

# 2022 Request for Information on Broadband Infrastructure Programs

State of Connecticut  
Broadband Infrastructure Programs

**July 6, 2022**

**Released by:**

Connecticut Department of Energy and Environmental Protection



# Glossary<sup>1</sup>

<b>Broadband Internet Service Provider</b>	“[A]ny person or entity that provides broadband Internet access service through facilities occupying public highways or streets authorized by the Public Utilities Regulatory Authority, including through a certificate of public convenience and necessity, a certificate of video franchise authority, a certificate of cable franchise authority, or as a certified telecommunications provider.” <sup>2</sup>
<b>Community Anchor Institution</b>	“[A]n entity such as a school, library, health clinic, health center, hospital or other medical provider, public safety entity, institution of higher education, public housing organization, or community support organization that facilitates greater use of broadband service by vulnerable populations, including low-income individuals, unemployed individuals, and aged individuals.” <sup>3</sup>
<b>Distressed Municipality</b>	The Connecticut Department of Economic and Community Development (“DECD”) uses weighted components summed to measure the rank of the 169 towns with respect to distressed municipalities. For each component, every town is ranked from 1 to 169, with the best town scoring 1 and worst 169. The top 25 towns with highest total scores are designated distressed municipalities. A list of DECD designated Distressed Municipalities and additional information on individual components and weight are linked <a href="#">here</a> . <sup>4</sup>
<b>Eligible Program Recipient or Eligible Entity</b>	Potential recipients of Broadband Infrastructure Program funds may be considered eligible if they meet the requirements of the federal program(s) from which the funds have been allocated. Eligible subrecipients of the American Rescue Plan Act (“ARPA”) Coronavirus Capital Projects Fund (“CPF”) include other levels or units of government (e.g., municipalities), non-profits, or private entities. For example, recipients may include co-operatives, electric utilities, and other entities that build or operate broadband networks, including networks that are owned, operated by, or affiliated with local governments. <sup>5</sup> Eligible recipients of Infrastructure Investment and Jobs Act (“IIJA”) funds vary by program but must be capable of carrying out activities in a competent manner.

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<sup>1</sup> Disclaimer: Definitions in this document do not represent a holistic index of all definitions used in the 2021 American Rescue Plan Act (“ARPA”) and the Infrastructure Investment and Jobs Act (“IIJA”). Please be aware that federal guidance is subject to change as this process moves forward, which may affect these definitions. Please visit federal government webpages for [ARPA](#) and [IIJA](#), for the most updated information.

<sup>2</sup> Conn. Gen. Stat. § 16-330a

<sup>3</sup> 47 U.S.C. § 1702 (a)

<sup>4</sup> <https://portal.ct.gov/DEEP/Environmental-Justice/Environmental-Justice-Communities>

<sup>5</sup> U.S. Department of Treasury Guidance for the Coronavirus Capital Projects Fund for States, Territories & Freely Associated States, page 3, available at <https://home.treasury.gov/system/files/136/Capital-Projects-Fund-Guidance-States-Territories-and-Freely-Associated-States.pdf>.

**High-Cost Area**

“[An] unserved area in which the cost of building out broadband service is higher, as compared with the average cost of building out broadband service in unserved areas in the United States (as determined by the Assistant Secretary [of Commerce for Communications and Information], in consultation with the [Federal Communications] Commission), incorporating factors that include -- the remote location of the area; the lack of population density of the area; the unique topography of the area; a high rate of poverty in the area; any identified by the Assistant Secretary, in consultation with the Commission, that contributes to the higher cost of deploying broadband service in the area”

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**Note: This IS NOT a Request for Proposals (“RFP”).**

# 1. Introduction

The Connecticut Department of Energy and Environmental Protection (“DEEP”) hereby issues this Request for Information (“RFI”) to seek input from interested parties to inform the preparation of guidelines for and structure of upcoming state broadband infrastructure deployment programs, specifically the Broadband Infrastructure Program and Broadband Equity, Access, and Deployment (“BEAD”) Program (collectively, “the Programs”), the purpose of which are to support the construction and deployment of broadband infrastructure designed to deliver service that meets a statewide goal of attaining universal access to broadband.

DEEP is focused on developing equitable policies and programs to bring the economic and social benefits of broadband access to the residents and businesses of Connecticut. Signed in 2021, Public Act 21-159 fosters equitable access to broadband in the State of Connecticut and contains various provisions related to broadband internet access service and broadband Internet access service providers. Among other things, it requires the DEEP Commissioner to establish and administer a grant program to support the deployment of broadband service, subject to the availability of federal funding. The Office of Telecommunications and Broadband was established in part to support the Governor’s vision and fulfill these requirements.

DEEP seeks information from entities that may ultimately apply for funding as part of the Programs, from public and private entities that may be interested in contributing assets or providing support for the Programs in other ways, from public interest and consumer representatives, and from other interested parties. DEEP is in the process of developing implementation plans for the Programs. Given the Programs’ scale and goals, DEEP would like to offer interested parties and stakeholders an opportunity to provide information for consideration by DEEP ahead of determining the Programs’ structure.

## **DEEP’s goals in issuing this RFI are to:**

1. Identify strategies for structuring and/or implementing the Programs, and to stimulate interest in providing last-mile broadband access to all unserved and underserved residents of the State.
2. Identify ideas and/or recommendations on how to speed construction and deployment of broadband infrastructure to meet State broadband goals, as described below.
3. Identify suggestions on how the State can leverage partnerships, utilize existing assets, coordinate broadband deployment with other infrastructure improvements, and/or take other steps to expedite broadband deployment and reduce costs.
4. Identify potential challenges and/or barriers to the expansion of broadband access for unserved and underserved areas of Connecticut.
5. Identify gaps in coverage data related to access, speed, affordability, and reliability, and methods to obtain such data.
6. Obtain information on potential technology solutions that might enable broadband access for

underserved and unserved areas of Connecticut.

7. Identify regional considerations that might be relevant to the Programs' ability to meet its goals.
8. Identify barriers that may prevent residents and/or businesses from taking advantage of the benefits of broadband service, and approaches to ensure all Connecticut residents and businesses have access to broadband at reasonable costs.

## **A. RFI Process**

DEEP welcomes responses to this RFI and seeks creative solutions that will maximize investment while providing accessible, affordable, reliable, and resilient broadband service. DEEP plans to issue competitive solicitations related to the Programs in the near term, and, in doing so, may use information obtained from responses to this RFI, or otherwise obtained.

Other than providing input that may help in the development of RFP requirements and scoring criteria, responding to this RFI will not provide any advantage with respect to any such subsequent competitive solicitation, nor will failure to respond to this RFI prejudice any respondent in the solicitation.

## **B. RFI Schedule**

<b>Release of RFI</b>	<b>7/6/22</b>
<b>RFI Public Input Session</b>	<b>7/21/22 at 10:00 a.m. EST</b>
<b>Deadline for Submission of Questions</b>	<b>7/26/22 at 4:30 p.m. EST</b>
<b>DEEP Response to Questions</b>	<b>8/5/22</b>
<b>Written RFI Responses Due</b>	<b>8/26/22 at 4:30 p.m. EST</b>

## **C. RFI Contact Information**

RFI Responses should be submitted by emailing DEEP at [deep.broadband@ct.gov](mailto:deep.broadband@ct.gov). The [linked](#)<sup>6</sup> response template may be used to facilitate responses, but it is not required. If respondents cannot submit via email, RFI responses or questions concerning the RFI may be mailed to the BETP Office.<sup>7</sup>

The subject line of any email or correspondence concerning this RFI must clearly note the RFI and indicate the nature of the submissions (e.g., "State of Connecticut Broadband Infrastructure Programs RFI – Response" or "State of Connecticut Broadband Infrastructure Programs RFI – Questions").

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<sup>6</sup> <https://portal.ct.gov/-/media/DEEP/energy/Broadband/RFI-Response-Template.docx>

<sup>7</sup> Office of Telecommunications and Broadband, 10 Franklin Square, New Britain, CT, 06051

## D. Guidance for Respondents

DEEP may use information obtained from responses to this RFI in its implementation of the Programs. Neither DEEP nor the State of Connecticut will be liable for any costs incurred by any respondent pertaining to the preparation and submittal of any written responses, or for participation in a demonstration in response, to this RFI.

All information submitted to DEEP shall be subject to disclosure under the Connecticut Freedom of Information Act (“FOIA”) unless a statutory exemption applies. When a respondent submits confidential information to DEEP, the respondent acknowledges that FOIA governs the public’s accessibility to that information. All information submitted to DEEP will be publicly posted on the [DEEP Energy Web Filing System](#)<sup>8</sup>, unless a respondent requests confidential treatment of materials submitted pursuant to the procedure below. If a respondent believes that portions of the information that it submits are exempt from FOIA disclosure, the respondent must submit:

- One complete response to this RFI for public posting with all claimed confidential material redacted, which must be clearly labeled PUBLIC, and
- One complete, unredacted response to this RFI for DEEP’s internal review, which must be clearly labeled CONFIDENTIAL on each page.

Respondents must also indicate which FOIA exemption may be applicable to the specific information claimed confidential.<sup>9</sup> Examples of FOIA exemptions include, but are not limited to:

- Trade secrets;
- Commercial and Financial information given in confidence, not required by statute;
- Responses to any request for proposals or bid solicitation issued by a public agency or any record or file made by a public agency in connection with the contract award process, until such contract is executed or negotiations for the award of such contract have ended, whichever occurs earlier, provided the chief executive officer of such public agency certifies that the public interest in the disclosure of such responses, record or file is outweighed by the public interest in the confidentiality of such responses, record or file; and
- Public records exempt under federal law or state statute.

DEEP will not redact proposals submitted on behalf of Respondents. Only legitimate non-public proprietary or sensitive information may be considered confidential. Respondents may not submit a response to this RFI that is entirely redacted. If the redaction is challenged in any forum, it is the responsibility of the Respondents to defend the confidentiality of the information.

DEEP may issue announcements amending this RFI in response to questions. Any revisions to the RFI will also be posted at the following location: <https://portal.ct.gov/deep/energy/broadband-rfi>

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<sup>8</sup> [http://www.dpuc.state.ct.us/DEEPEnergy.nsf/\\$EnergyView](http://www.dpuc.state.ct.us/DEEPEnergy.nsf/$EnergyView)

<sup>9</sup> Conn. Gen. Stat. §§ 1-210 (a) and (b)

DEEP may communicate with any and all third parties, on the subject of this RFI or otherwise, during the pendency of this RFI and/or following the receipt and consideration of RFI responses. This may be through email exchanges, phone discussions, meetings, demonstrations, and/or correspondence, and may be with an individual respondent, a subset of respondents, or all respondents. As RFI responses are reviewed, DEEP reserves the right to send follow-up clarification questions to respondents of further interest, or, at DEEP's discretion, to invite any respondents to make demonstrations at a RFI Technical Meeting, which will be announced on the DEEP website (<https://portal.ct.gov/DEEP/Energy/Broadband>).

## E. RFI Questions and Answers

Respondents may submit questions for clarification of any statements/questions, or for any other reason concerning this RFI, through July 26, 2022. Questions regarding this RFI can be submitted via email to [deep.broadband@ct.gov](mailto:deep.broadband@ct.gov). At its discretion, DEEP may contact respondents who submit questions for clarification before issuing a response. DEEP will issue a public response to questions by August 5, 2022, but DEEP reserves the right to only answer those questions that it determines are germane to this RFI. DEEP may also, in its discretion, combine questions that it deems to be similar and offer one answer. DEEP reserves the right to amend the RFI response submission schedule, depending upon the extent of the questions received.

## 2. Overview of Connecticut Broadband Programs

Congress has recognized that “access to affordable, reliable, high-speed broadband is essential to full participation in modern life,” and that the digital divide “is a barrier to...the equitable distribution of essential public services, including health care and education”.<sup>10</sup> The 2021 American Rescue Plan Act (“ARPA”) Coronavirus Capital Projects Fund (“CPF”) allocated \$10 billion for states to invest in high-quality, modern infrastructure to support communities’ critical needs as they recover from the COVID-19 public health emergency.<sup>11</sup> The CPF allows for investment in the construction and deployment of broadband infrastructure projects that are designed to deliver service that reliably meets or exceeds symmetrical download and upload speeds of 100 Mbps. Recipients are encouraged to focus on last-mile connections, and service providers for completed projects must participate in the FCC’s [Affordable Connectivity Program](#).<sup>12</sup> More detail on the CPF can be found on the Department of Treasury’s Capital Projects Fund [Website](#).<sup>13</sup>

Later in the year the landmark federal Infrastructure Investment and Jobs Act (IIJA) established six broadband programs with the goal of closing the digital equity gap and providing broadband access to the entire country. The largest of the IIJA programs is the Broadband Equity, Access, and Deployment (BEAD) Program, which will provide each state with at least \$100 million to support broadband infrastructure deployment and adoption in unserved areas, underserved areas, and community anchor institutions.<sup>14</sup> More detail on the IIJA broadband programs can be found on the National Telecommunications and Information Administration’s [Website](#).<sup>15</sup>

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<sup>10</sup> 47 U.S.C. § 1701

<sup>11</sup> 42 U.S.C. § 804

<sup>12</sup> <https://www.fcc.gov/acp>

<sup>13</sup> <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/capital-projects-fund>

<sup>14</sup> 47 U.S.C. § 1702

<sup>15</sup> <https://www.ntia.doc.gov/category/grants>



## A. Broadband Infrastructure Program

The Connecticut General Assembly appropriated two funding tranches in Section 307 of [Public Act 21-2](#)<sup>16</sup> of the June 2021 Special Session for broadband infrastructure development utilizing the CPF. The first tranche set aside \$10 million for “Low-Income/Multi-family Curb-to-home Broadband infrastructure buildout.” The second tranche set aside another \$10 million for “underserved area broadband infrastructure grants.” In a subsequent adjustment to these funding tranches, Section 11 of [Public Act 22-118](#) combined them for the State’s 2022 fiscal year for “multi-family curb-to-home and business broadband infrastructure buildout and underserved area broadband infrastructure grants” and allocated an additional \$23 million from ARPA CPF for the State’s 2023 fiscal year for these grants. Buildout of broadband infrastructure from curb-to-residences for low-income residents is a critical component to digital equity. DEEP reserves the right to define “underserved” within its discretion, provided the definition aligns with the statutory and program guidelines of ARPA.

## B. Broadband Equity, Access, and Deployment (“BEAD”) Program

The federal BEAD Program surpasses previous investments in broadband by a significant margin, with each state receiving at least \$100 million for broadband planning, deployment, mapping, equity, and adoption activities. This program prioritizes funding of projects based on two categories of broadband service locations defined within the IJA:

- Unserved location, which means “a broadband-serviceable location, as determined in accordance with the [FCC] broadband DATA maps, that has no access to broadband service; or lacks access to reliable broadband service offered with a speed of not less than 25 megabits per second for downloads; and 3 megabits per second for uploads; and a latency sufficient to support real-time, interactive applications.”<sup>17</sup>
- Underserved location, which means “a location that is not an unserved location and[,] as determined in accordance with the [FCC] broadband DATA maps, lacks access to reliable broadband service offered with a speed of not less than 100 megabits per second for downloads; and 20 megabits per second for uploads; and a latency sufficient to support real-time, interactive applications.”<sup>18</sup>

Under the BEAD Program, states must prioritize funding for unserved service projects, in which “not less than 80 percent of broadband-serviceable locations served by the project are unserved locations.”<sup>19</sup> Once unserved locations are ensured coverage, states may then use remaining funds for underserved service projects, in which “not less than 80 percent of broadband-serviceable locations served by the project are unserved locations or underserved locations,” and lastly to community anchor institutions lacking access to 1 Gbps service.<sup>20</sup>

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<sup>16</sup> <https://www.cga.ct.gov/2021/ACT/PA/PDF/2021PA-00002-R00SB-01202SS1-PA.PDF>

<sup>17</sup> 47 U.S.C. § 1702 (a) (Internal section breaks removed.)

<sup>18</sup> *Id.*

<sup>19</sup> 47 U.S.C. §§ 1702 (a) and (h)

<sup>20</sup> *Id.*

## C. Program Goals

The CPF Broadband Infrastructure Program funding, together with pending funding for the BEAD Program, will allow eligible entities to significantly expand access to affordable and reliable internet service for all, especially low-income and underserved areas of the State. The Programs will directly enable residents' ability to participate in modern social and economic life, including telework, remote learning, and online health services, while building future-proof infrastructure to serve their long-term needs.

Important elements of the Programs include:

- Progress towards a state-wide goal of universal access to broadband Internet at download speeds of 1 gigabit per second (Gbps) and upload speeds of 100 Mbps per second, while delivering symmetric speeds of 1 Gbps for community anchor institutions
- Address affordability as a barrier, including consideration of whether broadband service options offered by Program recipients will be affordable to their target markets in the proposed service area
- Prioritize addressing unserved and underserved areas of the state, and in particular unserved areas in distressed municipalities
- Prioritize investment in fiber-optic technology as a means of future-proofing investments in broadband infrastructure
- Advocate for regulatory initiatives that support or expedite broadband infrastructure deployment
- Improve the resiliency and reliability of broadband networks by prioritizing more robust topologies and methods of infrastructure deployment
- Promote open broadband infrastructure where possible to increase competition and maximize public access to affordable broadband
- Foster alternate broadband service provider arrangements and partnerships to expand local/last mile broadband network options
- Focus on projects that will achieve last-mile and curb-to-building connections

## 3. Broadband Access in Connecticut

Despite having the sixth-highest median household income in the United States, Connecticut ranks 12th in the U.S. in broadband subscription rates (87%)<sup>21</sup> and 41st in the availability of synchronous gigabit service (estimated to be available to 18.3%<sup>22</sup> of residents). Despite its small size, Connecticut faces a variety of obstacles to achieving its goal of universal access to gigabit speeds – challenging terrain and low population densities in the rural areas in the northwest and southeast of the state, and inequities<sup>23</sup>, aging housing stock, and wiring difficulties in urban areas. These challenges are only compounded by a lack of reliable deployment

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<sup>21</sup> <https://ctmaps.maps.arcgis.com/apps/instant/minimalist/index.html?appid=9710b44704ef40999f4458ece8fc904f>

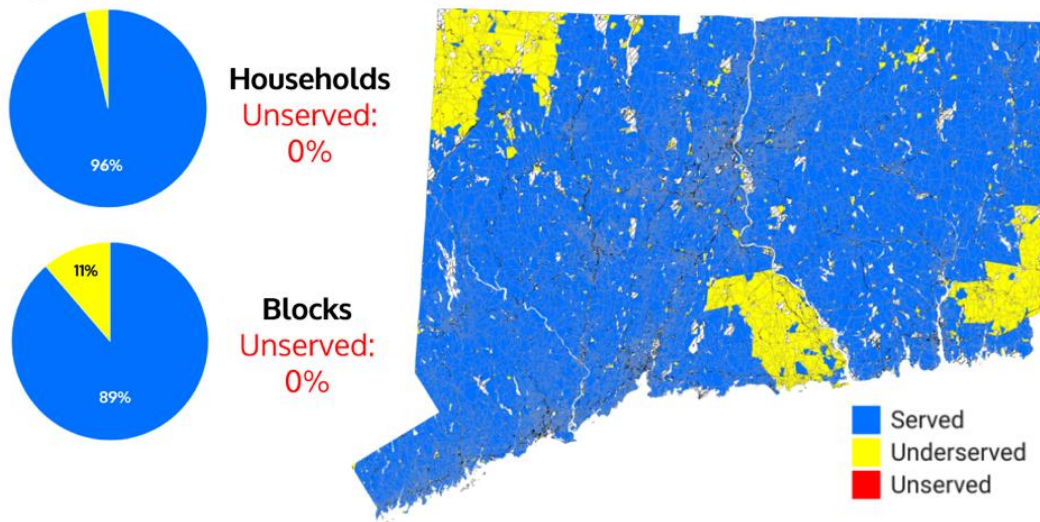
<sup>22</sup> <https://broadbandmap.fcc.gov/#/>

<sup>23</sup> [https://www.dalioeducation.org/Customer-Content/www/CMS/files/DigitalDivide\\_Report\\_2020\\_Final.pdf](https://www.dalioeducation.org/Customer-Content/www/CMS/files/DigitalDivide_Report_2020_Final.pdf)

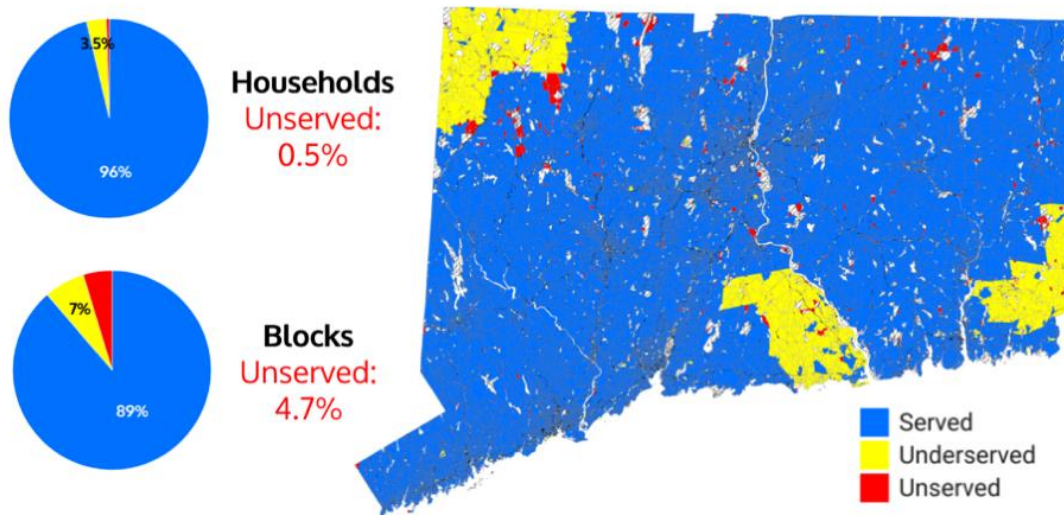
data.

FCC data is currently the most complete source of broadband deployment data available. However, the FCC's Form 477 collects data at the census block level and can result in areas as large as 8.5 square miles being coded as "served" based on only a handful of homes. Additionally, FCC broadband deployment data provides only maximum advertised download speeds and no information on rates of adoption, plans used, or quality of service to the end-user. The result is that the most reliable source of information on broadband access depicts Connecticut as universally covered by broadband internet service as seen in Figure 1 below.

**Figure 1: Broadband Connection Speeds (All Types)**



**Figure 2: Broadband Connection Speeds (Wireline\*)**



All data sourced from FCC Form 477 Fixed Broadband Deployment  
\*Business-only, fixed wireless, and satellite connections have been excluded

As seen in Figure 2 above, when fixed wireless, satellite, and business-only connections are excluded from analysis, even current FCC data, despite its lack of detail, demonstrates that there are significant areas of the state that still lack quality internet service.

- As of December 2020, FCC data suggests that some 50,000 Connecticut households are unserved or underserved.
- FCC data suggests that underserved areas are clustered in Litchfield, Middlesex, and New London Counties. Low population densities in these areas are a significant challenge with unserved and underserved areas in Middlesex, New London, and Litchfield Counties having an average of 135, 55, and 26 households per square mile respectively, compared to an average of 250 across the state of Connecticut.
- Beyond unserved and underserved rural areas, low levels of internet subscription and broadband speed connections are clustered in Connecticut’s urban areas. According to 2019 [American Community Survey data](#)<sup>24</sup>, Connecticut’s four largest cities (Bridgeport, Stamford, New Haven, and Hartford) have [estimated broadband subscription rates](#)<sup>25</sup> of 64.7%, 81.7%, 69.1%, and 56.5% respectively.

## 4. Information Requested from All Stakeholders

DEEP welcomes ideas and recommendations from all interested or potentially interested broadband stakeholders (eligible RFI respondents listed below). **Respondents are not required to submit responses pertaining to every question**, but DEEP encourages interested parties to respond to all aspects of this RFI that are relevant to them.

Providing a response to any or all of the questions is not mandatory, nor a condition of qualification for any potential future RFP. Questions in Section 5 are specifically directed to broadband Internet service providers and/or eligible entities that would intend to own or operate a broadband network individually or with a partner or partners. You should feel free to answer any other questions in your capacity as an interested party and based on your knowledge.

### A. General

1. Please identify yourself and any organization(s) you represent in this RFI.
  - a. Name of respondent
  - b. Organization and affiliation
  - c. Address (organizational, if responding on behalf of an entity)
  - d. Contact information (phone number(s) and email address)
2. Indicate in what capacity you are responding:
  - a. (1) Municipality/Council of Government, (2) Tribal government, (3) Elected official, (4) State agency, (5) Broadband service provider, (6) Economic development organization, (7)

<sup>24</sup> <https://data.census.gov/cedsci/table?q=internet&g=0400000US09%240600000&tid=ACST5Y2020.S2801>

<sup>25</sup> <https://ctmaps.maps.arcgis.com/apps/instant/minimalist/index.html?appid=8f37471607594da2a14937570ba2be9b>

Local business, (8) Nonprofit organization, (9) Community-based organization, (10) Community anchor institution, (11) Coalition/association, (12) Faith-based organization, (13) Other (please describe)

## **B. Program Structure**

### **i. Participation and Partnerships**

Both ARPA and IJA programs open eligibility to a wide range of potential applicants, including local governments, cooperatives, nonprofit organizations, public-private partnerships, private companies, public or private utilities, public utility districts, and other non-traditional broadband providers who are interested in meeting broadband needs. It is anticipated that proposals of various forms, including those based on public-private partnerships (P3s) or other joint ownership or owner-operator models, may qualify for funding available through the Programs.

1. In order to address the broadband needs of the higher cost, lower return areas of the State, and to stimulate competition and innovation in the preparation of applications under these Programs, what models of partnerships should be considered and/or prioritized, and in what cases?
2. What are the risks and benefits of such partnerships, joint-ownership, or owner-operator models? How should the risks be mitigated, and benefits be maximized, and how should they be quantified?
3. Where there may be opportunities for partnerships for coordinated deployment with electric or municipal infrastructure, how should the costs be fairly allocated?
4. From a purely cost-based perspective, incumbent broadband providers may have an advantage in developing competitive bids due to their embedded infrastructure. What factors other than cost should be prioritized to maximize competition and public benefits?
5. How should proposals from non-traditional providers be compared to proposals from Incumbent Broadband Providers?
6. How might DEEP structure the Programs to increase competition amongst providers with the goal of incentivizing affordable and reliable service plans?
7. Please describe your suggested approach for ensuring a reliable supply of skilled workers, creating good-paying jobs, and for recruiting and hiring women and other historically marginalized groups for the job opportunities created through the Programs.
8. How might DEEP avoid an excessive number of grants, which could impose an undue administrative burden (i.e., should there be a requirement to cover a minimum territory, such as a census block, municipality, or franchise area, or a minimum number of customers)? Please comment on such a requirement and the minimum geographic area that should be covered by each bid.

## ii. Timeline

ARPA CPF infrastructure program projects must be completed and operational by December 31, 2026. The IJJA BEAD program projects must have their broadband networks deployed not later than four years after the date the subgrantee receives grant funds. DEEP will execute its Programs as expeditiously as possible to enable potential participants to meet federal timelines.

1. Please describe any specific geographic considerations and/or barriers that you believe might impair the Program's success in meeting its goals in your region of the State, and your proposed solutions for addressing those regional considerations/barriers.
2. Some stakeholders have commented that broadband infrastructure construction has been delayed or impacted due to "make ready" issues, pole attachment complications, and other core infrastructure issues, such as access to rights-of-way and trenching. Please share your concerns about any such issues that could delay or adversely impact network construction, and any potential solutions that could be leveraged through these Programs.
3. Are there any regulatory requirements that you believe would pose challenges for achieving the goals of the Programs?
4. Should the State prioritize shovel-ready projects, or projects where a potential program applicant has ready data to support the existence of unserved or underserved areas? Why or why not?
5. If the State prioritizes shovel-ready or data-ready projects, should it also reserve tranches of funding for projects that are more complex, or that require more planning and data gathering? If so, how should those tranches be designed?

## iii. Matching Contributions

The ARPA CPF Program does not require a matching contribution, but PA 21-159 allows the DEEP Commissioner to give priority to program applicants based on a commitment to a percentage of cost sharing. The IJJA BEAD Program requires a matching fund contribution of not less than 25% of the expected project cost where feasible, except in designated "high-cost areas". The matching requirement may also be waived in full or part in other circumstances, such as when a match could deter participation in the BEAD Program by small and non-traditional providers, in marginalized or low-income communities, or could threaten affordability.<sup>26</sup>

1. Should the State prioritize projects where the applicant is contributing a percentage of cost, even for the ARPA program? If so, what exceptions should apply?
2. Propose how the State should define "high-cost area" and any supporting data you may have.

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<sup>26</sup> NTIA understands that a match requirement could deter participation in the BEAD Program by small and non-traditional providers, in marginalized or low-income communities, or could threaten affordability (i.e., if an applicant seeks to offset the cost of a substantial match through higher end user prices). A waiver request must describe the special circumstances underlying the request and explain how a waiver would serve the public interest and effectuate the purposes of the BEAD Program. The Assistant Secretary retains the discretion to waive any amount of the match, including up to the full 25 percent requirement.

3. The match requirement for the IJJA BEAD program does not need to be fully met by the subgrantee. Under what conditions should the State consider contributing a portion of ARPA CPF monies as a component of matching funds for IJJA BEAD?
4. Should the State consider “in-kind” or other forms of matching contributions? Why or why not, and what forms might make sense in meeting program goals?

## C. Program Strategy

### i. Broadband Technologies and Speed

The ARPA CPF requires infrastructure projects to deliver broadband Internet service with reliable speeds of at least 100 Mbps symmetric unless impracticable.<sup>27</sup> The service requirements outlined in the IJJA BEAD Notice of Funding Opportunity<sup>28</sup> (NOFO) consider qualifying broadband 100 Mbps/20 Mbps for locations that are not community anchor institutions and 1 Gbps download and 1 Gbps upload for community anchor institutions. PA 21-159 outlines a goal of universal access to 1 Gbps/100 Mbps. Both federal programs encourage prioritizing investment in fiber-optic infrastructure, and the IJJA BEAD NOFO states that proposals that use end-to-end fiber-optic architecture will be considered priority projects.

1. What is the best technology to address these requirements and priorities, and why?
2. Given the federal programs’ preference for fiber-optic infrastructure, the State will prioritize projects that deliver last mile service via fiber. Should any exceptions, other than those noted in federal program guidance, be made? If so, under what conditions?
3. The BEAD Program requires a latency measurement at or below 100 milliseconds round-trip time. Should the State adopt a similar requirement for the Broadband Infrastructure Program? Why or why not?
4. What consumer and commercial applications of broadband do you anticipate will drive the need for increased speeds over the next five years? In five years, what download and upload speeds do you anticipate will be required by consumers? By businesses? Please explain your rationale.
5. The State’s current goal is universal access to 1 Gbps/100 Mbps. Given your answer to the question above, will the State’s current speed goal provide adequate service for residents and businesses in Connecticut to participate meaningfully in a competitive economy, fully engage in civic life, and access health services, job opportunities, and educational resources? If not, what speed goal should the State consider and why?
6. Please provide any other comments and/or recommendations relative to the technology to be

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<sup>27</sup> U.S. Department of Treasury Guidance for the Coronavirus Capital Projects Fund for States, Territories & Freely Associated States, page 4, available at <https://home.treasury.gov/system/files/136/Capital-Projects-Fund-Guidance-States-Territories-and-Freely-Associated-States.pdf>.

<sup>28</sup> <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf>

used by participants in the Programs.

## **ii. Open Access**

The IJJA BEAD Program encourages the State to adopt selection criteria promoting subgrantees' provision of open access<sup>29</sup> wholesale last-mile broadband service for the life of the subsidized networks, on fair, equal, and neutral terms to all potential retail providers. This approach has proven successful in expanding access and increasing competition in other areas of the country. In addition, the BEAD Program requires that any funded network deployment project that involves laying fiber-optic cables or conduit underground or along a roadway must include interspersed conduit access point at regular and short intervals for interconnection by unaffiliated entities.<sup>30</sup>

1. Which open access models would you suggest and why? What design elements are important to successful open access implementation?
2. Given the above speed and future-proofing parameters, should the State prioritize open access architecture in criteria for all programs, including the Broadband Infrastructure Program under ARPA CPF? Why or why not?

## **iii. Underground Infrastructure**

Some stakeholders have expressed that aerial telecommunications infrastructure is susceptible to delays due to attachments or 'make ready' work and is an operational risk due to the potential for storm damage.

1. In what contexts should the State prioritize undergrounding infrastructure?
2. What are the costs of undergrounded infrastructure versus aerial infrastructure?
3. How could the Programs be coordinated with state or municipal road improvements, or other telecommunications carrier, broadband service provider, or utility trenching events? If coordination did occur, how should costs be allocated?
4. How could the Programs be coordinated with undergrounding efforts by the electric utilities? What regulatory approaches would be necessary to ensure timely construction under ARPA and IJJA requirements? If coordination did occur, how should costs be allocated?

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<sup>29</sup> The NTIA defines the term "open access" for purposes of the BEAD Program as an arrangement in which the subgrantee offers nondiscriminatory access to and use of its network on a wholesale basis to other providers seeking to provide broadband service to end-user locations, at just and reasonable wholesale rates for the useful life of the subsidized network assets. For this purpose, "just and reasonable wholesale rates" means rates that include a discount from the provider's retail rates reflecting the costs that the subgrantee avoids by virtue of not providing retail service to the end user location (including, for example, marketing, billing, and collection-related costs).

<sup>30</sup> The State must require prospective subgrantees to propose to deploy a reasonable amount of excess conduit capacity and to propose a conduit access point interval as part of the grant application process. The State must consider the adequacy of the prospective subgrantee's proposed excess conduit capacity and access points when evaluating the application.



#### **iv. Middle Mile Network Infrastructure**

Middle mile infrastructure generally refers to the physical mid-section of the infrastructure required to enable internet connectivity for homes, businesses, and community institutions. Expansion and extension of middle mile infrastructure can reduce the cost of connecting unserved and underserved areas to the backbone of the Internet and improve connection resiliency by preventing single points of network failure.<sup>31</sup>

1. Are there areas of the state that need middle mile infrastructure to add Internet resiliency and reliability?
2. Are there areas of the state where additional middle mile infrastructure would enable the participation of additional last-mile providers or partnerships and ultimately reduce costs to end users, especially in underserved areas?

Many states are expanding middle mile networks as a means of ensuring communications to community anchor institutions and facilitating last mile deployments by broadband Internet service providers. The State of CT operates the Connecticut Educational Network (CEN), a middle and last-mile network with an extensive footprint providing network services to community anchor institutions across the state. This investment keeps costs low and provides aggregate services that would be unaffordable without the scale of the state.

3. What would be the advantages or disadvantages to an investment in and scaling up of CEN's open access capabilities for last mile network providers? If it would be advantageous to do so, where and how?
4. Conn. Gen. Stat. § 4d-82 allows for CEN to bring internet access to not only schools and libraries, but also to "other institutions including businesses, job centers and community organizations". Should CEN's existing network services be expanded outside of its currently served populations?
5. Under what conditions would or should last mile operators consider using CEN for transport and/or Internet?

#### **v. Program Alignment**

The ARPA CPF has different and, in some ways, less restrictive award criteria than IIJA, including speed requirements and prioritized areas. As discussed above, the IIJA BEAD Program requires projects to prioritize unserved followed by underserved areas and community anchor institutions, while the ARPA simply requires projects to deliver 100 Mbps symmetrical broadband speeds where practicable. The State will need to tailor its broadband programs to maximize the opportunity of both federal programs while aligning to the requirements.

1. Due to the timing of these federal funding sources, the IIJA BEAD Program's grant application

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<sup>31</sup> <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/MIDDLE%20MILE%20NOFO.pdf>

period will likely begin after the CPF-funded Broadband Infrastructure Program begins awarding grants. In order to conserve sufficient CPF funding for locations not covered by the BEAD Program, should the State structure the Programs so that proposals for known unserved locations are deferred to the BEAD Program? Why or why not? If so, which criteria should it use to make that determination?

2. How might the State equitably balance funding for projects in low-density rural areas with proposals in high-density urban and suburban areas? What other geographic obstacles or disparities (i.e., economic) should the State consider?
3. What type of projects would be most applicable or beneficial under the Broadband Infrastructure Program?
4. Comment on or recommend approaches to align and maximize funds from both federal programs.

## **D. Affordability, Adoption, and Equity**

The ARPA CPF and IIJA BEAD require recipients to consider affordability to target markets in proposed service areas. The U.S. Treasury's CPF Guidance encourages DEEP to require that service include at least one low-cost option offered at speeds that are sufficient for a household with multiple users to simultaneously telework and engage in remote learning.<sup>32</sup> Service providers for a completed project must address a "critical need" of the community it serves and participate in federal programs that provide low-income consumers with subsidies on broadband internet access services. The IIJA BEAD Program requires a plan to ensure that all consumers have access to affordable high-speed internet, in addition to at least one low-cost plan option.<sup>33</sup> A definition for "low-cost broadband service option" must be proposed by DEEP and approved by the National Telecommunications and Information Administration (NTIA), which administers IIJA grant programs.

1. Please comment on how the State should determine the threshold of affordability for broadband service under ARPA and IIJA, respectively.
2. Which elements of an affordable program (e.g., service price, speed, device subsidy, content) do you believe are most critical?
3. How would you define "low-cost service broadband option"? How would you propose addressing this requirement?
4. Per CPF guidelines, the State may choose to consider any available data it deems relevant when determining the individuals and communities with a "critical need," including federal and/or state collected data, interviews with community members and business owners, and reports from community organizations. What types of data should the state consider when evaluating whether

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<sup>32</sup> U.S. Department of Treasury Guidance for the Coronavirus Capital Projects Fund for States, Territories & Freely Associated States, page 5, available at <https://home.treasury.gov/system/files/136/Capital-Projects-Fund-Guidance-States-Territories-and-Freely-Associated-States.pdf>.

<sup>33</sup> 42 U.S.C. 1702 (h)

a project will serve a critical need?

5. How should equity be considered in the selection of projects? What criteria should define a project as advancing equity?
6. Communities that lack broadband are also often the most vulnerable to extreme weather and climate events. Because retrofitted and new infrastructure for broadband might be expected to have a lifetime of 20 years or more, how might DEEP account not only for current risks but also for how the frequency, severity, and nature of extreme events may plausibly evolve as our climate continues to change over the coming decades?
7. What means test method should be applied in funding curb-to-building projects? Should any other metrics be considered?
8. What other approaches do you believe could be successful in connecting all Connecticut residents with access to broadband at affordable costs?

## E. Data

The ARPA CPF allows for the inclusion of a variety of available data in determining communities to be served by broadband infrastructure projects while the IJA aligns to forthcoming FCC broadband maps to delineate unserved and underserved locations and areas.<sup>34</sup> Public Act 21-159 requires broadband Internet access service providers to submit information regarding the availability and adoption of broadband service to the Office of Policy and Management (OPM) in order for OPM to develop and maintain an up-to-date broadband map per OPM specification. Compliance will be a requirement to grant program participation. The ARPA allowable data sets include, but are not limited to:<sup>35</sup>

- Documentation of existing broadband ISP performance
  - Federal or State collected broadband data
  - User speed results
  - Interviews with community members and business owners
  - Reports from community organizations
1. Should areas where such data exists be prioritized, or should tranches be reserved for areas that need time or assistance to gather data?
  2. For municipal respondents, non-profits, businesses, community organizations, other potentially

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<sup>34</sup> Pursuant to the Broadband Data Act, 47 U.S.C. 641 et seq. fixed broadband providers can report broadband availability data using either availability polygons or a list of addresses or locations. Availability data will be reported on the Broadband Data Commission maps for consumers, and state, local, and Tribal governments, and other third parties to view and, if applicable, challenge. Fixed providers will have the ability to challenge any broadband serviceable location data in the production version and the details of the process for the challenges will be provided in a Public Notice from the FCC. Acceptance of bulk challenges is anticipated to begin with the close of the filing window on September 1. Individual challenges will be accepted upon publication of the broadband maps.

<sup>35</sup> U.S. Department of Treasury Guidance for the Coronavirus Capital Projects Fund for States, Territories & Freely Associated States, page 3, available at <https://home.treasury.gov/system/files/136/Capital-Projects-Fund-Guidance-States-Territories-and-Freely-Associated-States.pdf>.

eligible program recipients, or other entities, what data do you have that meets any of the criteria above, and for what specific geographic areas?

3. What type of information would support coordinated broadband deployment planning (e.g., number of attachment points, locations, timing, etc.)?

## **F. Other**

1. Do you have any other general comments and/or recommendations relating to how DEEP might structure the Programs to best achieve its goals? If so, please elaborate.
2. Are there any other project eligibility or selection criteria that the state should consider?
3. Please provide any other comments and/or recommendations relevant to the Programs.

## **5. Information Requested from Broadband Service Providers and Eligible Entities Only**

Questions in this section are specific to Broadband Internet Service Providers and potential eligible Program recipients that would be interested in running a network individually or in partnership with one or more other eligible entities. For information that is claimed to be proprietary and/or confidential, please follow the procedures set forth in Section D. Please skip this Section if it is not relevant to you or your entity.

1. Please briefly describe your experience, capabilities, and qualifications in the broadband sector, including other networks your organization has designed, built, maintained, or operated.
2. Identify any Connecticut municipalities and/or regions that you represent or in which you conduct, or would conduct, business as a current or potential broadband service provider.
3. Describe the assets and capabilities you have that might lead you to participate in the expansion of broadband access in Connecticut, including, but not limited to, fiber, conduits, towers, poles, and other physical infrastructure.
4. If you are considering participating in the Programs, describe in which program(s) and in what capacity you would consider participating (e.g., as a last mile provider, middle mile provider, or other).
5. For any respondents that are non-incumbent providers, or that may constitute a potential partnership of a non-incumbent with an incumbent, please summarize the business model you would consider proposing, including but not limited to the division of network and operations responsibility and ownership. How would your business plan help to meet the State's goals? What are the State's main areas of risk, and how will you attempt to reduce the risk to the State?
6. Do you foresee any obstacles, such as requirements or processes, to your participation? If so,

please explain with the greatest specificity possible.

7. Explain how you would prioritize which areas should be constructed first, and why.
8. Are there specific middle-mile or backhaul gaps that the State should address for which your potential project is especially suited?
9. What middle mile locations/colocation facilities are desirable to connect to in the New York and New England region in order to serve the Connecticut broadband market?
10. Describe any specific threats to broadband infrastructure that may be caused by extreme weather and climate events such as (1) sea-level rise, storm surge, and coastal flooding; (2) increased precipitation and inland flooding; and (3) storm damage to aerial infrastructure. Which technical and regulatory solutions do you recommend and why?
11. Please provide information related to the determination of your target Return-on-Investment (“ROI”) for broadband projects such as those contemplated herein:
  - a. What is the primary financial metric by which you assess project buildout acceptability (e.g., IRR, payback period)?
  - b. What return threshold would you be seeking in connection with projects relative to these Programs, and over what time frame would you be seeking that return threshold to be achieved?
  - c. What assumptions would you make about adoption (“take-rates”) in currently underserved or unserved markets where you may begin to provide service? What is your experience with adoption rates in previously unserved areas?
  - d. What sources of capital would be used to fund the contemplated projects, other than Program grants (e.g., debt, equity)? What is the assumed weighted average cost of capital that you would use in your calculations for identifying the cost of debt, cost of equity, and the assumed debt/capital ratio?
12. What download and upload speeds does your entity plan to make available within the next five years?
13. If you would propose a DOCSIS-based solution, are there any areas in the state where your technology cannot support a minimum of 100 Mbps symmetric speed?
14. Would you be willing to provide open infrastructure for use by other providers in some way, shape or form? Why or why not and if so, what infrastructure and how?
15. Are you able to provide data to meet project requirements now or in the near future? If not, in what time frame would you be able to collect such data, and what types of assistance would be helpful?
16. Are there strategic partners whose cooperation would enhance your ability to deliver services under the Programs and/or reduce your time and cost to deploy? If appropriate, please list the partners you are currently working with or could be interested in working with in the future.

17. Would you be willing to partner with other broadband providers and/or municipalities to provide broadband access to underserved and unserved areas of Connecticut? If so, please explain under what circumstances you would be willing to enter such partnerships.
18. Are there types of interconnection arrangements that would foster innovative models to reach underserved and unserved areas?

**Thank you for your participation in this RFI.**