



**LAKE REGION ELECTRIC COOPERATIVE, INC.  
BROADBAND INTERNET SERVICE DISCLOSURES**

UPDATED February 20, 2019

Consistent with FCC regulations, Lake Region Electric Cooperative provides this information about our broadband Internet access services. We call these services our “High Speed Internet Service.” We welcome questions or comments about this information. You may contact us at:

LREC, P.O. Box 127, Hulbert, OKLA 74441

(918) 772-2526 or (800) 364-LREC

**NETWORK PRACTICES**

**General Description:** We provide a variety of High Speed Internet Service offerings to our residential and business customers. We provide the service over our broadband network and through third-parties’ fiber optic lines connecting to the Internet. We also contract with one or more companies for e-mail hosting and certain network monitoring and management services. WE monitor our network and traffic patterns and make changes we deem necessary to manage and improve overall network performance to ensure a high –quality online experience for all users. Our network management practices do not target any specific content, application, service or device. As network management issues arise and as technology develops, we may employ additional or new network management practices. We will update these disclosures as necessary.

**Related Documents and Disclosures:** Use of our High Speed Internet Service is also governed by:

- Customer Agreement, available at <http://lrecok.net>
- High Speed Internet Service Overview, available at <http://lrecok.net>
- Acceptable Use Policy, available at <http://lrecok.net>

**Congestion Management:** We describe in this section network management practices used to address congestion on our network.

## **Congestion Management Practices Used**

Network Monitoring: We monitor our network for utilization trends. We receive regular reports showing changes in network traffic and congestion. We use this information to plan increases in bandwidth available, port additions, or additional connectivity to the Internet.

Types of Traffic Affected: Our congestion management practices potentially affect all network traffic, but do not target any specific content, application, service or device.

Purposes of Congestion Management Practices: The goal of our congestion management practices is to enable better network availability and speeds for all users. Our congestion management practices serve to:

- Help us adapt and upgrade our network to maintain or improve network performance as demand for our High Speed Internet Service increases
- Help us adapt and upgrade our network to maintain or improve network performance as demand for higher bandwidth applications increases. Some examples of higher bandwidth applications are gaming, streaming movies, and streaming high definition video
- Help us identify potential bandwidth abusers who use substantially disproportionate amounts of bandwidth

## **Congestion Management Criteria**

Network Monitoring: Our network monitoring provides data to help us plan upgrades to our network, equipment, technology and connectivity to the Internet. AS demand for our High Speed Internet Service increases, and as demand for higher bandwidth applications increase, we monitor effects on network performance and plan upgrades.

Effects on End User Experience: Because our High Speed Internet network is a shared network, periods of high network demand may result in Internet traffic congestion. End users may experience reduced bandwidth or speed during these times.

Typical Frequency of Congestion: Congestion tends to occur during periods of peak demand for higher bandwidth applications. Generally, the frequency of congestion tends to increase most days from 8:00 pm to 2:00 am.

Application-Specific Practices: This section discloses any application-specific practices we use.

Management of Specific Protocols or Protocol Ports: To protect the security of our network and our customers, we may identify and block known hostile ports.

Modification of Protocol Fields: Not Applicable

Applications or Classes of Applications Inhibited or Favored: Not Applicable

**Device Attachment Rules:** This section addresses any limitations on attaching lawful device to our network.

General Restrictions: We place no general restrictions on lawful devices that a customer may connect to our network, so long as the device is:

- compatible with our network
- does not harm our network or other users

Our High Speed Internet Service works with most types of PC's and laptops including Macs, and other Internet-Compatible devices like game systems and Internet-Enabled TV's. If a wireless router is connected to our High Speed Internet Service, wireless Internet compatible device including computers, tablets, smartphones, and other devices can connect to our network. If a customer or potential customer believes they have an unusual configuration, a customer can contact us and we will help determine if there is a compatibility problem.

Fiber-To-The-Home (FTTH) Equipment: We install an Optical Network Unit (ONU) at the customer's premises to enable use of our High Speed Internet Service delivered via our FTTH network. The ONU then connects via coaxial cable to a Residential Gateway Device (RG.) The customer connects a computer or other Internet-Enabled device to the RG through a Network Interface Card (NIC) for a wired connection or through a wireless antenna for a wireless device. A customer may obtain an RG from Lake Region Electric Cooperative, Inc. or may use a compatible, commercially available RG. If a customer has a question about RG compatibility, the customer can contact us and we will help determine if there is a compatibility problem.

**Network and End User Security:** This section provides a general description of the practices we use to maintain security of our network.

**Practices used to ensure end user security, including triggering conditions.**

Hostile Port Blocking: We may identify and block known hostile ports to prevent unwanted files, browser hacking and virus attacks.

Virus and Spam Filtering: We filter email traffic for virus activity and spam using industry standard virus scanning and prevention techniques. Should an e-mail message be found to contain a virus or other harmful content, the message will be deleted without notification given to either the sender or any intended recipient.

## **Practices used to ensure security of the network including triggering conditions.**

Hostile Port Blocking: We may identify and block known hostile ports to prevent unwanted files, browser hacking and virus attacks.

Virus and Spam Filtering: We offer e-mail and personal website hosting. WE filter e-mail traffic for virus activity and spam using industry standard virus scanning and prevention techniques.

## **PERFORMANCE CHARACTERISTICS**

**General Service Description:** Our High Speed Internet Service includes wiring, and Optical Network Terminal (ONU,) a Residential Gateway, and a Network Interface Card (NIC) for the personal computer. Through our High Speed Internet Service, we serve as a local Internet service provider. Our High Speed Internet Service enables residential and commercial subscribers to access all lawful content, applications, and services of their choice available on the Internet.

**Service Technology:** We deliver our High Speed Internet Service using Fiber-To-The-Home (FTTH) technology. Our FTTH Internet service uses fiber optic lines, an Optical Network Terminal and a Residential Gateway device that connects to a Network Interface Card for a wired connection or through a wireless antenna for a wireless device. This is a shared network, which means that our customers share upstream and downstream bandwidth with their neighbors.

### **Expected and Actual Speeds and Latency:**

Expected Performance: We offer customers a variety of High Speed Internet Service levels. We provide a description of the expected maximum transfer speeds associated with each service level in our High Speed Internet Service Overview, available at <http://lrecok.net>.

Speed: The speeds we identify for each High Speed Internet Service level are the maximum upload and download speeds that customers are likely to experience. We provision our customers' equipment and engineer our network to deliver the speeds to which our customer subscribe. However, we do not guarantee that a customer will actually achieve those speeds at all times. A variety of factors can affect upload and download speeds, including customer equipment, network equipment, congestion in our network, congestion beyond our network, performance issues with an Internet application, content, or service and more.

Latency: Latency is another measurement of Internet performance. Latency is the time delay in transmitting or receiving packets on a network. Latency is primarily a function of the distance between two points of transmission, but also can be affected by the quality of the network or networks used in transmission. Latency is typically measured in milliseconds, and generally has no significant impact on typical everyday Internet usage. As latency varies based on any number

of factors, most importantly the distance between a customer's computer and the ultimate Internet destination (as well as the number and variety of networks your packets cross,) it is not possible to provide customers with a single figure that will define latency as part of a user experience.

Actual Speed and Latency Performance: Actual speed and latency may vary depending upon network conditions and other factors. Actual performance of our High Speed Internet Service in most cases will conform to national wireline broadband Internet speed and latency levels reported by the FCC. The FCC has reported that customers of Fiber-To-The-Home (FTTH) based broadband Internet Services receive mean download speeds that are within 114% of advertised speeds during non-peak hours, and 113.5% of advertised speeds during peak hours. In addition, the FCC has reported that these same customers experience average latency delays of 17 milliseconds, increasing by an average of 18 milliseconds during peak hours.

**Suitability of the Service for Real-Time Applications:** Our High Speed Internet Service is suitable for typical real-time applications including messaging, voice applications, video chat applications, gaming, and Internet video. If users or developers have questions about particular real-time applications, please contact us at: (918)-772-2526.

#### **Specialized Services:**

Specialized Services Offered to End Users: We offer several managed services over our network, sharing network capacity with other high-speed Internet services. Managed services include Voice over Internet Protocol and dedicated bandwidth to high volume business users.

Effect of Specialized Services on Availability and Performance of Broadband Internet Access Service: Our managed services have no effect on the availability and performance of our High Speed Internet Service.

### **COMMERCIAL TERMS**

**Prices:** Monthly prices for our High Speed Internet Service are available at <http://lrecok.net>.

Usage-Based Fees: Not applicable

Fees for Early Termination: Not applicable

Fees for Additional Network Services: Customers requesting a static IP address may upgrade to a small business account for an additional charge. See our High Speed Internet Service Overview, available at <http://lrecok.net>.

#### **Privacy Policies:**

Inspection of Network Traffic: We routinely monitor network and traffic patterns.

Virus and Spam Filtering: We filter e-mail for virus activity and spam using industry standard virus scanning and prevention techniques. Should an e-mail message be found to contain a virus or other harmful content, the message will be deleted without notification given to either the sender or any intended recipient.

Storage of Network Traffic Information: Dynamic Host Configuration Protocol (DHCP) information is a code included in all the network traffic that associates that traffic with a particular residential gateway device sending or receiving the traffic.

Provision of Network Traffic Information to Third Parties: We do not disclose High Speed Internet Service customer or use information to third parties except:

- as necessary to provide our High Speed Internet Service and to manage our network
- in response to law enforcement request, court order, or as otherwise required by law

Use of Network Traffic Information for Non-Network Management Purposes: We do not use network traffic information for non-network management purposes.

### **Redress Options:**

Practices for Resolving End-User and Edge Provider Complaints and Questions: End users or edge providers with complaints or questions relating to these disclosures should contact us at (800) 364-LREC.

Questions: We will endeavor to answer questions promptly via e-mail or telephone

Complaints: We will provide an initial response in writing within 15 business days of receipt. We will attempt to resolve complaints informally, escalating the matter to senior management if needed.

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47 CFR 8.3 and In re: Preserving the Open Internet. Broadband Industry Practices, Report and Order, 22 FCC Rcd 17905 (2010)

See FCC's Office of Engineering and Technology and Consumer Affairs Bureau, *Measuring Broadband, A Report on Consumer Wireline Broadband Performance* in the U.S., OET CGB DOC-308828A1, pp. 4-6 (Aug 2, 2011) available at [http://transition.fcc.gov/cgb/measuringbroadbandreport/Measuring\\_US\\_Main\\_Report\\_Full.pdf](http://transition.fcc.gov/cgb/measuringbroadbandreport/Measuring_US_Main_Report_Full.pdf)

The FCC has defined peak hours measured during "busy hour" as weeknights between 7:00 pm and 11:00 pm local time.

The FCC has defined latency is the total length of time it takes a signal to travel from an origination point to the nearest server, plus the time for an acknowledgement of receipt to travel back to the origination point. The nearest server is the server providing the minimum round trip time.