH BONESTROO, GEORGIA BULLEN, ABIGAIL JANSEN, STEVEN MANSOUR, CHRISTOPHER MITCHELL, CHRIS RITZO & NICK THIEME, THE CTR. FOR RURAL PA., *BROADBAND AVAILABILITY AND ACCESS IN RURAL PENNSYLVANIA* 70 fig.4 (2019), https://www.rural.palegislature.us/broadband/Broadband_Availability_and_Access_in_Rural_Pennsylvania_2019_Report.pdf.

³² *Id.* at 7.

³³ *Id.*

³⁴ *Eighth Broadband Progress Report*, FED. COMM. COMMISSION, <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/eighth-broadband-progress-report#:~:text=Notwithstanding%20this%20progress%2C%20the%20Report,lack%20access%20to%20this%20service> (last visited Dec. 31, 2020).

³⁵ See MEINRATH ET AL., *supra* note 31, at 1, 15.

³⁶ See generally Czernich et al., *supra* note 29.

³⁷ See MEINRATH ET AL., *supra* note 31, at 52.

measures the speed and quality of internet service.³⁸ M-Lab collected data from internet users who voluntarily used M-Lab's network diagnostic tool to measure the efficiency of their computers.³⁹ This data was geolocated using the computer's IP address and then the median was taken.⁴⁰ This methodology resulted in over 11 million data points for the report authors to analyze.⁴¹

Based on this data, the CRP Report reached drastically different results than the FCC. The most startling difference found was that—while the FCC had determined that all counties in Pennsylvania had broadband access—the CRP report found that not one county in Pennsylvania had a median speed above the minimum threshold to qualify as broadband.⁴² The few areas of the commonwealth that met the minimum requirement for broadband “were clustered around major metropolitan areas, especially Philadelphia and Pittsburgh, and that outside of a handful of urban cores, almost no areas of the commonwealth had median speeds that met the FCC’s definition of broadband.”⁴³ The report also found that urban areas were quicker than rural areas at developing rates that match the FCC’s definition of broadband.⁴⁴ Moreover, rural citizens were more likely to state that their internet was “low-quality,” “unreliable,” and “low-speed.”⁴⁵

This discrepancy in access and quality may partially explain why rural areas of the commonwealth experienced a much slower recovery from the previous economic recession than major metropolitan areas.⁴⁶ In total, forty-eight of Pennsylvania’s sixty-seven counties are rural,⁴⁷ and these counties account for roughly 3.4 million residents of the commonwealth.⁴⁸ Consequently, gaps in broadband coverage may

³⁸ *See id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.* at 53.

⁴² *Id.* at 66.

⁴³ *Id.* at 68.

⁴⁴ *Id.* The report relied on the Center for Rural Pennsylvania’s map to differentiate rural and urban counties. *Id.* at 8; see *Rural Pennsylvania Counties*, CTR. FOR RURAL PA., https://www.rural.palegislature.us/demographics_rural_urban_counties.html# (last visited Feb. 27, 2021).

⁴⁵ MEINRATH ET AL., *supra* note 31, at 12.

⁴⁶ *See ReConnect Loan and Grant Program*, *supra* note 5.

⁴⁷ MEINRATH ET AL., *supra* note 31, at 12.

⁴⁸ *Id.*

play a role in the commonwealth's flagging job growth data in the previous decade compared to the nation as a whole.⁴⁹

It is clear that broadband plays an important role in economic development in the modern economy. Broadband availability supports growth from both outside investment and local entrepreneurship. Unfortunately, wide swaths of Pennsylvania do not have broadband access, which is likely holding those regions back from future economic growth.

II. ECONOMICS OF PUBLIC UTILITIES AND THE SIMILARITIES OF PUBLIC UTILITIES AND BROADBAND

Regulated public utilities in Pennsylvania typically own and operate assets that allow for a specific type of good or service to be delivered to the public by the private sector.⁵⁰ Section 102 of the Public Utility Code regulates public utilities in the commonwealth and sets forth an enumerated list of the goods and services covered, including the transmission of electricity, wastewater collection, movement of people by vehicles, and pipelines carrying hydrocarbons.⁵¹

A. *What is a Public Utility?*

Public utilities at their core exist strictly as creatures of legislation.⁵² There is no private concept or business organization that constitutes a public utility; rather it is merely an industry the legislature of a jurisdiction believes requires more forceful regulation than other industries.⁵³ This is because these industries tend to provide essential services to the public that might normally be provided by the state but are instead developed with private capital and management, subject to certain financial oversight by the state.⁵⁴ While the legislature has the final say in determining what

⁴⁹ *State Employment and Unemployment Summary*, U.S. BUREAU LAB. STAT. (Dec. 18, 2020), <https://www.bls.gov/news.release/laus.nr0.htm>.

⁵⁰ See 66 PA. CONS. STAT. § 102 (2020).

⁵¹ *Id.*

⁵² H.E. Batson, *The Economic Concept of a Public Utility*, 42 *ECONOMICA* 457, 457 (1933).

⁵³ See *Public Utility*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/public_utility#:~:text=A%20public%20utility%20is%20an,heat%2C%20and%20television%20cable%20systems (last updated Aug. 2020) (detailing how a public utility is defined/determined in a sub-set of states).

⁵⁴ See Batson, *supra* note 52.

should be a public utility, it typically only selects industries that have similar economic characteristics to existing public utilities.⁵⁵

1. Unifying Characteristics of Public Utilities: Monopolies, Significance, and Inelastic Demand

A central common aspect of all public utilities is that they are natural monopolies.⁵⁶ Natural monopolies are characterized by natural barriers of entry—high costs of entry into a market and/or markets that yield powerful economies of scale.⁵⁷ As such, natural monopolies do not necessarily arise due to market collusion or bad corporate behavior.⁵⁸

For example, the delivery of electricity is typically defined as a public utility.⁵⁹ Electricity delivery is a natural monopoly in both aspects of the term. First, the infrastructure a firm needs to produce and deliver electricity results in high startup costs.⁶⁰ These investments must be made before a firm earns a single dollar from the endeavor and serve as a barrier to keep most firms out of the field. Second, the rights-of-way in which the delivery systems (e.g., power lines) are located cannot be endlessly duplicated once the first system is in place without a significant and redundant expenditure of resources (in this case, surface land).⁶¹ This scenario is similar to planning and building roads—it often does not make sense to build multiple roads next to each other connecting the same two cities, just as it would not make sense to build multiple power lines next to each other to provide the same

⁵⁵ See Rahman, *supra* note 2, at 1634–40 (detailing that there were variable definitions of what was declared a public utility but that “[t]oday we tend to think of public utilities in economic terms: natural monopolies . . . where economic efficiency requires a monopoly structure”); see, e.g., 66 PA. CONS. STAT. § 102 (defining public utilities in Pennsylvania); CAL. PUB. UTIL. CODE § 216(a) (West 2020) (defining public utilities in California); MISS. CODE ANN. § 77-3-3 (2020) (defining public utilities in Mississippi).

⁵⁶ Frank A. Wolak, *Public Utility Pricing and Finance*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS 1 (Steven N. Durlauf & Lawrence E. Blaum eds., 2d ed. 2008).

⁵⁷ *Natural Monopoly*, INVESTOPEDIA, https://www.investopedia.com/terms/n/natural_monopoly.asp (last updated Jan. 29, 2021).

⁵⁸ *Id.*

⁵⁹ 66 PA. CONS. STAT. § 102.

⁶⁰ Douglas Gegax & Kenneth Nowotny, *Competition and the Electric Utility Industry: An Evaluation*, 10 YALE J. ON REG. 63, 74 (1993).

⁶¹ See Ben W.F. Depoorter, *Regulation of Natural Monopoly*, in 5 ENCYCLOPEDIA OF LAW & ECON. 498, 501 (1999) (“The need to avoid duplication of facilities, particularly fixed costs, would serve as justification for traditional entry regulation.”).

service between buildings.⁶² Building excess roads, like building excess powerlines, would be costly and duplicative. Just as every house does not require its own road to the grocery store or to a workplace, neither does every house need its own direct and exclusive connection to the power plant. Thus, the utility controls scarce resources.

Even if an individual or group can meet the intense initial capital requirements, there remains the issue of economies of scale.⁶³ Economies of scale occur when the marginal cost of production—that is, the average cost of producing an additional unit of a good or service—is minimized.⁶⁴ The delivery of electricity exemplifies powerful economies of scale. Once a company has built long-distance, high-voltage wires to bring electricity from the generation point to a location, it is relatively inexpensive to hook up additional houses in the location because the longest and most infrastructurally taxing portion of the transmission is complete.

Efficient businesses produce at economies of scale, or where average cost equals marginal cost.⁶⁵ For an electric company, since the initial startup costs for distribution are so high, the addition of new customers results in a nearly always decreasing marginal and average cost to the firm.⁶⁶ Thus, the bigger the electric company, the lower its marginal and average costs and the more it maximizes its economies of scale. This type of set-up greatly rewards first movers into the industry, as new companies in the same service area will have to acquire many customers before they can match the marginal cost of an already established electric company.⁶⁷ As a result, the combination of high barriers to entry and decreasing marginal costs results in one large firm being the most economically efficient option to provide the service.⁶⁸

⁶² See generally *id.* (detailing the need to keep Regional Bell Operating Systems out of AT&T service area upon break-up of the Bell System monopoly).

⁶³ See *Natural Monopoly*, *supra* note 57.

⁶⁴ See Gegax & Nowotony, *supra* note 60, at 67.

⁶⁵ See Will Kenton, *Economies of Scale*, INVESTOPEDIA, (Jan. 17, 2021), <https://www.investopedia.com/terms/e/economiesofscale.asp>.

⁶⁶ See Geoff Riley, *Explaining Natural Monopoly*, TUTOR2U, <https://www.tutor2u.net/economics/reference/natural-monopoly> (last visited Jan. 4, 2020) (explaining that marginal costs decline because a monopoly has a declining long run cost).

⁶⁷ See *Natural Monopoly*, *supra* note 57.

⁶⁸ *Id.*

The importance of the good delivered by the industry is another feature that typically characterizes public utilities.⁶⁹ Many of the industries classified by legislatures as public utilities deliver goods that are essential to public safety, health, or economic activity.⁷⁰ Once again, electricity provides a useful example. Electricity is essential to public safety (traffic and streetlights), health (hospitals need electricity to complete procedures and run equipment), and economic activity (without electricity nearly all modern economic activity stops). The government has a vested interest in ensuring that these activities occur without interruption.

These important characteristics also result in goods that public utilities deliver possessing nearly perfectly inelastic demand.⁷¹ Inelastic demand occurs when a change in the price of a good does not result in a meaningful change in the quantity of that good demanded by the market.⁷² A common example is gasoline—when the price of oil increases the market demand for gasoline does not meaningfully change.⁷³ This inelasticity results in consumers having to buy the good at the price provided due to their need for the good; there is no way for consumers to avoid needing that good or to find an effective substitute.⁷⁴ Thus, the presence of inelastic demand in addition to the previously discussed characteristics could indicate that a private industry is ripe for consideration as a public utility.

2. Advantages of Government Regulation of Public Utilities

Government regulation of public utilities serves multiple purposes. First, it protects consumers from unreasonable cost increases that are the natural result of a monopoly.⁷⁵ Allowing natural monopolies to operate without regulation can have disastrous effects for consumers. Granting public utility designation to an industry like electricity results in government control over pricing and supply, thus preventing

⁶⁹ See Wolak, *supra* note 56; Rahman, *supra* note 2, at 1635.

⁷⁰ See *Public Utility*, *supra* note 53 (“A public utility is an entity that provides goods or services to the general public.”); 66 PA. CONS. STAT. § 102 (2020) (defining public utility to include water and electrical services, common carriers, canals and tunnels, and wastewater collection).

⁷¹ See Wolak, *supra* note 56.

⁷² Will Kenton, *Price Elasticity of Demand*, INVESTOPEDIA, <https://www.investopedia.com/terms/p/priceelasticity.asp> (last updated Feb. 20, 2021).

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ See David Schwartzman, *The Effect of Monopoly on Price*, 67 J. POL. ECON. 352, 352 (1959).

price gouging.⁷⁶ The economic characteristics of natural monopolies coupled with the inelastic nature of the demand for their goods and services results in a compelling incentive to price gouge. For example, if the electricity market were not regulated by the government, transmission owners would be able to raise their price whenever they desired because they would know that no other firm could enter the market to displace them as the transmitter to the consumers. Further, electricity consumers are so reliant on the utility that they would be forced to pay whatever charge the transmission owner demanded.

One such failure occurred in the Texas electricity market in February 2021. Texas is one of the most deregulated public utility jurisdictions in the United States, particularly in the electricity market.⁷⁷ The state utility commission is permitted to regulate in certain areas, but its powers are extremely weak.⁷⁸ This led to a relaxed regulatory environment where the state commission rarely exercises its permissive intervention power but instead defers to private energy companies to decide if and when to make changes that will prevent service disruptions.⁷⁹

When a major winter storm swept across the Lonestar State, the private industries' and public utilities commission's failure to implement proper winterization of power generation resulted in a cascading public utility crisis.⁸⁰ Cold temperatures drove the demand for electricity above the grid operators' previous demand estimates while simultaneously reducing supply due to winterization

⁷⁶ See *infra* Section II.B. for a Pennsylvania specific analysis.

⁷⁷ See TEX. UTIL. CODE ANN. § 31.001(c) (West 2020) (noting that the electricity industry is “becoming more competitive” and “development of a competitive wholesale marketplace that allows for increased participation by electric utilities and certain nonutilities is in the public interest”); see generally Clifford Krauss, Manny Fernandez, Ivan Penn & Rick Rojas, *How Texas' Drive for Energy Independence Set It Up for Disaster*, N.Y. TIMES (Feb. 21, 2021), <https://www.nytimes.com/2021/02/21/us/texas-electricity-ercot-blackouts.html> (Texas “embarked in the nation’s most extensive experiment in electric deregulation, handing control of the state’s entire electricity delivery system to a market-based patchwork of private generators, transmission companies and energy retailers.”).

⁷⁸ The state utility commission can only develop rules and standards to judge the reliability of power delivery. TEX. UTIL. CODE ANN. §§ 38.002, 38.005(a) (West 2020). If the rule or standard was violated to a certain degree the state commission could take regulatory action. *Id.* §§ 38.002, 38.005(a)–(b) (West 2020).

⁷⁹ Eric Douglas, Kate McGee & Jolie McCullough, *Texas Leaders Failed to Heed Warning that Left the State's Power Grid Vulnerable to Winter Extremes, Experts Say*, TEX. TRIB. (Feb. 17, 2021), <https://www.texastribune.org/2021/02/17/texas-power-grid-failures/>.

⁸⁰ *Id.*

failure.⁸¹ The result was 4.5 million Texans without power, rolling blackouts for a week, and the failure of many public water systems due to lack of electricity.⁸² For those who retained access to electricity, the power companies used their market position to increase bills, up to seventy times the normal monthly amount.⁸³ Without the power to regulate prices based on costs in the wholesale market, the commission could do little to prevent the electricity monopoly from price gouging vulnerable citizens in desperate need of electricity. By refusing to properly regulate electric public utilities, Texas experienced widespread system failure and astronomical price increases due to the monopolistic behavior of utilities.

Another advantage of government regulation is that it protects the businesses whose operations rely upon the regulated utility being available consistently and reliably. It also serves as a way for the government to monitor the industry to ensure it is adequately run by way of a “regulatory contract.”⁸⁴ This regulation results in the government granting the firm a pseudo-monopoly, and in return the firm agrees to government oversight of the prices the firm can charge its customers; strict oversight into which assets the firm can purchase and sell; restrictions on the firm’s ability to pick and choose its customers; and designation of a specific service territory.⁸⁵

3. Role of the Public Utilities as a Regulated “Pseudo-Monopoly”

Granting a public utility company a “pseudo-monopoly” is an essential trade-off where the public utility loses the autonomy of a private company but gains special market power like that of a state-owned company because it encourages utilities to provide the service regularly and without interruption, and to plan for long-term demand changes.⁸⁶ Government oversight and assurance of monopolistic access to

⁸¹ Josh Lederman, *How One Texas Storm Exposed an Energy Grid Unprepared for Climate Change*, NBC NEWS (Feb. 17, 2021), <https://www.nbcnews.com/science/environment/one-texas-storm-exposed-energy-grid-unprepared-climate-change-rcna289>.

⁸² *Id.*; Alex Samuels, *Nearly 12 Million Texans Now Face Water Disruptions. The State Needs Residents to Stop Dripping Taps*, TEX. TRIB. (Feb. 17, 2021), <https://www.texastribune.org/2021/02/17/texas-water-boil-notices/>.

⁸³ Giulia McDonnell Nieto Del Rio, Nicholas Borgel-Burroughs & Ivan Penn, *His Lights Stayed on During Texas’ Storm. Now He Owes \$16,752*, N.Y. TIMES (Mar. 1, 2021), <https://www.nytimes.com/2021/02/20/us/texas-storm-electric-bills.html>.

⁸⁴ *See* Wolak, *supra* note 56.

⁸⁵ *Id.*

⁸⁶ *Id.*

the market provides public utilities with economic assurances necessary to invest in preemptively “overbuilding” for future demand changes.⁸⁷ The set-up also allows the government to grant some sovereign power, such as the use of eminent domain, to the firm to enable the lowest cost of production and delivery.⁸⁸ Moreover, regulation allows the government to monitor the firm’s performance to ensure continued, reliable delivery.⁸⁹ Finally, because governments are able to grant protection from new competition to regulated public utilities operating in their jurisdiction, public utility regulations also maintain relatively stable pricing and provide a reasonable, somewhat de-risked, return on investor capital, often attracting investment where an enterprise might not otherwise have attracted private capital.

B. *Pennsylvania-Specific Public Utility Regulation*

Title 66 of the Pennsylvania Consolidated Statute defines what industries are regulated as a public utility.⁹⁰ The following sectors of the economy are classified as public utilities under the current statute: the production, generation, transmitting, distributing, or furnishing of natural gas, electricity, power, and water; transportation of passengers; movement of hydrocarbons by pipeline; canals, tunnels, and bridges; transmitting messages or communications; wastewater collection; and limousines.⁹¹ Some of these activities have been largely deregulated as specified in the statute’s definition of public utilities, most notably electricity generation.⁹² The Pennsylvania PUC regulates all of these industries.⁹³ In order to add an industry to the list of public utilities, the legislature only needs to amend the statute to add the industry and have the governor sign the amended bill.⁹⁴

⁸⁷ Roger D. Colton, *Excess Capacity: Who Gets the Charge from the Power Plant?*, 34 HASTINGS L.J. 1133, 1133–36 (1983) (detailing “overbuilding” in electricity industry and possible actions PUC’s can take to ensure fair rates to consumers).

⁸⁸ See 66 PA. CONS. STAT. § 1104 (2020).

⁸⁹ See, e.g., *id.* § 1307(d) (requiring annual audits of each public entity that automatically adjusts its rates to reflect changes in its fuel costs).

⁹⁰ *Id.* § 102.

⁹¹ *Id.*

⁹² *Id.*

⁹³ See 66 PA. CONS. STAT. §§ 102, 331(a).

⁹⁴ See, e.g., Act of Nov. 4, 2016, No. 154, 2016 Pa. Laws 1180 (codified at PA. CONS. STAT. § 120) (amending by legislation the definition of “public utility” to broaden “sewage collection” to “wastewater collection”).

1. Becoming a Public Utility

If a company desires to own and operate assets in an industry regulated as a public utility, they must receive a Certificate of Public Convenience from the PUC.⁹⁵ In order to receive a Certificate of Public Convenience, the interested company must submit in writing to the PUC, at minimum, a description of the service they seek to provide, the territory where it will be offered, and an explanation as to why that service is needed in that area.⁹⁶ Depending on the industry, the PUC may require more information to be submitted with the application.⁹⁷ The PUC then conducts an investigation and holds public hearings on the proposed public utility.⁹⁸ After completion of the hearings and investigation, the PUC will issue a written order either approving or denying the application for the Certificate of Public Convenience.⁹⁹ The PUC can only grant a Certificate of Public Convenience if it “find[s] or determine[s] that the granting of such certificate is necessary or proper for the service, accommodation, convenience, or safety of the public.”¹⁰⁰ In deciding to grant a Certificate of Public Convenience, the PUC “may impose such conditions as it may deem to be just and reasonable.”¹⁰¹ This process is how the government protects the pseudo-monopolistic nature of public utilities. Additionally, the requirements of the application work to ensure that there are not multiple firms operating in competition with each other in the same geographic area.

2. Effects of Becoming a Public Utility

Receiving a Certificate of Public Convenience provides the business with a number of benefits. For example, the certificate allows the public utility to apply to the PUC to use eminent domain in its building projects.¹⁰² Also, the certificate means the PUC has significant control over the business decisions of the company.¹⁰³ This includes a requirement for the company to seek PUC approval before offering service

⁹⁵ 66 PA. CONS. STAT. § 1101.

⁹⁶ *See id.* §§ 1101, 1103(a).

⁹⁷ *Id.* § 1103(a).

⁹⁸ *Id.* § 1103(b).

⁹⁹ *Id.* § 1103(a).

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.* § 1104.

¹⁰³ *See id.* § 1102.

outside of its certified area,¹⁰⁴ abandoning or surrendering service (besides for non-payment),¹⁰⁵ merging, selling, or acquiring property,¹⁰⁶ acquiring more than 5% of any corporation,¹⁰⁷ and changing customer rates.¹⁰⁸ Accordingly, these statutory provisions concern the “regulatory contract” formed between the commonwealth and the company—the commonwealth gives benefits to the public utility that other private industries do not have access to, but consequentially removes much of the autonomy private industry is accustomed to having. This trade-off is key in public utility industries.

3. Rate Setting by the PUC

With the benefits that public utility designation grants also comes additional oversight. The final major statutory regime common to all public utilities is the rate-setting practice of the PUC.¹⁰⁹ The PUC requires public utilities to file demand portfolios, business plans, and demand predictions with the Commission on timeframes set by the Commission.¹¹⁰ These reports are required based on regulations for the industry in question.¹¹¹ It is in these annual reports that companies typically request rate changes.¹¹²

The PUC is responsible for setting rates that are “just and reasonable” to both the ratepayers and the public utility.¹¹³ In order to change the rates, the public utility must submit a written request detailing what has led them to request the change and

¹⁰⁴ *Id.* § 1102(a)(1).

¹⁰⁵ *Id.* § 1102(a)(2).

¹⁰⁶ *Id.* § 1102(a)(3).

¹⁰⁷ *Id.* § 1102(a)(4).

¹⁰⁸ *Id.* § 1301(1).

¹⁰⁹ *See id.* § 1301.

¹¹⁰ *See* 52 PA. CODE §§ 53.51–53.56 (2020).

¹¹¹ *See id.*

¹¹² JAMES H. CAWLEY & NORMAN J. KENNARD, PA. PUB. UTIL. COMM’N, A GUIDE TO UTILITY RATEMAKING 79 (2018), http://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf (“All utility operations have a cost impact on the income statement. Costs are deducted from revenues, and the net result flows down to the ‘bottom line’, which is negative, positive, or not positive enough.”).

¹¹³ 66 PA. CONS. STAT. § 1301.

then proceed with public hearings on the change.¹¹⁴ The PUC is not constrained to consider only the facts pled by the company; it is empowered to conduct a fact-finding investigation to determine a just and reasonable rate.¹¹⁵ The PUC's final decision "shall not be vacated or set aside, either in whole or in part, except for an error of law or lack of evidence to support the finding, determination, or order of the commission, or violation of constitutional rights."¹¹⁶

In setting the rate, the commission determines what assets the utility has that are in long-term use, which is multiplied by an approved rate of return, and that number is then added to the utilities' operating expenses for the year.¹¹⁷ This number is then divided by the expected number of units sold which equals the per-unit charge to each consumer.¹¹⁸

Despite this simple mathematic formula, there are areas of contention during this process. The largest area of debate is whether an expense will be considered a capital expense, which would collect a rate of return, or a daily operating expense, which is re-cooped at cost.¹¹⁹ The return allowed on capital assets is the firm's source of profit for the year.¹²⁰ The Commission typically allows items to be considered capital if they last for longer than one year and are actually "used and useful" in that rate term.¹²¹ The other significant area of contention is the rate of return allowed by the PUC on capital expenses.¹²² The PUC will select a rate of return that is "sufficient to assure continued adequate service and confidence in the financial integrity of the public utility to maintain its credit and permit it to attract capital."¹²³ This insulates

¹¹⁴ See *Lower Paxton Twp. v. Commonwealth*, Public Utility Comm'n, 317 A.2d 917 (Pa. Commw. Ct. 1974).

¹¹⁵ 66 PA. CONS. STAT. § 1311.

¹¹⁶ See *Lower Paxton Twp.*, 317 A.2d at 919.

¹¹⁷ *Id.* at 920.

¹¹⁸ *Id.*; see CAWLEY & KENNARD, *supra* note 112, at 102–53 (detailing the expenses allowed in rate calculations by PUC, how they are treated, and how consumer rates are calculated).

¹¹⁹ *Lower Paxton Twp.*, 317 A.2d at 919; see CAWLEY & KENNARD, *supra* note 112, at 106–15.

¹²⁰ See CAWLEY & KENNARD, *supra* note 112, at 4.

¹²¹ *Lower Paxton Twp.*, 317 A.2d at 919.

¹²² *Id.* at 921.

¹²³ *Id.* at 919.

public utilities from economic changes and ensures they make a consistent profit each year.

C. *Similarities Between Internet Service Providers and Current Public Utilities*

ISPs' delivery of broadband to consumers has many similarities with industries already identified as public utilities. The most important characteristic is that broadband delivery to consumers is a natural monopoly. As previously discussed, natural monopolies occur when there is a large upfront cost or some other factor that serves as a barrier to entry and when the marginal cost of production nearly always decreases.¹²⁴

First, there is a substantial barrier to entry: ISPs must build the infrastructure needed to provide broadband to the public.¹²⁵ While internet technology is not considered infrastructure in the traditional sense, that sentiment is likely due to its novelty compared to the items we think of as infrastructure, often defined as "the resources (such as personnel, buildings, or equipment) required for an activity."¹²⁶ By applying this definition, it is evident that the wired connections that ISPs supply to the user are indeed infrastructure.

ISPs do not provide the content we view on our computers; rather, they merely provide the wires that connect the local system which customers use to access the "backbone" lines that run across the country connecting regions.¹²⁷ These wired connections are very costly to initially put together due to a multitude of factors, which among the most expensive are the manpower to connect (via wire) each geographic area to the central database and the acquisition of approval to use rights of way to run them.¹²⁸ As a result, these investments represent a large "sunk cost" and pose a huge barrier to entry.¹²⁹

¹²⁴ See *supra* Section II.A.

¹²⁵ See Rahman, *supra* note 2, at 1648.

¹²⁶ *Infrastructure*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/infrastructure> (last visited Jan. 22, 2020).

¹²⁷ Mitchell L. Moss & Anthony M. Townsend, *The Internet Backbone and the American Metropolis*, 16 INFO. SOC'Y 35, 39–40 (2000).

¹²⁸ See MEINRATH ET AL., *supra* note 31, at 35.

¹²⁹ See Rahman, *supra* note 2, at 1648. Sunk cost is the cost incurred before a company makes any profit from the service.

Second, the marginal cost of providing broadband is almost always falling.¹³⁰ This is because once the major rights of way are acquired, the central connection point is set up, and the main “trunk” or “backbone” lines are installed, the cost of running a local wire to a building to connect to the network is minimal.¹³¹ Thus, for each new user the ISP can sign-up, the more spread out their initial startup costs will be, which lowers their marginal cost of providing the service.

With both elements of a natural monopoly met, but without any government oversight, the price gouging and poor service that accompany ISP monopolies are inevitable.¹³² This occurs because ISPs provide a good with inelastic demand and high barriers of entry for other firms, resulting in an unregulated monopoly that has an incentive to manipulate consumer prices to maximize profit.

III. CURRENT REGULATORY FRAMEWORK OF BROADBAND ACCESS

The country’s broadband infrastructure planning and development are administrated at the state level.¹³³ This has led to a patchwork of policies and approaches being developed and implemented around the country.¹³⁴ Some states have chosen to take an “all of the above” approach by implementing all of the ideas that other states are trying, while others have decided to sit back and not regulate much at all.¹³⁵

¹³⁰ *Id.*

¹³¹ See Moss & Townsend, *supra* note 127, at 39.

¹³² See Rahman, *supra* note 2, at 1651–52; Scott Canon, *Kansas City Is a Rare Marker of Broadband Competition in a Fast-Consolidating World*, KAN. CITY STAR (June 30, 2016), <https://www.kansascity.com/news/business/technology/article86939492.html> (stating that Google entering the Kansas City market caused the existing providers of broadband to “now roughly match Google’s gigabit-speed hookups and prices” as well as “fatten[ing] its bandwidth in response”).

¹³³ *How State Policy Shapes Broadband Deployment*, PEW (Dec. 17, 2019), <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/12/how-state-policy-shapes-broadband-deployment>; Heather Morton, *Broadband 2019 Legislation*, NCSL (Jan. 13, 2020), <https://www.ncsl.org/research/telecommunications-and-information-technology/broadband-2019-legislation.aspx>.

¹³⁴ Morton, *supra* note 133.

¹³⁵ *Id.*

A. Current Regulation Around the Nation

Various states are currently attempting different ideas and policies to encourage broadband development.¹³⁶ While some of these policies are complementary, many directly contradict one another. These policies can be divided into five groups: policies creating broadband programs, defining service speed and goals, allocating sources of funding for broadband expansion, regulating competition, and controlling access to existing public utility infrastructure.¹³⁷

The most widely adopted of the five policy categories,¹³⁸ broadband programs either create a new state agency responsible for overseeing and analyzing broadband development or delegate that authority to an existing state agency.¹³⁹ These agencies collect data, create maps of performance and access, and determine where state funds should be used to increase broadband access.¹⁴⁰

States have also widely adopted policies defining service speed and service goals.¹⁴¹ These state-based goals define what exactly the government is trying to achieve through its tracking and investment in broadband infrastructure.¹⁴² Each state has its own perspective on goals and services that are needed within the state.¹⁴³ These goals and definitions assist the state agency charged with overseeing the development of broadband infrastructure by supplying criteria to consider in

¹³⁶ See *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹³⁷ *Id.*

¹³⁸ See Morton, *supra* note 133.

¹³⁹ See *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹⁴⁰ See MINN. STAT. § 116J.39(2) (2020); NEV. REV. STAT. 408.55029 (2020); Ala. Exec. Order No. 704 (Apr. 26, 2017).

¹⁴¹ See IOWA CODE § 8B.1 (2020) (establishing 25/3 Mbps as cutoff in determining if an area is served by broadband); MINN. STAT. § 116J.39(2) (establishing a state broadband office); MO. REV. STAT. § 620.2450(1) (2020) (establishing a grant program to fund broadband access in underserved and underdeveloped areas of the state); VT. STAT. ANN. tit. 30 § 202(2)c (2020) (increasing the state's definition of broadband to 100 Mbps download speed by 2024); WYO. STAT. ANN. § 9-12-105 (2020) (establishing broadband expansion planning requirements for projects); Ala. Exec. Order No. 704 (Apr. 26, 2017) (tasking state Department of Economic and Community Affairs with overseeing broadband development).

¹⁴² See *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹⁴³ *Id.*

allocating funds.¹⁴⁴ In addition, many states have defined broadband at a different speed than the FCC.¹⁴⁵

Funding and finance policies dictate how a state will fund the expansion of broadband infrastructure.¹⁴⁶ States have taken a wide variety of approaches to fund broadband infrastructure.¹⁴⁷ Some states choose to make yearly allocations from the state's general fund, depending on the availability of funds.¹⁴⁸ Others have passed legislation requiring an annual amount to be transferred from the general fund for upgrading infrastructure.¹⁴⁹ Still others fund infrastructure development through fees on telecommunications companies or consumers.¹⁵⁰ Further, some states use different income sources such as toll roads,¹⁵¹ civil fine revenue,¹⁵² and tobacco taxes.¹⁵³ These states then collect all of these resources into a fund, and subsequently, the agency in charge of overseeing broadband development distributes the money to projects around the state.¹⁵⁴

Competition and regulation policies feature organizations that can provide broadband services and determine the methods of providing those services.¹⁵⁵ These policies and regulations vary widely by state.¹⁵⁶ The most noteworthy feature is that

¹⁴⁴ See generally IOWA CODE § 8B.1; MO. REV. STAT. § 620.2450(2); WIS. STAT. § 196.504 (2020).

¹⁴⁵ VT. STAT. ANN. tit. 30 § 202(c) (defining broadband as 100 Mbps download speed); 66 PA. CONS. STAT. § 3012 (2020) (defining broadband as 1.54 Mbps download speed).

¹⁴⁶ See *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹⁴⁷ *How States Support Broadband Projects*, PEW (July 31, 2019), <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/07/how-states-support-broadband-projects>.

¹⁴⁸ S.B. 601, 99th Leg., Reg. Sess. (Mich. 2018).

¹⁴⁹ MINN. STAT. § 116J.39(2) (2020); N.C. GEN. STAT. § 143B-1373 (2020).

¹⁵⁰ 66 PA. CONS. STAT. § 3015(c).

¹⁵¹ STATE OF IND. OFFICE OF THE GOVERNOR, HOLCOMB OUTLINES NEXT LEVEL CONNECTIONS PROGRAM (Sept. 4, 2018), <https://www.in.gov/gov/files/NextLevel%20Connections%20Announcement.pdf>.

¹⁵² 220 ILL. COMP. STAT. 5/13-502.5 (2020).

¹⁵³ VA. CODE ANN. § 3.2-3101 (2020).

¹⁵⁴ See *How States Support Broadband Projects*, *supra* note 147.

¹⁵⁵ See *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹⁵⁶ See *Broadband Statutes*, NCSL, <https://www.ncsl.org/research/telecommunications-and-information-technology/broadband-statutes.aspx> (last updated Aug. 11, 2017).

some states support municipal broadband providers,¹⁵⁷ while others have banned them, outside of extraordinary circumstances.¹⁵⁸

The final category of policies addresses access to existing public utility infrastructure within the state.¹⁵⁹ These statutes take a wide variety of forms. Of particular note are state policies that encourage public-private partnerships by providing favorable funding or expedited permitting.¹⁶⁰ Some states have decided to develop a “dig once” policy,¹⁶¹ which requires any public utility developing new areas or updating existing infrastructure to put empty pipe down to enable laying of fiber optic wires at a later date.¹⁶² Finally, some other states have simply reduced the administrative and regulatory burdens for receiving broadband infrastructure project permits.¹⁶³

The current landscape of ISP regulation demonstrates that each state has taken its own approach to developing broadband infrastructure.¹⁶⁴ Some states have jumped in with both feet and adopted policies from all five policy areas, while others have taken a more cautious approach.¹⁶⁵ No state, however, has declared access to broadband or internet connectivity a public utility.

¹⁵⁷ See generally MINN. STAT. § 429.031 (2020); NEV. REV. STAT. § 268.086 (2020).

¹⁵⁸ WIS. STAT. § 66.0422(2) (2020).

¹⁵⁹ *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹⁶⁰ CAL. GOV'T CODE § 14051 (2020); COLO. REV. STAT. § 38-5.5-109 (2020).

¹⁶¹ NEV. REV. STAT. § 408.200(2) (2020).

¹⁶² See *How State Policy Shapes Broadband Deployment*, *supra* note 133.

¹⁶³ HAW. REV. STAT. § 27-45 (2020) (requiring government to respond within 60 days to infrastructure permit applications); MD. CODE ANN., TRANSP. § 8-654 (LexisNexis 2020) (allowing the use of any right-of-way for broadband communication infrastructure by non-profit providers).

¹⁶⁴ See *Broadband Statutes*, *supra* note 156.

¹⁶⁵ See *id.*

B. Pennsylvania's Regulations

Pennsylvania's broadband regulation is a patchwork of policy statements, limited price oversight, and very limited quality control.¹⁶⁶ The most general of these statutory regulations is a statement in support of developing quality broadband throughout the commonwealth.¹⁶⁷ Despite this statement, the legislature defined broadband as "download speeds of 1.54 megabytes per second."¹⁶⁸ This speed is much lower than the FCC's current definition of broadband.¹⁶⁹

Pennsylvania's goals and definitions are minimally effectuated in Title 66 of the Pennsylvania Consolidated Statutes. Section 3014 once again states the goals for service¹⁷⁰ and establishes processes for consumers to gain access to already existing broadband systems in their area.¹⁷¹ Additionally, the statute requires broadband providers to report data to the commonwealth to assist it in planning how to spend funds for development,¹⁷² appoints the Department of Economic and Community Development to collect the data companies provide,¹⁷³ and inhibits local governments from providing broadband to residents.¹⁷⁴ None of these statutes, however, have any enforcement mechanisms for the commonwealth or PUC to use to meet the statute's goals.

Still, the statute is not entirely without teeth. The legislature does provide the PUC with limited oversight power on price increases¹⁷⁵ and allows oversight of broadband provider consolidation to ensure that there is not a reduction in service.¹⁷⁶ The legislature has also created a fee rider on all broadband payments by consumers

¹⁶⁶ See 4 PA. CONS. STAT. § 13A63(b)(2)(iii)(c) (2020); 66 PA. CONS. STAT. §§ 3011, 3012, 3014, 3015, 3019 (2020).

¹⁶⁷ 66 PA. CONS. STAT. § 3011.

¹⁶⁸ *Id.* § 3012.

¹⁶⁹ See 2015 *Broadband Progress Report*, *supra* note 8 (announcing the increase of download speed to 25 Mbps and upload speed to 3 Mbps for an internet connection to be classified as broadband).

¹⁷⁰ 66 PA. CONS. STAT. § 3014(b).

¹⁷¹ *Id.* § 3014(c).

¹⁷² *Id.* §§ 3014(c)(9), (f).

¹⁷³ *Id.* § 3014(m)(1).

¹⁷⁴ *Id.* § 3014(h)(1).

¹⁷⁵ *Id.* § 3015(a).

¹⁷⁶ *Id.* § 3019(b)(4).

in the commonwealth which is deposited into a Broadband Outreach and Aggregation Fund.¹⁷⁷ It also enabled communities to use Local Share Funds from casinos in broadband development.¹⁷⁸ Accordingly, these two funding devices are the main sources of development for broadband infrastructure in the commonwealth. But besides these actions, there are no other laws on the books in Pennsylvania relating to broadband quality, development, or use.

IV. PROPOSED SOLUTION AND RATIONALE

As broadband access is a natural monopoly, like many of the public utilities currently regulated by the PUC, and given that access to broadband is now nearly as important as access to other utilities, Pennsylvania should bring ISPs under the regulatory authority of the PUC. This step, however, is not wholly necessary across all areas of the commonwealth. Many areas do not have the same access issues that rural regions do, but instead need lower prices to ensure access. Thus, instead of simply amending the public utility code to make internet connectivity a public utility, the statutes need to be amended to allow the PUC room to determine what would best serve each region of the commonwealth. This approach would allow the PUC to select which economic regime would be best in each region: either the quasi-monopoly status granted by receiving a Certificate of Public Convenience or allowing free-market competition to govern both service quality and price. In order to achieve this result, this Note proposes amending two areas of the Pennsylvania public utility code.

A. *Amendments to the Pennsylvania Public Utility Code*

The first part of Title 66 that needs to be amended is the definitions section.¹⁷⁹ This statute defines all significant terms in Title 66.¹⁸⁰ The subsection entitled “Public Utility” should be amended as follows (proposed amended language in italics):

“Public Utility.”

- (1) Any person or corporations now or hereafter owning or operating in this Commonwealth equipment or facilities for:

¹⁷⁷ *Id.* § 3015(c). A fee rider is an additional charge on each customer’s bill.

¹⁷⁸ 4 PA. CONS. STAT. § 13A63(b)(2)(iii)(c) (2020).

¹⁷⁹ *See* 66 PA. CONS. STAT. § 102.

¹⁸⁰ *Id.*

- i. Producing, generating, transmitting, distributing, or furnishing natural or artificial gas, electricity, *internet connectivity*, or steam for the production of light, heat, or power to or for the public for compensation.¹⁸¹

Amending this statute to include internet connectivity will bring ISPs under the regulatory purview of the PUC, allow the PUC to set rates and establish minimum quality of service requirements, and permit ISPs to receive the necessary quasi-monopoly status that makes providing service to less densely populated areas worthwhile for a non-government-based endeavor.

ISPs will likely challenge such regulations as a taking under the Fifth Amendment of the United States Constitution.¹⁸² ISPs will argue that this is an unfair governmental intrusion into private business ownership. In support of their argument, they will cite to United States Supreme Court decisions holding that government regulations that have the effect of limiting intended economic use of a property are an unconstitutional taking,¹⁸³ and that any economic impact that amounts to a taking is actionable.¹⁸⁴ Since the regulatory scheme of the amended statute will force ISPs to comply with public hearings for rate setting, sale of property, changing their service, and changing their service area, ISPs will likely argue that the regulation serves to limit their intended economic use of preexisting infrastructure. Further, they may argue that this change in regulation does more than burden them with a minor economic change and is instead a major economic takeover of their property.

While this argument may hold some sway among the most fervent free-market supporters, it is unlikely to be persuasive in a court of law. The United States Supreme Court has a long history of supporting state regulation of private industry.¹⁸⁵ It has even upheld regulations that go as far as declaring an industry a public

¹⁸¹ *Id.*

¹⁸² U.S. CONST. amend. V.

¹⁸³ *See, e.g.,* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1030–32 (1992) (finding a landowner suffered a taking after state law rendered the land valueless for its intended purposes).

¹⁸⁴ *See* Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 426–35 (1982) (reaffirming the *Penn Central* rule that a taking merely requires a permanent physical occupation of real property regardless of its minimal economic impact on a property owner).

¹⁸⁵ *See* City of New Orleans v. Dukes, 427 U.S. 297, 303 (1976) (“States are accorded wide latitude in the regulation of their local economies under their police powers, and rational distinctions may be made with substantially less than mathematical exactitude.”).

utility.¹⁸⁶ The quintessential case on a state declaring a preexisting industry a public utility is *Munn v. Illinois*.¹⁸⁷ In that case, the state of Illinois declared grain elevators a public utility because the plaintiff, a grain warehouse firm, had developed a horizontal monopoly over most of the grain elevators in the state.¹⁸⁸ Upon gaining the monopoly, the plaintiff exercised excessive price controls over the farmers who relied upon the elevators to get their product into the stream of commerce.¹⁸⁹ In order to protect the agricultural industry, the state legislature declared all grain elevators a public utility, permitting the state to oversee grain prices.¹⁹⁰ The grain warehouse firm continued charging rates without regard to the new regulations and was convicted for violating the law.¹⁹¹ The grain warehouse firm appealed the conviction on the grounds that the regulation was an unconstitutional taking under the Fifth Amendment.¹⁹² The Court disagreed and upheld the legislation, holding that a private business in which the public has a significant interest does not need to be compensated for losses caused by government regulation under the Fifth Amendment.¹⁹³

Over the years, the Court's jurisprudence on state regulation has evolved to uphold any state regulation that has a "reasonable relation" to the problem it seeks to solve¹⁹⁴ and does not cause balkanization between the states.¹⁹⁵ Since amending Title 66 to include internet connectivity as a public utility has the purpose of increasing access to vital broadband for all residents of the commonwealth, it is

¹⁸⁶ See *Munn v. Illinois*, 94 U.S. 113 (1876) (upholding an Illinois statute making the use of grain elevators a public utility).

¹⁸⁷ See *id.*

¹⁸⁸ *Id.* at 131.

¹⁸⁹ *Id.* at 130.

¹⁹⁰ *Id.* at 123.

¹⁹¹ *Id.* at 118–19.

¹⁹² *Id.* at 119.

¹⁹³ *Id.* at 133.

¹⁹⁴ See *Nebbia v. New York*, 291 U.S. 502, 537 (1934) (holding that regulations are not an inappropriate way to serve the public interest); see *Williamson v. Lee Optical, Inc.*, 348 U.S. 483, 487–488, 491 (1955) (holding that state laws regulating business are subject to only rational basis review and the Court need not contemplate all possible reasons for legislation).

¹⁹⁵ See *City of Philadelphia v. New Jersey*, 437 U.S. 617, 626–628 (1978) (holding that state regulation which causes discrimination between similarly situated goods based on the state of origin without a legitimate reason is a violation of the dormant commerce clause).

highly likely a court would find that it has a reasonable relation to solving the problem of inaccessibility and isolation, and would thus allow the amendment to stand.

The next change this Note proposes ensures that the PUC can determine if a region of the commonwealth needs the protection of the quasi-monopoly designation, or if allowing the free market to continue to govern would best serve the residents. In order to do this, Section 1103 of Title 66, entitled “Procedure to obtain certificates of public convenience,” must be amended to allow for special treatment in determining applications regarding internet connectivity.¹⁹⁶ The amendment would add the following paragraph to Section 1103 as a new subsection directly following subsection (a), the current general rule for granting Certificates of Public Convenience to public utilities in the commonwealth:

Internet Connectivity Rule—Every application for a certificate of public convenience shall be made to the commission in writing, be verified by oath or affirmation, and be in such form, and contain such information, as the commission may require by its regulations. A certificate of public convenience *may* be granted by order of the commission, only if the commission shall find or determine that the granting of such a certificate is necessary or proper *to improve service, accommodation, convenience, or access of the public*. The commission, in granting such a certificate, may impose such conditions as it may deem to be just and reasonable. In every case, the commission shall make a finding or determination in writing, stating whether or not its approval is granted. Any holder of a certificate of public convenience, exercising the authority conferred by such certificate, shall be deemed to have waived all objections to the terms and conditions of such certificate.

This new section is identical to the language of § 1103(a),¹⁹⁷ except where emphasis is added. The general rule is modified in two ways. First, this proposal changes the

¹⁹⁶ See 66 PA. CONS. STAT. § 1103 (2020).

¹⁹⁷ *Id.* § 1103(a) (emphasis added to the sentence the proposed amendment would change).

Every application for a certificate of public convenience shall be made to the commission in writing, be verified by oath or affirmation, and be in such form, and contain such information, as the commission may require by its regulations. *A certificate of public convenience shall be granted by order of the commission, only if the commission shall find or determine that the granting of such certificate is necessary or proper for the service, accommodation, convenience, or safety of the public.* The commission, in granting such certificate, may impose such conditions as it may deem to be just

mandatory “shall” to the permissive “may.” This will allow the PUC to weigh the importance of granting quasi-monopoly status in that region, instead of being forced to permit one in the area. The second change removes “or safety” from the PUC list of considerations for granting a Certificate of Public Convenience and replaces it with “access.” This better categorizes the elements the PUC should consider in granting the Certificate of Public Convenience for broadband connectivity. As such, this change will enable the PUC to consider a wide array of broadband-specific issues in deciding how best to address access issues in the commonwealth.

B. *Benefits of this Form of Regulation*

Regions across the commonwealth face divergent issues when acquiring reliable broadband access. These issues are important to consider when examining the benefits of a form of permissive regulation that empowers the PUC to consider the regional needs before granting a Certificate of Public Convenience. Pennsylvania is a diverse commonwealth with two major metropolitan areas: Philadelphia, the eighth largest city in the nation at 6,096,372 residents, and Pittsburgh, the twenty-seventh largest at 2,324,743 residents.¹⁹⁸ Between the two metropolitan areas, the commonwealth is predominately rural. In total, forty-eight of Pennsylvania’s sixty-seven counties (seventy-two percent), which account for much of the land area of the commonwealth, are considered rural.¹⁹⁹ Even with this dichotomy, no median resident in a Pennsylvania county has what the FCC defines as broadband.²⁰⁰ This clearly shows that the market has failed to provide consistent access to broadband across the commonwealth.

This Note proposes further amendments than simply adding internet connectivity as a public utility because it would be inappropriate to take an overly simplistic view of the issue and force a one-size-fits-all solution on the residents of Pennsylvania. A one-size-fits-all approach assumes the same market failure is

and reasonable. In every case, the commission shall make a finding or determination in writing, stating whether or not its approval is granted. Any holder of a certificate of public convenience, exercising the authority conferred by such certificate, shall be deemed to have waived any and all objections to the terms and conditions of such certificate.

¹⁹⁸ *Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2019*, U.S. Census Bureau, https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-metro-and-micro-statistical-areas.html#par_textimage_1139876276 (last updated June 18, 2020).

¹⁹⁹ See MEINRATH ET AL., *supra* note 31, at 12.

²⁰⁰ *Id.* at 7.

affecting the whole commonwealth. An examination of the data shows this is not the case.²⁰¹ There are very different reasons why people in Philadelphia and Allegheny (Pittsburgh's location) counties do not have access to broadband compared to why people in Elk and Bradford counties (North-Central sections of the commonwealth) do not have access. Therefore, allowing the PUC to determine the best method of ensuring access to reliable broadband is key to rectifying the problem.

Absent or inconsistent broadband became a major issue during the COVID-19 outbreak.²⁰² As governments issued stay-at-home orders and nearly all daily activities were either canceled or moved online, people increasingly began to consider the internet essential.²⁰³ While some people across the country have stable and reliable internet, many do not. Lack of internet access seriously affects access to a litany of essential goods and services such as education,²⁰⁴ medical treatment,²⁰⁵ and, in many cases, work.²⁰⁶ Even before the COVID-19 pandemic, Pennsylvania was moving toward allowing virtual learning as a way to alleviate the impact of snow days in public schools.²⁰⁷ After the pandemic, it is likely that many of the virtual

²⁰¹ *Id.* at 66–70 (detailing the lack of broadband in all counties of Pennsylvania despite differences in availability, quality, and population density (rural, urban, suburban)).

²⁰² Jennifer Jolly, *Wi-Fi Woes Are Even Worse During Coronavirus Pandemic, and Only Some of Us Can Do Anything About It*, USA TODAY (Aug. 26, 2020, 7:00 AM), <https://www.usatoday.com/story/tech/columnist/2020/08/26/broadband-digital-divide-slows-learning-work-amid-coronavirus-crisis/3434263001/>.

²⁰³ Emily A. Vogels, Andrew Perrin, Lee Rainie & Monica Anderson, *53% of Americans Say the Internet Has Been Essential During the Covid-19 Outbreak*, PEW RES. CTR. (Apr. 30, 2020), <https://www.pewresearch.org/internet/2020/04/30/53-of-americans-say-the-internet-has-been-essential-during-the-covid-19-outbreak/> (finding only thirteen percent of Americans describe the internet as not too important or not important at all).

²⁰⁴ Lauren Camera, *Disconnected and Disadvantaged: Schools Race to Give Students Access*, U.S. NEWS & WORLD REP. (Apr. 1, 2020), <https://www.usnews.com/news/education-news/articles/2020-04-01/schools-rush-to-get-students-internet-access-during-coronavirus-pandemic> (detailing the lengths school districts around the country have to go to in order to enable internet connectivity for students).

²⁰⁵ *Medicare & Coronavirus*, MEDICARE.GOV, <https://www.medicare.gov/medicare-coronavirus> (last visited Feb. 27, 2021) (“Medicare has temporarily expanded its coverage of telehealth services to respond to the current Public Health Emergency.”).

²⁰⁶ May Wong, *Stanford Research Provides a Snapshot of a New Working-from-Home Economy*, STAN. NEWS (June 29, 2020), <https://news.stanford.edu/2020/06/29/snapshot-new-working-home-economy/> (“We see an incredible 42 percent of the U.S. labor force now working from home full-time.”).

²⁰⁷ 2020 Pa. Laws 13 (temporarily amending 1949 Pa. Laws 30, Public School Code of 1949, to allow “flex days” of at home instruction in place of snow days).

options it ushered in will be here to stay.²⁰⁸ This inevitable wave of virtualization hastened by the pandemic makes ensuring access to reliable broadband even more necessary for the commonwealth.

1. Access in Rural Areas

The market failure to provide access to broadband in rural areas is evident throughout most of Central and Northern Pennsylvania.²⁰⁹ In these areas, pockets of residents do not have access to dial-up internet service.²¹⁰ Even in areas that have access to a broadband provider, the median download speed is 53.5% of the speed in major metropolitan areas.²¹¹ Further, the broadband is usually provided by satellite, which can be unreliable during bad weather²¹² or when trees block the signal during the summer months.²¹³

Accordingly, the data shows that in rural areas the issue with broadband is access to broadband infrastructure.²¹⁴ This market failure occurs because there is not enough of an economic incentive for private companies to build out the infrastructure to serve rural areas.²¹⁵ This makes complete economic sense in the current non-regulated regime. Lines must be laid in order to connect each residence and business.²¹⁶ The price to the company increases the farther apart people live due to the need to acquire more rights of way and increased labor to cover a larger area.²¹⁷ Many private companies look at this cost and decide not to enter the market, leaving

²⁰⁸ See *id.*; Sarah O'Brien, *Medicare Telehealth Expansion Could be Here to Stay. Here's Where Things Stand*, CNBC (Aug. 13, 2020, 9:26 AM), <https://www.cnbc.com/2020/08/13/medicare-telehealth-expansion-could-be-here-to-stay.html>.

²⁰⁹ See generally Sarah Paez & Lauren Muthler, *More Than an Inconvenience, Pa.'s Broadband Crisis Affects Education, Medicine and More*, CTR. DAILY TIMES (Apr. 10, 2019, 8:18 AM), <https://www.centredaily.com/news/local/article228780844.html>; Sasha Hupka, *Please Wait While We Connect You: Rural Broadband Access an Issue in Pa. Capitol*, PHILA. INQUIRER (Aug. 11, 2019), <https://www.inquirer.com/news/pennsylvania-rural-broadband-disparity-tom-wolf-legislature-20190811.html>.

²¹⁰ Hupka, *supra* note 209.

²¹¹ See *id.*

²¹² *Id.*

²¹³ Paez & Muthler, *supra* note 209.

²¹⁴ See MEINRATH ET AL., *supra* note 31, at 25–26.

²¹⁵ *Id.* (stating that these areas largely rely on satellite internet services).

²¹⁶ See Moss & Townsend, *supra* note 127, at 40.

²¹⁷ See KOLKO, *supra* note 11, at 15.

those residents behind. A private company is not going to incur the much larger initial cost to operate in a rural area, only to collect fees from a small number of people. By making internet connectivity a public utility, the commonwealth will ensure that these firms have an economic incentive to service these areas.

Lack of access to broadband severely hurts rural residents. In addition to personal inconvenience, it greatly reduces economic possibility in rural areas. The economic effects run the gauntlet from concrete economic harm, such as decreased home appreciation rates, to more abstract harm like reduced job opportunities.²¹⁸ In particular, local business owners complain of unreliable service,²¹⁹ making it impossible to process credit card transactions and limiting advertising possibilities.²²⁰ For residents, the lack of connectivity greatly reduces their ability to buy or sell products via e-commerce, receive electronic job training, apply to jobs, and receive treatment through telemedicine.²²¹

Consequences of limited broadband access include heavy cellular data use for internet access and increased waiting lines in areas that have public access.²²² Perhaps most disheartening is the general feeling from people that they are being left behind.²²³ Many people blame the lack of broadband access in rural communities on continued population drops and slow recovery from the Great Recession.²²⁴

In response to these conditions, the broadband market is exhibiting the typical rent-seeking behavior one would expect in a natural monopoly.²²⁵ Private companies offer to run lines to connect these rural areas to broadband, but a single line costs ten to twenty thousand dollars more to build than in a city with a dense population.²²⁶ Since there are fewer people to serve, these higher costs can be a deal-breaker for the

²¹⁸ See Paez & Muthler, *supra* note 209.

²¹⁹ *Id.*

²²⁰ See Hupka, *supra* note 209.

²²¹ See Paez & Muthler, *supra* note 209.

²²² Elizabeth Daley, *At Least 1.1 Million Pennsylvania Homes Lack Internet Access*, PUBLICSOURCE (July 18, 2015), <https://www.publicsource.org/at-least-1-1-million-pennsylvania-homes-lack-internet-access/> (detailing the struggles of a family without internet access and increased use of smartphone and public Wi-Fi for internet connectivity).

²²³ See Paez & Muthler, *supra* note 209.

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ *Id.*

local community. Currently, the only hope for relief is government investment in broadband lines for rural areas; but, this is heavily dependent upon the economics of both the federal and state-level budgets in a given year.²²⁷

By classifying the broadband industry as a public utility, private broadband companies will be granted quasi-monopoly protections.²²⁸ Traditionally, these companies are deterred from providing connectivity in rural areas due to high start-up costs. By classifying broadband as a public utility, these companies are assured that residents of these areas must use their services, preventing them from being undercut by other land-based or satellite-based companies, thus ensuring their initial investment is worthwhile. These protections were vital to ensuring the spread of electricity infrastructure and will provide the same protections and economic incentives when expanding broadband infrastructure.

Codifying internet connectivity as a public utility would also give private companies the added benefit of the commonwealth's power of eminent domain afforded to public utilities under Title 66.²²⁹ Allowing these companies to use eminent domain permits the most efficient planning and laying of internet wires to serve rural communities. Planning difficulties and the cost of building out infrastructure would be greatly reduced if broadband companies were exempt from the inconvenience of privately contracting with each landowner for necessary rights of way. For all these reasons, ISPs would benefit from being classified as a public utility.

²²⁷ See STAFF OF H.R. COMM. ON THE BUDGET, 116TH CONG., TRUMP BUDGET DEVASTATES RURAL AMERICA 2 (Comm. Print 2020) (noting the proposed budget would “halt progress on rural broadband”); Press Release, N.Y. State Senator Joseph A. Griffo, Griffo Says Broadband Cuts Hurt Upstate Jobs (Apr. 7, 2010) (<https://www.nysenate.gov/newsroom/press-releases/joseph-griffo/griffo-says-broadband-cuts-hurt-upstate-jobs>) (noting that the removal of a budget allocation will hurt broadband development); Paul Egan & Dave Boucher, *Michigan Limits Spending Cuts to \$250M Under Revamped Budget Plan for 2021*, DET. FREE PRESS (Sept. 23, 2020, 9:53 AM), <https://www.freep.com/story/news/local/michigan/detroit/2020/09/23/michigan-budget-spending-cuts-coronavirus/3501384001/> (noting an allocation of \$14.3 million to expand broadband).

²²⁸ See 66 PA. CONS. STAT. §§ 1101, 1104 (2020) (§ 1101 notes that receiving a Certificate of Public Convenience permits the holder to operate in a specific area; § 1104 bars use of eminent domain until receipt of the Certificate of Public Convenience).

²²⁹ *Id.* § 1104.

2. Access in Urban Areas

In urban areas, issues arise not from total lack of access, but from the unreliability of service and high cost to the user.²³⁰ The economic and infrastructure challenges of laying lines and providing service that exists in rural regions are not at issue in urban areas due to high population density.²³¹ In addition, urban areas require fewer lines to reach more people, so private firms have either already built out infrastructure or can be easily induced to build it out due to the large number of potential customers the investment can reach.²³² As such, free-market competition is best suited to handle these problems.²³³

The Tioga-Nicetown neighborhood of Philadelphia is an example of how the free market is currently failing broadband customers in urban Pennsylvania, but it also illustrates its potential.²³⁴ From 2016 to 2017, Philadelphia was the only major city in the United States to see its broadband access decline year-over-year.²³⁵ Only 71.6% of households in Philadelphia had access to broadband, ranking Philadelphia as twenty-fourth out of the twenty-five largest metropolitan areas in the country in 2017.²³⁶ In Tioga-Nicetown, which is located in North Philadelphia, a neighborhood of 4,000 rowhouses had access to broadband internet in only one in four homes in 2017.²³⁷ North Philadelphia is made up of poorer, predominately Black neighborhoods and broadband access is a particularly pervasive issue in this section of the city.²³⁸ Meanwhile, the East Falls neighborhood, which partially neighbors Tioga-Nicetown but is also located among more wealthy western city

²³⁰ See COUNCIL OF ECON. ADVISORS, *supra* note 11, at 4.

²³¹ See KOLKO, *supra* note 11, at 16.

²³² *Id.* at 15–16.

²³³ See *id.*

²³⁴ See Bob Fernandez, *In Comcast's Hometown, the Chasm Between Internet Haves and Have-Nots Looks Intractable, New Census Data Shows*, PHILA. INQUIRER, <https://www.inquirer.com/news/comcast-digital-internet-access-philly-poor-people-20181210.html> (last updated Dec. 10, 2018) [hereinafter Fernandez, *In Comcast's Hometown*].

²³⁵ *Id.*

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.*; Jason Laughlin, *Point Breeze and Tioga-Nicetown*, PHILA. INQUIRER (Jan. 9, 2020), <https://www.inquirer.com/news/point-breeze-tioga-nicetown-gentrification-philadelphia-census-neighborhood-change-20200109.html>.

neighborhoods, has an eighty-three percent broadband access rate.²³⁹ This vast disparity between two adjacent neighborhoods shows that the rates of broadband access and average income are correlated and that broadband access is a particularly pervasive issue in poorer, predominately Black neighborhoods.²⁴⁰ It also suggests that average income is the single greatest determinant of a household or neighborhood's access to broadband.²⁴¹

The low prevalence of broadband connectivity in Tioga-Nicetown leads its residents to rely on public libraries, churches, and community centers to gain access to the internet.²⁴² The local library reports that people form a line to use the computers from the time it opens to when it closes.²⁴³ In 2018, between 6,000 and 7,000 people per month used the internet at the local library.²⁴⁴ The librarian reported that most of the people using the computers were either school children completing their homework or people seeking employment.²⁴⁵ Down the street at the local Boys & Girls Club, the executive program officer reports that on an average day, the club's sixteen computers have a waiting list, as there are usually around 150 children at the club each day.²⁴⁶

In urban areas like Tioga-Nicetown, the broadband issue does not stem from a lack of infrastructure or access. Instead, the issue is affordability. Thus, the appropriate solution would be to improve competition between firms in the free market and allow free-market mechanisms to adjust over time because costs would be forced down and service would improve.²⁴⁷

In these areas, PUC oversight is not needed and, in fact, could even further restrict access to broadband. If firms are allowed to compete and innovate, prices

²³⁹ Fernandez, *In Comcast's Hometown*, *supra* note 234.

²⁴⁰ Bob Fernandez, *Phila. Is Near the Bottom in the Proportion of Homes with Broadband Service*, PHILA. INQUIRER (Mar. 29, 2015), https://www.inquirer.com/philly/business/20150329_Phila_is_near_the_bottom_in_proportion_of_homes_with_broadband_service.html.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ Fernandez, *In Comcast's Hometown*, *supra* note 234.

²⁴⁴ *Id.*

²⁴⁵ *Id.*

²⁴⁶ *Id.*

²⁴⁷ See COUNCIL OF ECON. ADVISORS, *supra* note 11, at 5.

will drop and service will increase because consumers will likely choose the cheapest firm, the firm that offers the most premium options, or more likely, the firm that best optimizes both features. For example, the Tioga-Nicotown neighborhood is already benefiting from the Comcast program, “Internet Essentials.”²⁴⁸ Operated entirely by Comcast, this program provides discounted broadband to homes in impoverished areas for \$10 a month.²⁴⁹ This private solution to the urban market failure is exactly the format that should be followed to increase connectivity in these areas and shows the resilience and adaptability of the free market. Allowing firms to compete and consumers to select the best option for them will increase access organically without the need for PUC oversight.

Since the free market is already making the proper adjustments to quality and price for these residents there is no need for public utility protections in urban areas such as the Tioga-Nicotown neighborhood. The proposed permissive solution would allow the PUC to leave the free market to its own self-regulating conduct in areas like Philadelphia, while increasing access to rural regions where the free market does not currently have economic incentives to provide service.

V. CONCLUSION

Pennsylvania should make ISPs a public utility and give the PUC power to grant Certificates of Public Convenience based on regional needs within the commonwealth. This form of regulation will allow the PUC to address areas where the current free-market system has failed, while not interfering in areas where it is thriving. Access to reliable broadband is vital to a dynamic, twenty-first-century economy and offers many benefits for those who can rely upon it. Unfortunately, Pennsylvania struggles to ensure that widespread access is available in the commonwealth as the median resident in every county fails to have access to broadband. Gaps in access have led to a lack of economic growth in rural areas and lower-income urban areas being priced out of the market.

ISPs share many of the same criteria as other public utilities, such as operating as a natural monopoly and providing a service that is of particular social importance in its reliability. By amending the public utility code to allow the PUC to regulate internet connectivity, but not forcing the PUC to intervene in all instances, Pennsylvania can work to address the primary market failures concerning lack of infrastructure in rural areas and lack of reliable, affordable service in urban areas.

²⁴⁸ See Fernandez, *In Comcast's Hometown*, *supra* note 234.

²⁴⁹ *Id.*

