

BEFORE THE
National Telecommunications and Information
Administration
AND THE
Rural Utilities Service
WASHINGTON, D.C.

In the matter of)
) Docket No. 090309298-9299-01
American Recovery and Reinvestment Act of)
2009 - Broadband Initiatives)

**COMMENTS OF LAURENCE BRETT (“BRETT”) GLASS,
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PROVIDER SERVING ALBANY COUNTY, WYOMING**

Laurence Brett (“Brett”) Glass, a sole proprietor doing business as LARIAT, a wireless Internet service provider in Albany County, Wyoming, responds to the Joint Request for Information published by the National Telecommunications and Information Administration (NTIA) and Rural Utilities Service (RUS)¹ with the following comments.

1. INTRODUCTION

LARIAT was among the first, if it was not the very first, of the wireless Internet service providers (WISPs) now doing business within the continental United States, who are estimated by various sources to number between 4,000 and 8,000. Founded originally as a rural telecommunications cooperative and now a privately owned ISP, LARIAT has been solving the problem of bringing broadband to rural areas for 17 years – giving it a greater depth of practical knowledge and experience in the deployment of rural broadband than virtually any other party filing comments in this proceeding. Since the beginning of 2009,

¹ Joint Request for Information and Notice of Public Meetings, Fed. Reg. Vol. 74, No. 47 (Mar 12, 2009) p. 10716 *passim*, FR Doc. E9-5411 Filed 3-9-09; 4:15 pm.

LARIAT has – without the aid of any government funding – increased its coverage by an area 5 times the size of Manhattan island, all of which area was previously unserved by any terrestrial broadband provider.

LARIAT has overcome many obstacles – including but not limited to current spectrum allocation policies, which make it impossible for any small ISP to obtain licensed radio spectrum at a reasonable cost – to provide service to areas which, to this day, other providers cannot reliably reach. With an Electrical Engineer (MSEE Stanford 1985) at the helm, LARIAT uses careful engineering practices and unlicensed (“Part 15”) spectrum to provide high quality, high speed Internet service to a large and growing area, less than 5% of which has access to any wired broadband option (e.g. DSL or cable modem service). It also competes effectively with much larger providers – including Bresnan Communications and Qwest – in the few more densely populated areas of Albany County where these services are deployed, providing broadband customers with options which they would not otherwise enjoy.

LARIAT was likewise a pioneer in the use of sophisticated technological solutions – including traffic prioritization and caching – to provide customers with fast, economical service despite the extremely high cost of Internet backbone bandwidth in Albany County, where wholesale monthly bandwidth costs range from \$100 per megabit per second (Mbps) to several hundred dollars per Mbps.

Because the questions raised in the Joint Request for Information are extensive, LARIAT will limit its comments to specific areas which are of special concern and/or have not, in its estimation, been adequately addressed in other comments.

2. ELIGIBLE ENTITIES

In the enabling legislation, Congress states that applicants eligible for funding under the NTIA’s Broadband Technology Opportunities Program (BTOP) shall include government entities, nonprofits, and

any other entity, including a broadband service or infrastructure provider, that the Assistant Secretary finds by rule to be in the public interest. In establishing such rule, the Assistant Secretary shall to the extent practicable promote the purposes of this section in a technologically

neutral manner;²

In the past, the RUS has declined to provide funding for broadband deployment to sole proprietorships and partnerships.³ This has not only had the effect of excluding small and local businesses (most of which are organized as one of these two forms of business) from participating in the program; it also effectively discriminates against certain technologies because most WISPs (fixed, terrestrial wireless Internet service providers) are such small businesses. Since large, national corporations have failed to step up to the plate to serve rural areas, and because small businesses have a special interest in serving their unserved and underserved communities when larger entities will not, the prior restriction should be explicitly rescinded for broadband funding authorized by the RUS, and the NTIA should explicitly state in its rules that small businesses will be eligible.

3. THE “MIDDLE MILE” IS CRITICAL

One of the hurdles faced by LARIAT and its colleagues, as we attempt to deploy broadband to rural areas, is the high cost and limited availability of the “middle mile” – the data links which connect the hub of a local broadband system to the nationwide and worldwide Internet backbones. Many (if not most) underserved and unserved areas – such as the city of Medicine Bow, Wyoming, which is 60 miles from Laramie – owe their status not to the inability to build out “last mile” infrastructure (which has now been facilitated by the advent of economical wireless technology) but rather to the lack of availability of reasonably priced Internet bandwidth. For this reason, the programs authorized by the ARRA should give priority, explicitly and by rule, to the development of transport facilities which bring Internet bandwidth *into* such areas.

For this reason, both the NTIA and the RUS should incent nationwide backbone providers to open

² American Recovery and Reinvestment Act of 2009, § 6001(e), Public Law No. 111-5, 123 Stat. 115 (2009)

³ See 7 CFR § 1738.16 (a)(1).

up “on-ramps” to their networks, accessible to all comers, in areas which their fiber currently traverses but does not serve. Such “middle mile” projects should be given priority over “last mile” projects, because the latter will be feasible without subsidy if the former are successfully completed.

If it is not possible to incent a nationwide backbone provider to serve a given area, the agencies should, in the alternative, fund the construction of transport facilities which allow “last mile” delivery systems in that area to reach Internet backbones economically and reliably. Because Internet users often use their connections as their primary means of communications (including their telephone service), redundancy is desirable; therefore, the funding agencies may not wish to limit funding of “middle mile” facilities to those of a single provider. However, if only one provider’s “middle mile” or backhaul facilities are funded in a given area, or if a government entity receives funding to build those facilities, the recipient of the funding should be required to offer access to those facilities on a reasonable, neutral and nondiscriminatory basis so as to encourage the use of this infrastructure by multiple, competing “last mile” providers.

4. PREFERENCES FOR PREVIOUS GRANT RECIPIENTS

In the case of RUS funding, the ARRA requires that

...priority shall be given for project applications from borrowers or former borrowers under title II of the Rural Electrification Act of 1936 and for project applications that include such borrowers or former borrowers⁴

Unfortunately, placing a high priority on such applications would give an advantage to incumbent carriers which had previously had opportunities to serve unserved or underserved areas but had not done so. It could also consolidate the positions of those incumbents, leaving entire regions as “captives” of a single provider. Finally, if rules which previously prevented small businesses from applying were rescinded (as they should be; see above), such a preference might effectively cause them to continue in effect by disadvantaging small businesses which would then apply for funding. For these reasons, the

⁴ American Recovery and Reinvestment Act of 2009, Division A, Public Law No. 111-5, 123 Stat. 115 (2009)

preference given to current or former borrowers should be the minimum allowed by law, and should be capable of being outweighed in the agencies' scoring systems by factors such as promotion of competition.

5. SPEED AND CAPACITY

Many of the comments in this docket recommend minimum "speed" requirements for eligible projects. Unfortunately, the meaning of "speed" is unclear in many of these proposals. Does it mean the speed at which raw bits are transmitted over the physical medium? The actual amount of data that can be transferred between programs per second using a session layer protocol such as TCP? And what of other factors which are important to the quality of a high speed Internet connection, such as latency (the time it takes for a data packet to be delivered to the recipient, regardless of data rate) and the percentage of dropped packets?

In addition, there is a potential for overly high speed aspirations to outweigh not only users' practical needs but what they can afford. For example, in the rural areas which LARIAT currently serves, Internet backbone bandwidth costs between \$100 and \$325 per megabit per second (Mbps) per month. Thus, to require a provider to offer 1 Mbps to every user would be to expect each of those users to be able to pay some percentage more than that amount per month (to allow the operator to recover reasonable operating costs), even though many users would simply decline to purchase service at those prices. For this reason, any standard for speed or throughput should accommodate the amount that a typical consumer will be willing to spend (typically \$30 to \$40 per month) as well as wholesale bandwidth costs. In some rural areas, a consumer's \$40 per month may only buy the 200K of guaranteed capacity which has heretofore been considered to be the lower threshold for "high speed" or "broadband" service. However, because this capacity is adequate for Web browsing, VoIP, e-mail, and the other most common Internet activities, consumers are likely to be quite happy with such service if it is reliable.

It is also worth noting that many types of broadband equipment (including both wireless and fiber transceivers) can be obtained less expensively if they are provisioned at lower speeds initially and then upgraded to higher speeds as need and demand grow. Thus, if the goal of the stimulus is to provide

some service to unserved areas (which we would define as areas not served by any terrestrial Internet service with a speed of 200 Kbps or more), it is better to cover more ground with basic but upgradable equipment than less with “top of the line” equipment that offers capacity which will go unused because no one can afford it.

For all of these reasons, the programs should not favor “Cadillac” projects, which are claimed to be able to deliver ultra-high speeds, when many would-be broadband users simply long for a reliable “economy car.” Instead, the RUS and NTIA should favor projects which are able to meet a basic standard for broadband (e.g. 200 Kbps of actual, continuous TCP throughput at the application layer and no more than 150 milliseconds of latency to the backbone router) but are *upgradable* to higher capacities and faster speeds as the cost of bandwidth declines (perhaps due to funding of enhanced “middle mile” infrastructure as recommended above).

6. NETWORK MANAGEMENT

The ARRA requires that:

Concurrent with the issuance of the Request for Proposal for grant applications pursuant to this section, the Assistant Secretary [of Commerce for Communications and Information] shall, in coordination with the [Federal Communications] Commission, publish the non-discrimination and network interconnection obligations that shall be contractual conditions of grants awarded under this section, including, at a minimum, adherence to the principles contained in the Commission's broadband policy statement (FCC 05-15, adopted August 5, 2005).⁵

Unfortunately, the broadband policy statement cited in the statute is vague in many respects, and the only FCC order which has ever attempted to interpret any of the statement's provisions is currently the subject of a lawsuit. (Even supporters of the FCC's decision acknowledge that it is likely to be partially, if not completely, overturned on review.) This has created considerable uncertainty among would-be applicants for stimulus funding (including our own company) and may cause many providers to

⁵ American Recovery and Reinvestment Act of 2009, § 6001(j), Public Law No. 111-5, 123 Stat. 115 (2009)

“walk away” from the stimulus, believing that the long run costs of conformance to the FCC policy statement would be many, many times the amount of the funding received.

For this reason, the contractual obligations imposed under this section should be kept to the minimum required by law, and the term “reasonable network management,” included in the policy statement, should be defined as broadly as possible to include any network management practice which is not anticompetitive. Prioritization of time-sensitive activities (such as Internet telephony), deprioritization of activities which are not time-sensitive and/or attempt to consume excessive resources (e.g . “peer to peer” file sharing), and/or the contractual prohibition of activities which degrade network performance or make the network financially unsustainable should be explicitly authorized. Finally, the agencies should explicitly state that a provider which accepts funding to build one small section of its network will not be subjected to obligations which encumber its entire network or its entire company (as has been suggested by some interest groups which have commented in this docket). This will provide at least some assurance to carriers that they will be able to provide adequate quality of service and safely participate in the program without losing far more than they receive in stimulus funding.

Respectfully submitted,

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