

February 28, 2019

Notice of Ex Parte

Marlene Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

**Re: *Connect America Fund: Performance Measures for
Connect America High-Cost Universal Service Support Recipients
Docket No. 10-90; DA 17-1085***

Dear Ms. Dortch:

INTRODUCTION

NTCA-The Rural Broadband Association (NTCA) hereby submits this letter as an *ex parte* presentation in the above-captioned proceeding. NTCA has participated actively in this proceeding since its inception¹ and maintains its support for performance measurement protocols to confirm the deployment of broadband networks that meet robust capability targets associated with high-cost support. However, since the *Performance Measurements Order*² was released, NTCA and its members (collectively, NTCA) have identified technical and other issues that must be resolved before successful implementation of the measurements process can be achieved. In summary, even as applications for review, petitions for reconsideration, and further public notices remain pending, the more significant issue at this point is simply the process by which all of these questions will be resolved and the timing within which testing must be implemented and commence.

Inasmuch as final rules have not yet been issued, various issues of concern are emerging as network operators measure the *Performance Measurements Order* against the companies' operational and technical protocols and standards. Accordingly, NTCA submits the overall process will benefit by allowing for the following measures:

¹ See, *Comments of NTCA–The Rural Broadband Association* (Dec. 6, 2017); *Application for Review* (Sep. 19, 2018); *Opposition to Petitions for Reconsideration* (Nov. 7, 2018), and various *ex parte* presentations in the docket.

² *Connect America Fund*, WC Docket No. 10-90, Order, DA 18-710 (rel. July 6, 2018) (*Performance Measurements Order*).

1. A dialogue among Commission staff, the Universal Service Administrative Company (USAC), and other stakeholders through which the testing and reporting rules can be finalized, taking appropriate recognition of challenges “in the field” and better definition of actual operational standards and practices;
2. Sufficient time for operators and/or vendors, as the case may be, to develop hardware and software necessary to perform the measurements testing, as well as sufficient time to integrate those solutions into existing platforms; and,
3. A sufficient period during which ISPs can “test the testing” to ensure the overall compatibility and successful operation of customer-location, provider-operated and other components of the testing process as it will be undertaken.

NTCA submits that, generally, the challenges as identified by the operating companies are not insurmountable; at this stage, time and careful testing of the testing protocols (referred to herein as “test the testing”), coupled with careful attention to ensure that the rules integrate successfully with industry operational practices and standards, should enable providers and the Commission to implement robust, accurate and reliable testing protocols. To the extent that critical high-cost support depends upon the successful execution of the performance measurement tests, NTCA submits that the type of comprehensive review NTCA recommends is necessary to ensure that crucial support is not jeopardized recklessly and unnecessarily.³

DISCUSSION

The implementational issues identified by NTCA fall into several general categories, as outlined below. They include, but are not limited to:

The impact of testing loads on the network;

The availability of customer-side testing equipment, including adequate time to “test the testing” and successful integration of new equipment into the provider network;

Selection and size of the sample testing pool; and,

Equity among small and large providers.

This list is not to be construed as exhaustive; NTCA submits that additional issues may be revealed as providers beta test and then move toward full implementation of testing solutions within their networks. In the interest of promoting productive dialogue among the Commission, USAC (which is to administer certain of the ministerial functions associated with performance testing) and providers, NTCA provides the following:

³ NTCA further specifies that this letter shall not be construed as waiving any rights or issues as have been noticed in its *Application for Review* or other pleadings.

1. NETWORK LOADS AND BURSTS

Noticed Challenges

Preliminary testing reveals some failures from rural areas to designated IXPs. Failures were identified when testing to servers located in the IXP due to traffic loads congestion caused by testing. Trouble-shooting to determine whether these types of failures are due to network segment capacity or the ability of the servers to handle the loads could be difficult depending on how many providers are between the ISP and the IXP. There is an emerging concern that this problem will be exacerbated as more entities undertake simultaneous testing in the first and subsequent rounds of testing. It is also worth noting that these network segments are *not* supported by universal service mechanisms and, in many cases, are *not* owned or controlled by the ISP required to undertake testing.

Preliminary testing also revealed that testing causes significant bursts in traffic during what is already a busy time for the network. It is common practice for all local service providers and their backhaul providers to actively monitor the traffic trends on their backhaul connections in order to increase capacity before congestion on the backhaul causes an issue for their customers. In addition, many local service providers purchase “insurance” in the form of burst clauses in their contracts with middle mile and other networks through which data transit. The burst clause allows a service provider to exceed their contracted speeds for a short duration at no additional cost. However, it has been discovered that the set time for testing along with the number of simultaneous tests is likely to result in local service providers exceeding the short duration and triggering the penalty clauses of bursting agreements, resulting in significantly higher backhaul costs.

Proposed Solutions

The concerns related to transport can be resolved by requiring only those local service providers that own or lease a *direct* connection to an IXP to test all the way to the IXP. In contrast, local service providers that do not own or lease backhaul directly to the IXP would be required to test to the next-tier provider.⁴ In instances, however, where the next-tier provider (*i.e.*, the transport company or regional ISP) owns the transport device that is deployed in that “far end” network (and which is beyond the local ISP network edge), then the local ISP would (1) test to the transport device in its local ISP area at which the speed test server is deployed, and then (2) provide five-minute (5-minute) throughput data for the duration of their testing period to demonstrate they have purchased adequate backhaul capacity. This solution is not offered with the intent to resolve potential problems by effectively ignoring them (*i.e.*, to avoid IXP-related problems by not testing to the IXP), but rather as a logical extension of the fundamental notion that high-cost support must not depend upon the performance of unsupported network segments that rural ISPs neither own nor control. The equity of this argument is plain: any entity’s performance cannot be adjudged fairly on the basis of another’s performance, particularly when that other party’s performance is something a small rural ISP cannot hope to control through bargained-for contract terms. Moreover, the potential adverse outcomes of this policy, including withholding of high-cost support, are plainly evident. Network load factors and other negative impacts could, in theory, be addressed by rural ISPs if they had adequate control of the network segments beyond their respective edges. However, in the absence of middle-mile support, it is inequitable to hinge the receipt of high-cost support upon the performance of another’s network.

⁴ See, Attachment 1 to this letter.

2. TESTING EQUIPMENT

Noticed Challenges

Availability of Equipment As described in prior NTCA filings, a reasonable variety of testing equipment is not yet in the marketplace. Although some firms are developing compliant devices, the technology may be months away from both validation in the marketplace and widespread availability. Moreover, even as equipment may be designed and developed, substantial concerns exist regarding *how* those new devices may integrate effectively with existing networks. Unlike larger regional or national providers, the nearly 850 NTCA members use a broad range of equipment offered by multiple vendors. Even holding companies with multiple local operating companies may use different equipment in individual study areas. And, even once the marketplace for testing equipment matures beyond its currently nascent stage, sufficient time to “test the testing” and the integration of newly-issued devices with different network designs must be accorded; this is particularly important because the receipt of high-cost support depends upon successful testing. It would be wholly inequitable, unjust and contrary to law and policy if critical high-cost support were withheld on the bases of less-than-fully-tested protocols.

Cost and Customer Consent As noted previously by NTCA, white-boxes, upgraded modems and software-based solutions present significant potential costs as well as customer interaction-related issues where consent to deploy new or additional testing equipment would be necessary. All devices will incur costs; all devices are anticipated to require a truck roll; white-boxes will require customer consent; even devices with embedded capability will likely require customer cooperation to purchase or lease and install the new equipment. The deployment of certain customer-side equipment is anticipated to suffer from customer attrition, specifically, subscribers who do not activate or inadvertently deactivate testing equipment. These, too, implicate cost and customer-interaction concerns.

Proposed Solutions

As stated previously, NTCA supports testing protocols to confirm the deployment of broadband networks that meet the requirements associated with the receipt of high-cost support. However, these protocols must be implemented in a manner that is administratively and economically efficient. NTCA therefore supports a delay in the implementation of the performance measurement obligations until (1) a sufficient variety of equipment including white-boxes, modems/routers with embedded testing capability and software-based solutions are fully available in the marketplace, and (2) the “testing has been tested” – including (a) confirming the successful integration of testing equipment with existing network infrastructure, and (b) enabling suitable customer participation. A reasonable period of time should be provided for the fulfillment of these necessary steps to implementation following finalization of rules and standards governing testing.

3. SAMPLE POOL SIZE

Noticed Challenges

Temporary Upgrading of Locations The performance measurement rules require providers to upgrade locations if an insufficient number of customers subscribe to the service tier that must be tested.⁵ Several technical challenges to this requirement have been identified, however. These

⁵ *Performance Measurements Order* at para. 51.

include (1) current operational practices, (2) potential deployment of additional equipment within the provider's network, and (3) the need for increased backhaul capacity outside of the provider's network.

By way of examples, where a customer subscribes to a 10/1 service, the company may provision the connection to a higher capability but activate a process control governor that limits the service to the level to which the customer subscribed. In such a system, the level of service could be increased manually, but the governor would be triggered automatically and then revert the service to the subscribed-to rate. A temporary upgrade would therefore require overriding multiple systems that control the network. Moreover, every time a location's service is adjusted, the service could "go out" and not come online until the customer resets or reboots the router. This situation would likely cause significant customer distress and require additional provider interaction to explain the cause and nature of the disruption. Finally, some customer locations may require new, supplemental equipment to satisfy the testing obligation. By way of example, companies relying on multiple technical platforms may provision a fixed wireless solution to support one speed and a wired solution to support another. A temporary upgrade, then, could necessitate the installation of an entirely new set of equipment at the customer location.

The need to install new equipment or override multiple internal governing systems does not mean that the company has not deployed a network consistent with its obligations. Rather, it means that the company has deployed the underlying network with high-cost support and is coordinating its operating procedures and expenses to the revenues occasioned by the service tier to which the customer subscribes, and for which the customer pays.

Proposed Solutions

In initial comments, NTCA highlighted the inequity of obligating small rural providers to test as many locations as larger regional or national providers.⁶ The challenges described above, namely, the technical and customer service-oriented implications of temporary upgrades, as well as the attendant costs, can be resolved through several alternative measures. In the first instance, the number of required locations can be reduced to levels proposed by NTCA in its initial comments, specifically, the lesser of 50 locations per state or five (5) percent of HUBB input locations.⁷ As NTCA elaborated in its *Application for Review*, the Commission's concern to meet confidence levels⁸ could be satisfied by relying on "substantial evidence" in the form of "adequate and well-controlled investigations."⁹ This approach assures confidence in test outcomes and offers the Commission and providers an opportunity for further investigation if initial tests fail to yield satisfactory results. The threshold articulated by NTCA in initial comments would distribute equitable burdens upon providers that receive high-cost support. In the alternative, and to preempt any needs to temporarily upgrade customer locations, NTCA

⁶ *Comments of NTCA*, at 8-9 (Dec. 6, 2017).

⁷ *Comments of NTCA*, at 8-9 (Dec. 6, 2017).

⁸ Order at paras. 37-40.

⁹ *NTCA Application for Review* at 14, 15 (Sep. 19, 2018).

submits that in no circumstances should the minimum number of testing locations exceed the maximum number of customer locations subscribing to relevant tier.

CONCLUSION

NTCA submits that numerous other administrative issues have been noticed, including, but not limited to: identification of locations to be tested; the impact of customer interference with testing, such as unplugging a device, even inadvertently; the impact of weather-related or other events beyond the control of the ISP, including those that occur on network segments beyond the ownership or control of the high-cost ISP; the potential for automatic withholding of high-cost support for conditions that are entirely beyond the control of the high-cost support recipient, and the inapposite impact that would have on rural network deployment and the universal service goals of the Connect America Fund; and, who bears responsibility for deploying and maintain testing equipment at the IXP. NTCA reiterates that many of these issues can be resolved if sufficient time is devoted to the refinement of technology and process, and that several of these and other issues reside in as-yet unresolved petitions and applications at the Commission.

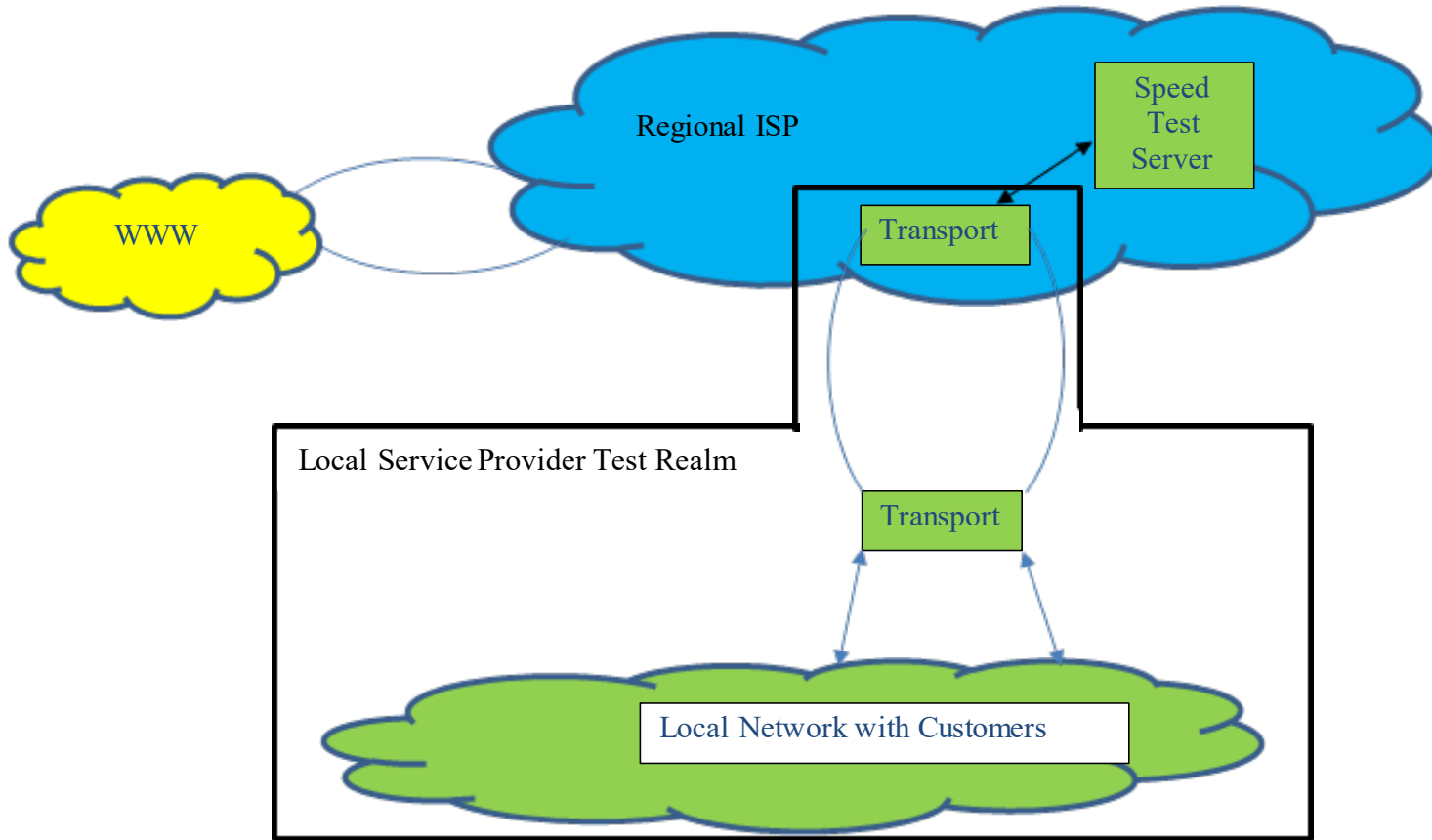
It is evident, however, that the full scope and impact of the performance measurement obligations is being illuminated as operating companies unpack the requirements and measure them against their own network technologies and operations. These evaluations are compounded by the lack of availability of testing equipment in the marketplace. While NTCA recommends deferring the effectiveness of the obligations until such time as testing equipment has been developed, vetted and confirmed to operate with existing networks, NTCA also suggests the Commission coordinate a comprehensive review of implementational issues as are being encountered by operating companies. This type of effort would contemplate a participatory role among service providers who can curate and share information, perspective and experience. Combined with a subsequent “test the testing” period, this would assist the Commission and industry in their common goal of ensuring that high-cost support funds are used effectively to deploy the networks they are intended to support.

Respectfully submitted,

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ATTACHMENT 1 (page 1 of 2)

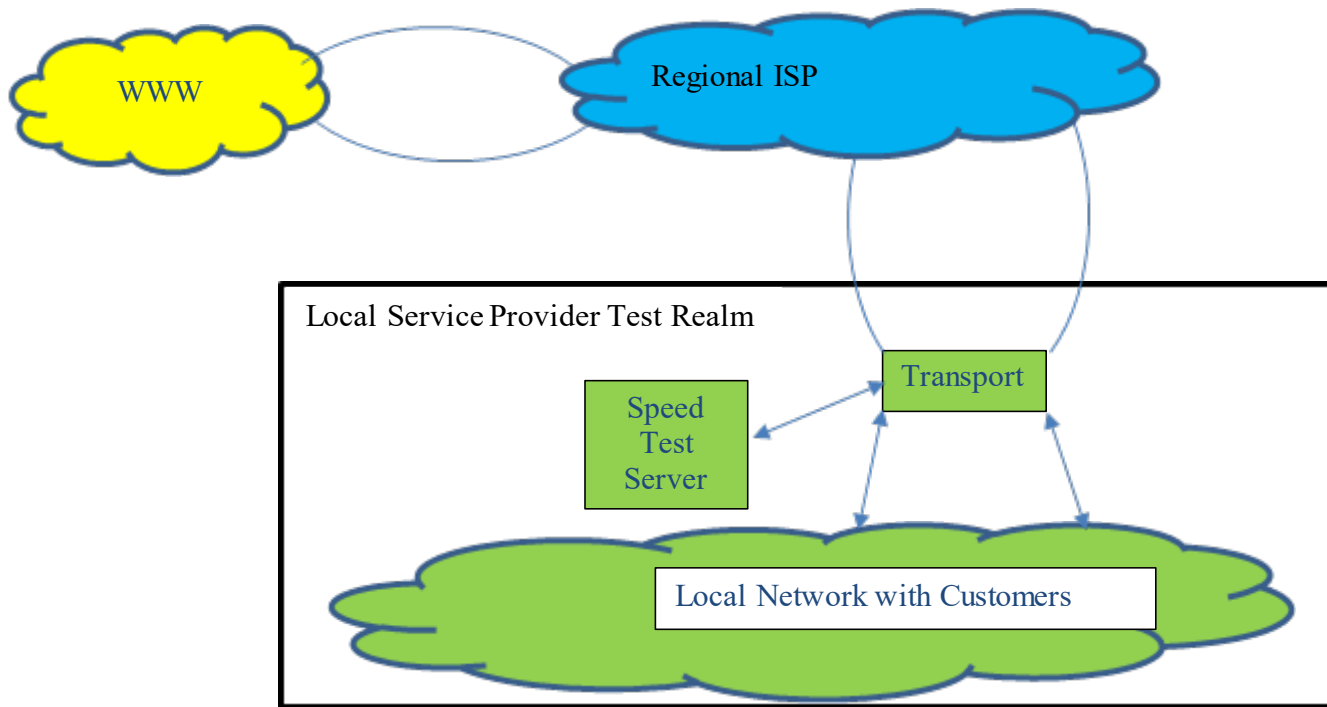
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In this example, the local service provider delivers its data to the regional ISP and the demarcation point is at the ISP side of the transport box.

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In this example, local ISP owns the transport device in their area, but the transport company or the regional ISP owns the transport device at the far end. Therefore, the last point of control for the local service provider is the transport device in its office. In this case, the local ISP would install a speed test server at the transport box and test to that point. From that point, the local service provider would provide speed graphs showing the next leg upstream and that it was non-blocking for their normal traffic.