Request for Information on Actions and Partnerships to Advance Last-Mile and Middle-Mile Broadband Services in West Virginia

West Virginia Broadband Enhancement Council

c/o West Virginia Department of Commerce
1900 Kanawha Boulevard, East, Building 3, Suite 600
Charleston, WV 25305 I 304-558-2234

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1 Summary

To collect input for the West Virginia Broadband Plan and to identify potential partners and partnerships that could help improve broadband service in the State of West Virginia, the West Virginia Broadband Enhancement Council ("Council") issues this Request-for-Information (RFI). The RFI is directed broadly to companies who deliver broadband service, operate broadband networks, and/or invest in broadband infrastructure. The Council requests information related both to last-mile broadband networks and to middle-mile broadband networks that support them.

2 Purposes of this Request-for-Information (RFI)

The Council is issuing this RFI for several purposes.

1. The Council is engaged in an update to the West Virginia Broadband Plan, last written in 2014. The Council has targeted completion of a new Plan by the end of 2019. Through this RFI, the Council seeks input to shape the recommendations of this Plan from broadband service providers currently in the state, as well as any other service providers who may wish to expand service within the state.
2. The Council seeks to identify unserved areas which the private sector is likely to serve in the near future so as to better target its efforts. It also seeks to identify areas in which a public-private partnership likely is required to spur the availability of required services. In areas requiring a public-private partnership, the Council seeks to identify potential private partners with which it can work together to analyze the options for bringing service. By issuing this RFI, the Council seeks to provide broadly the opportunity for companies to identify their interest in working creatively with the State of West Virginia.
3. The Council also seeks input from companies related to the development of middle-mile assets that can support better last-mile service in West Virginia. The Council itself expects to receive access to a limited number of fiber strands along long-haul fiber routes. Furthermore, in its most recent session, the West Virginia Legislature encouraged the state's electric utilities to

undertake feasibility studies, to be reviewed by the Council, for constructing and operating middle-mile broadband internet projects. The Council seeks comment from last-mile providers who may be able to benefit from these types of networks. The Council also seeks to identify potential private partners who can help operationalize middle-mile assets such as these and further extend their reach. The Council may issue a subsequent Request-for-Proposals (RFP) seeking partners for middle-mile networks based on the input gathered in this RFI, and strongly encourages any parties who may be interested in such an RFP to respond to this RFI.

3 Who Should Respond to this RFI

This Request-for-Information is directed toward four categories of respondents:

1. **Last-mile broadband service providers.** The Council seeks information from broadband service providers who offer internet service to users, including residential and small business users. In particular, the Council is looking for responses from providers who serve customers in West Virginia or those who may be interested in developing operations to serve West Virginia customers.
2. **Middle-mile broadband service providers.** The Council seeks information from broadband service providers who offer bulk internet bandwidth and/or transport services to wholesale enterprise, and/or institutional customers. In particular, the Council is looking for responses from providers who serve customers in West Virginia, those who may be interested in developing operations to serve West Virginia customers, or those who have networks in neighboring states that can or could interconnect with middle-mile networks in West Virginia.
3. **Network operators.** The Council seeks information from companies who provide network operation services to customers who own but do not operate broadband network assets, especially assets used to deliver services to wholesale, institutional, or enterprise users.
4. **Infrastructure investors and developers.** The Council seeks information from private investment funds and other businesses that make investments and develop new middle-mile or last-mile broadband infrastructure, including but not limited to those who do so through public-private partnerships.

Electric utilities that are interested in investigating the feasibility of constructing and operating a middle-mile infrastructure project need not respond to this request for information.

4 Program Goals

4.1 Unserved Target Areas

The Council wishes to make every effort to target its greatest assistance to unserved areas in West Virginia, or "Target Areas." For the purposes of this RFI, a "Target Area" is any area without access to fixed, terrestrial broadband services with a download speed of at least 25 Mbps and an upload speed of at least 3 Mbps at rates comparable to those paid by mass-market (residential and small business) consumers in the more urbanized areas of West Virginia.

4.1.1 Defining Target Areas based on reported service

The Council has produced a map of Target Areas, included as Appendix 1. This map is also available in a GIS file format here. Target Areas in this map have been defined using data reported by Census Block to the Federal Communications Commission as of December 2017 as part of the Form 477 reporting

process. Where the Council knows of specific corrections that reporting companies have made subsequently, it has adjusted the data to reflect them. Census Blocks adjacent to Target Areas are indicated as "Investigation Areas," to indicate that in some cases unserved areas may lie outside Census Blocks reported to the FCC as served.

The Council believes that data reported to the FCC at the Census Block level likely overstates the availability of broadband service in West Virginia, and therefore it regards the Target Areas presented in Appendix 1 as preliminary. Regardless of whether it is shown as a "Target Area" in Appendix 1, the Council will consider any area a "Target Area" where there is credible information that the area is unserved.

4.1.2 NTIA Broadband Mapping Partnership

West Virginia is one of eight states elected by the National Telecommunications and Information Administration (NTIA) to partner in its broadband mapping initiative. This initiative is intended to develop ways to improve the accuracy of broadband mapping across the country.[1] Under this initiative, the Council is working to improve the accuracy and granularity of service provider's reported data, and supplement this with data from other sources. The Council also intends to continue and refine its existing process for collecting speed test data from consumers, an additional source of data about available broadband services. Through this initiative the Council hopes to target its efforts in a more accurate way.

This RFI is not intended to be the primary vehicle for validating, updating or correcting the data reported to the FCC in the Form 477 process. Broadband service providers are encouraged to look for and respond to future requests from the Council as part of the NTIA Broadband Mapping Initiative. However, the Council does seek information about deployed and soon-to-be deployed projects that will improve broadband service in Target Areas beyond that which has been reported.

4.2 Gigabit Cities and Counties

The Council also wishes to identify ways that it can assist more cities and counties in West Virginia gain access to leading-edge "Gigabit" level broadband services. The Council's focus here is assisting state and local governments to remove barriers and provide information that will enable private investment in these types of networks. For the purposes of this RFI a Gigabit City or County is an area in which the local jurisdiction has committed to providing assistance to service providers seeking to invest capital to create access to gigabit services. Neither the Council nor the State has adopted such a designation at this time. The Council seeks input on the usefulness of formalizing various types of informational and permitting assistance under the heading of such a designation.

5 Assistance and Partnership

This section describes different types of assistance and partnership on which the Council seeks input from companies who can assist it in achieving the goals laid out above. Not all forms of assistance are currently available; however, the Council seeks input on which types of current and potential future assistance may be helpful. The Council seeks feedback on how these or other forms of assistance may

[1] https://broadband.wv.gov/index.php?p=resources/news/west-virginia-chosen-to-partner-in-national-broadband-mapping-initiative

be useful to companies interested in working with the State of West Virginia to meet its broadband goals.

5.1 Last-Mile Projects

5.1.1 Permitting and licensing assistance

The Council seeks comment on the extent to which projects serving Target Areas or to create Gigabit Cities and Counties would benefit from assistance in navigating state or local permitting processes in West Virginia, including permits or franchises to public rights-of-way, or other requirements. In a similar manner, the Council also seeks input on how processes for access to utility poles can best facilitate broadband expansion and improvement. The Council also seeks comments on ways that these processes could be further improved to promote expansion of broadband infrastructure and services.

5.1.2 Loan and loan insurance program

The West Virginia Economic Development Authority provides a Broadband Loan Insurance Program.[2] The Council seeks input on this program and the extent to which this or other loan or loan guarantee or insurance programs can help to create additional projects in Target Areas.

5.1.3 Federal grant, loan, and tax incentive technical assistance

Recently, the Council offered information and technical assistance to West Virginia projects seeking funding under the USDA ReConnect Program 2019 funding round. The Council seeks to identify the extent to which last-mile projects require and would benefit from additional technical assistance to identify and take advantage of federal funding and tax incentive opportunities in the future.

5.1.4 Matching fund for federal and private funding opportunities

The Council seeks input on the usefulness of a state matching fund that would assist projects in Target Areas qualify for federal funding opportunities or tax incentive programs, or to financially assist projects in which most investment will be private. The Council does not currently have nor is it currently funded to provide such a program. However, the Council seeks comment on the usefulness of such a program, were it to be offered by the State. Examples of how such a matching fund might be used include but are not necessarily limited to the following:

- Assistance in providing matching funds required by a federal grant
- Providing an incentive to qualifying West Virginia bidders in FCC reverse auctions for universal service support
- Providing co-investment with a private partner seeking to fund a project utilizing a federal tax credit program such as the New Market Tax Credit or a tax incentive program such as the Opportunity Zones program.

5.1.5 Access to mapping data

The Council seeks comment on the need for and usefulness of additional mapping data to help potential projects define service areas, assess the cost and business case of potential projects, and design broadband projects. This data may include more granular and accurate information to distinguish served from unserved areas. It may also be information that identifies potential customer locations or helps companies design their networks in either Target Areas or Gigabit Cities and Counties.

[2] See http://www.wveda.org/node/5.

5.1.6 Access to middle-mile connections and tower infrastructure

The Council seeks to identify ways in which middle-mile and tower infrastructure assets and projects may be of assistance to last-mile projects in Target Areas. Furthermore, the Council seeks comment on the usefulness of access to existing publicly-owned tower assets, and the need for new tower or pole infrastructure for expanding service to Target Areas.

5.1.7 Feasibility studies

The Council seeks to promote strong connections between middle-mile assets such as those described in Section 5.2 below and last-mile projects in Target Areas. The business case of each kind of infrastructure influences the other. The Council seeks to assess the interest from companies to participate in coordinated feasibility studies of interconnected last mile and middle mile projects in the future.

5.1.8 Broadband adoption and use

The Council requests information from companies about initiatives that they support to improve the level of broadband adoption and use among West Virginians. The Council is interested in information about initiatives that would raise the level of broadband adoption and digital literacy among low-income or otherwise disadvantaged populations, and in initiatives that would improve the effectiveness of broadband use among businesses or in education, health care, public safety, and state and local government in general.

5.2 Middle-Mile Assets

5.2.1 Council Fiber Assets

As a result of long-haul fiber optic infrastructure being constructed through the state, the Council expects to receive access to some of the capacity of these networks' "Fiber Assets" that can be utilized as middle-mile infrastructure to advance the state's public purposes.[3]

The Council does not operate middle-mile fiber networks and seeks information on how it may obtain the benefit of the Fiber Assets for its mission and the State of West Virginia through partnership with private companies. The Council seeks input on the types of arrangements that private partners may be willing to enter in order to operationalize the Fiber Assets. At the present time, the Council has made no decision about how to structure any relationship with a private partner, including the precise legal entity that may enter into a partnership agreement.

Although the Council can only provide limited information about the Fiber Assets at this time, generally they are fiber routes that transit the state and provide a limited number of points of access within the state. The Council would expect to provide more specific information prior to seeking a specific proposal from private partners. At the present time, the Council seeks general interest and information about what potential partners may seek in these types of arrangements.

5.2.2 Electric utility middle-mile fiber assets

Under legislation adopted in 2019, West Virginia electric utilities may investigate the feasibility of constructing and operating a middle-mile infrastructure project within the electric utility distribution

[3] See https://broadband.wv.gov/index.php?p=resources/news/governor-jim-justice-announces-collaboration-with-facebook.

system.[4] The Council and the West Virginia Public Service Commission are to assist the electric utilities in the preparation of the feasibility study. The Council seeks information on potential partnerships that could better inform these studies and last mile Internet Service Providers who could be potential users of these projects. The Council intends to use this information to assist participating electric utilities in their work to identify beneficial projects.

5.2.3 Objectives

5.2.3.1 Low-cost bandwidth and transport services for last-mile broadband local access networks

The principal benefit that the Council seeks to obtain from expansions of middle-mile infrastructure described in Sections 5.2.1 and 5.2.2 is the ability to provide operators of last-mile networks in currently unserved areas access to low-cost Internet bandwidth and data transport services, to improve the business case for these networks.

5.2.3.2 Investment in network electronics

The Fiber Assets that Council expects to receive are dark fiber assets and it seeks to identify potential partners who could participate by providing network electronics to deliver lit services over the Fiber Assets. The Council also desires periodic reinvestment and refreshment of the electronics supporting lit services.

5.2.3.3 Financial sustainability

The Council does not expect that funds will be available for ongoing operating expenses of the Fiber Assets, other than revenue that can be derived from users of the network. Therefore, the Council is interested in potential partners and operating models that can deliver operating revenue sufficient to cover ongoing operating expenses.

5.2.3.4 Network expansion

The Council expects that obtaining the greatest value from the Fiber Assets will require its extension to reach unserved Target Areas not directly along the routes to which the Council expects to gain access. The Council seeks information on opportunities to fund these extensions as necessary through reinvested net revenues, federal grants or incentives, and cooperation with electric utility-sponsored projects. The Council would also be interested in partners who can assist in the funding and development of such extensions.

5.2.3.5 Interconnection with existing network infrastructure and services

The Council believes the routes of the Fiber Assets will be more valuable if interconnected with third-party middle-mile fiber assets. The Council seeks to identify potential private partners who can help extend the reach of the network through the interconnection of existing facilities.

5.2.4 Future request for proposals

The Council may issue a subsequent Request-for-Proposals (RFP) seeking partners for middle-mile networks based on the input gathered in this RFI. Although by issuing this RFI, the Council has made no commitment to issue an RFP, it strongly encourages any parties who may be interested in such an RFP to respond to this RFI. Responses to this RFI will help the Council determine whether to issue an RFP, and if so, the nature of the proposals it may seek.

[4] West Virginia Code §31G-4-5.

6 Information Requests

Respondents are asked to use this outline in preparing their responses. If a question is not applicable, please note it in your response. Response to all applicable questions is encouraged, but respondents may choose to answer some but not all questions. Questions are numbered for convenience.

6.1 Requests for All Respondents

1. Is access to debt or low-interest debt a significant constraint on your company's ability to expand in West Virginia. If so, what types of assistance would be most useful?
2. Is access to capital sources other than debt a significant constraint on your company's ability to expand in West Virginia? If so, what types of assistance would be most useful?
3. Have local franchise requirements for broadband infrastructure and service been an important factor for your company in deciding whether not to expand or improve broadband services in any part of West Virginia? If so what were they?
4. Has the length of time in which you were able to obtain local permits or franchises significantly limited or delayed the rate at which you were able to expand services in West Virginia? If so, please describe the process and its impact.
5. Have state permit or right-of-way requirements for broadband infrastructure and service been an important factor for your company in deciding whether not to expand or improve broadband services in any part of West Virginia? If so what were they?
6. Has the length of time in which you were able to obtain state permits or right-of-way access significantly limited or delayed the rate at which you were able to expand services in West Virginia? If so, please describe the process and its impact.
7. Has access to utility poles been an important factor for your company in deciding whether not to expand or improve broadband services in any part of West Virginia? If so which of the following were important factors, and were there any other important factors:
    a. Ability to obtain attachment agreements
    b. Annual attachment costs
    c. Make-ready costs
    d. Make-ready engineering or construction time
    e. Utility and attacher coordination
    f. Dispute resolution
8. Is there a minimum critical mass of expected customers that you require to expand into a new area not immediately adjacent to your existing network? If so, what is it?
9. Has your company participated in federal, state, local or other incentive programs to expand coverage and /or increase broadband speeds? If so, what are some examples that you would consider to have been successful?
10. Would the availability of additional technical assistance make it more likely that your company would participate or expand participation in future federal funding opportunities for projects in West Virginia, including but not limited to USDA and FCC Programs? If so, what types of assistance would be most useful?
11. Would the availability of some state financial assistance for projects in West Virginia make it more likely that your company would participate or expand participation in future federal funding opportunities for projects in West Virginia, including but not limited to USDA and FCC Programs?

12. Would you be interested in partnering with a state or local agency on a project within a Target Area to pursue federal funding under a program that requires a public or non-profit organization to be the recipient of federal funding?
13. What mapping data is most useful to you in assessing, planning, and designing potential broadband projects that state or local entities may be able to collect and provide as a resource?
14. If you are not currently offering services in West Virginia, please briefly describe your company's background and describe:
    a. What portion(s) of surrounding states do you currently serve, if any?
    b. Approximately how many total residential customers do you have? How many business customers?
    c. What technology or technologies do you use to provide broadband service (FTTH, wireless, HFC, etc.)?
    d. What are your current service tiers and pricing?
    e. Do you enforce data caps? If so, how are they structured?
15. What other information should the State know to help it better plan for and assist the development improved broadband service in West Virginia?

6.2 Additional Requests for Last-Mile Service Providers

16. Within the next 24 months, are there any locations within the Target Areas that you currently have within your plan and budget to offer broadband service to at download speeds of not less than 25 Mbps and upload speeds of not less than 3 Mbps? If so, where?
17. What barriers prevent or limit your ability to deploy broadband services in Target Areas?
18. Is affordable access to middle-mile services or networks a significant constraint or requirement on your ability to provide broadband services in Target Areas?
19. Would improved access within Target Areas to low-cost bulk Internet bandwidth and/or data transport services to major peering points or locations on your existing networks significantly improve your ability and interest to expand services into Target Areas? If so:
    a. Where within Target Areas is this access needed?
    b. What price points for bulk Internet bandwidth or transport would it be necessary to achieve to make a significant difference in the business case?
    c. Are there other locations to which you would seek to deliver traffic if expanding into Target Areas, such as peering points, data centers, or points on your existing network?
20. To deploy broadband services in Target Areas, would you potentially be interested in partnering with electric utilities and/or a public-private partnership which would develop middle-mile broadband infrastructure, such as fiber optic lines? If so:
    a. Where and what forms of partnership would be of the greatest interest?
    b. What would be the most important factors that would influence your company's interest in participating?
21. Would you be interested in acquiring access to dark fiber through an Indefeasible Right of Use (IRU) between your company and the electric utility?
22. Would you be interested in collaborating with the Council, electric utilities, and/or other middle-mile partners to assess the business case, feasibility, and assistance required for you to deploy last mile networks in Target Areas, (with supporting middle-mile network services if necessary)? If so, what Target Areas would be of the most interest to you?

23. Does your company have an interest in investing its own capital to develop gigabit-speed networks In West Virginia, including to residential and small business users? If so:
    a. What are some cities or areas in which you have had successful projects? What important factors contributed to your ability to make them a success?
    b. What characteristics of cities or other areas do you consider when choosing an area for investment?
    c. Are there specific types of mapping information that you need to better evaluate candidate areas?
    d. What do typical local permitting and franchising processes look like in areas where you have been successful?
    e. What is typical mass-market (residential and small business) pricing for gigabit services in the areas in which you provide it?
    f. What are typical upload speeds for mass-market gigabit services in the areas in which you provide it?
24. Does your company offer, or does it participate in a program to assist low-income households with difficulty affording standard-priced Internet access and/or computing devices? If so,
    a. What are the services offered?
    b. What are the qualification requirements?
    c. What is the cost to the end user?
    d. What is the level of participation in West Virginia?
    e. What are any barriers to greater participation?
25. What initiatives do you support to improve the level of broadband adoption and digital literacy in the general population? Why do you believe that these initiatives are or would be effective? Who do you believe are the most effective organizations to implement these initiatives?
26. What initiatives do you support to improve the effectiveness of broadband use by businesses, especially smaller businesses? Why do you believe that these initiatives are or would be effective? Who do you believe are the most effective organizations to implement these initiatives?
27. What initiatives do you support to improve the effectiveness of broadband use in education, health care, public safety and state and local government? Why do you believe that these initiatives are or would be effective? Who do you believe are the most effective organizations to implement these initiatives?

For companies operating wireline networks only:

28. Is there a minimum density of premises passed per mile over which you are generally able to sustain a private business case to extend your network? If so, what is it?

For companies operating wireless networks only:

29. Do you currently deploy micro-sites, such as those mounted on utility poles or similarly-sized structures to fill in coverage holes in your network?

30. Is there a minimum number of premises addressable per wireless tower or micro-site over which you are generally able to sustain a private business case for your network? If so, what is it?
31. Would access to any Tower locations in the State Interoperable Network[5] be especially useful to help you expand service into Target Areas?
32. What is the optimal height for your wireless nodes/antenna?
33. To what extent do you prefer to connect your wireless nodes to fiber vs. microwave backhaul? To approximately what extent would you require sites within Target Areas that were directly connected to fiber backhaul?
34. What spectrum would you require to provide service in Target Areas, and do you have access to sufficient spectrum? What bands would you use? Would you require assistance in securing spectrum rights? If so, what kind of assistance?
35. Would you be willing to cooperate with the state to develop standardized wireless propagation models to estimate the extent of wireless broadband coverage at a granular level in the state?

6.3 Additional Requests for Middle-Mile Service Providers, Infrastructure Developers, and Network Operators

36. With what successful public-private partnerships to operate or develop fiber optic networks have you been involved, and why do you believe those were successful?
37. What characteristics of a public-private partnership in West Virginia would enable you to address the partnership objectives of:
    a. Low-cost bandwidth and transport services for last-mile networks
    b. Investment in network electronics and reinvestment in the network
    c. Financial sustainability
    d. Network expansion
    e. Interconnection with existing network infrastructure and services
38. As a private partner in a public-private partnership, how would you recommend that the partnership be structured to increase the number of broadband service providers who could benefit from it to improve broadband service in West Virginia?
39. Do you have existing fiber assets that you would be able and willing to utilize under a public-private partnership that could extend the reach or scope of the State assets, especially those that would:
    a. bring the network closer to unserved premises in Target Areas,
    b. provide access to more users who could contribute to the financial sustainability of the network?
40. What form of public-private partnerships would be most appealing to you as a private partner participating in the operation of the Fiber Assets?
41. Outside of a public-private partnership, if you operate an existing middle-mile network or make investments in middle-mile network infrastructure, what policies or opportunities would you

[5] See SIRN Map at http://wvdhsem.maps.arcgis.com/apps/opsdashboard/index.html#/18aacd5a19c544bd9a3ee4255af5e784. See an overview of SIRN at https://sirn.wv.gov.

recommend that would enable you to offer lower cost bandwidth or transport services to last mile networks attempting to provide service in Target Areas with a challenging business case?

7 How to Respond

7.1 Deadline for Responses

Responses will be accepted on a rolling basis through **November 4, 2019**. However, early responses are encouraged.

7.2 Preliminary Expressions of Interest in Electric Utility Middle-Mile Infrastructure

Internet Service Providers who may be interested in working with electric utilities on feasibility studies into middle-mile infrastructure to be completed in 2019 are strongly encouraged to respond with a preliminary expression of interest by **October 14, 2019**. ISPs who submit a preliminary expression of interest will be contacted to discuss additional information that the Council and the ISP may need to help identify if areas under study by electric utilities are suitable for last-mile projects of interest to the ISP.

A preliminary expression of interest should include:

1. The ISP's name, and a point of contact including name, telephone number and e-mail,
2. A statement that the ISP is potentially interested in using middle-mile fiber optic cable deployed by electric utilities,
3. To the extent possible, a response to questions 19-22 in Section 6.2, including at a minimum the counties in which it is potentially interested in using such facilities if they were to be available.

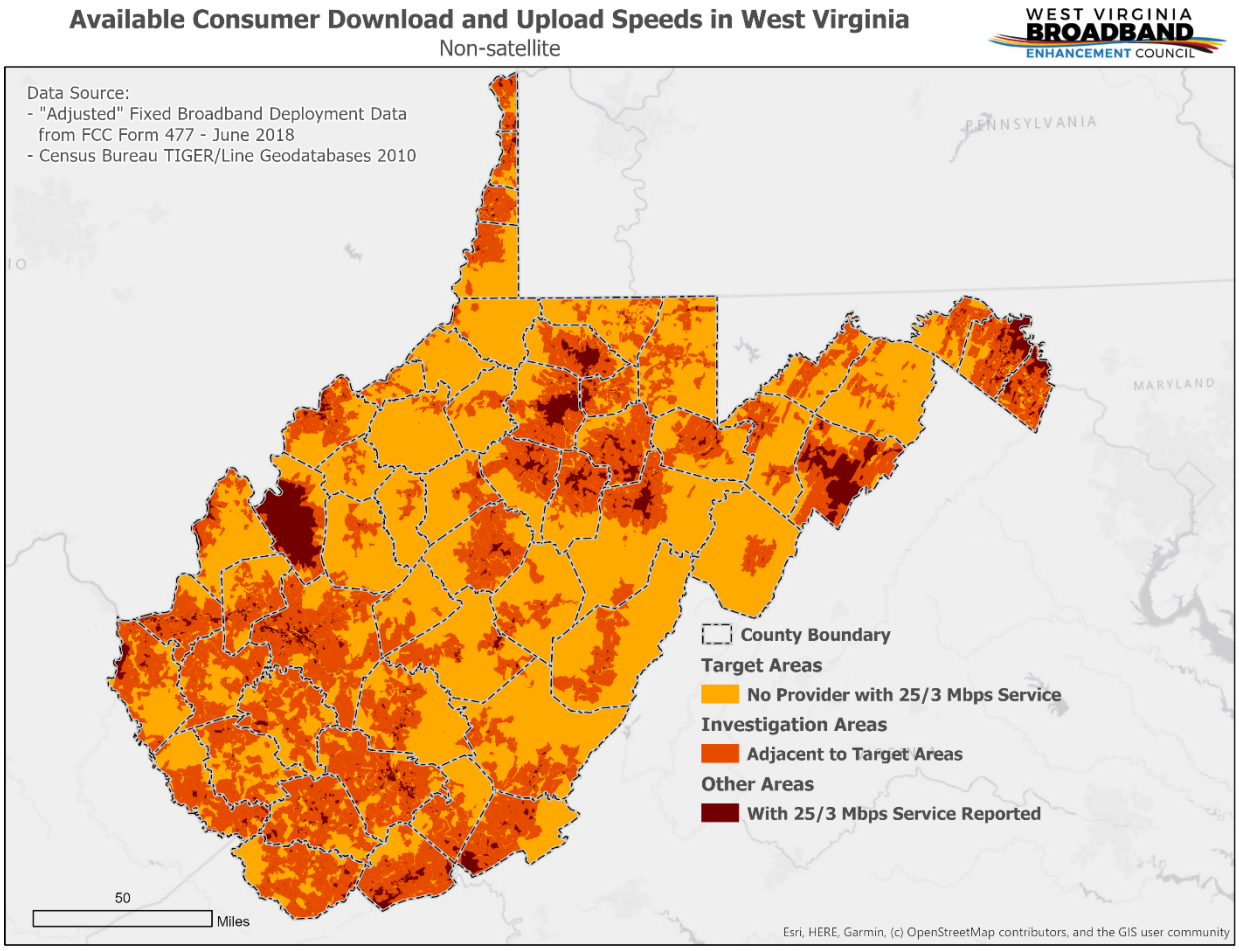
A preliminary expression of interest is not a binding commitment by an ISP to participate in a project with an electric utility. A preliminary expression of interest does not require a comprehensive response to this RFI. The Council will make reasonable efforts to work with any interested ISPs, but due to time constraints may prioritize work in 2019 with ISPs who provide a preliminary expression of interest on or before **October 14, 2019**.

7.3 Filing Requirements

Submit written responses to:

CarolAnn Williams, GIS Manager, Broadband
West Virginia Development Office
West Virginia Broadband Enhancement Council
CarolAnn.Williams@wv.gov
304-957-2024

Appendix 1: Preliminary Target Areas



Unserved areas may fall outside of shown "Target Areas." Regardless of whether it is shown as a "Target Area" on this map, the Council will consider any area a "Target Area" where there is credible information that the area is unserved.