

## MANAGED NETWORK SERVICE AGREEMENT

This Managed Network Service Agreement (“Agreement”) is made and entered into this 10th day February, 2025, by and between **KNOXVILLE UTILITIES BOARD**, a municipal utility created pursuant to the Charter of the City of Knoxville, Tennessee, with offices at 445 S. Gay Street, Knoxville, Tennessee 37902 (“KUB”), and **LENOIR CITY UTILITIES BOARD**, a multi-service municipal utility created pursuant to the laws of the state of Tennessee with offices at 7698 Creekwood Park Blvd. Lenoir City, Tennessee 37772 (“LCUB”).

### RECITALS

A. KUB is a municipal utility established pursuant to the Charter of the City of Knoxville, Tennessee, with jurisdiction, control and management of the distribution of utility services by the City of Knoxville.

B. LCUB is a multi-service municipal utility established pursuant to the laws of the state of Tennessee, with management and control of distribution of utility services by the City of Lenoir City.

C. LCUB desires for KUB to provide network support and monitoring for the broadband network and related servers serving the LCUB broadband system. KUB is willing to provide managed network service under the terms and conditions established by this Agreement.

**IN CONSIDERATION** of the agreements and undertakings of the parties stated herein and other good and valuable consideration, the parties agree as follows:

1. Core Router Support. KUB will support LCUB’s network staff in managing trouble events, patching and other minor project related activities for LCUB’s core routers.
  - a. KUB will provide assistance with the log analysis, patch and update review, configuration changes, trouble analysis, assistance with code creation and review for network additions, performance optimization, custom business circuit configuration, maintaining upstream DIA circuits, and other general router configuration and maintenance services.
  - b. KUB shall provide resources capable of supporting Nokia, Cisco, RouterOS and other routing platforms. Although KUB does not have specific experience with Arista EOS our Certified Network Engineers have a wide level of knowledge of enterprise routing platforms and will provide best effort support for Arista based systems.
2. Access Equipment Support. KUB will support LCUB’s network staff in managing trouble events, patching and minor project related activities for their all Adtran access level equipment.
  - a. KUB will provide best effort technical support for POP/Communication Office OLT sites running Adtran Access equipment.

- b. KUB's support focus for these activities will be any uplink communications back to the routers. This will include routing and switching infrastructure to the OLT. KUB will not provide support from the access equipment to the home in this model. For example, broken, damaged or dirty fiber, optic replacements, PON patch configurations, etc. will not be served by KUB. KUB support model provides remote support services for Adtran Access equipment and is not structured to perform onsite repairs in a Communications Office or in the home.
3. Network Services Infrastructure Support. KUB will provide support to LCUB's network staff in managing trouble events, patching and other minor project related activities for their supporting systems related to providing FTTH access. This will include DHCP and CGNAT services.
  - a. Additional network information will be provided by LCUB to fully communicate the support strategy for DHCP and CGNAT services.
  - b. KUB will provide best effort support for the configuration and troubleshooting of DHCP and CGNAT services. This support is based on the assumption that configuration and troubleshooting of CGNAT services are delivered via A10 CGNAT appliance and are covered under the technical services support contract of A10 for software upgrades and bug fixes.
  - c. KUB will provide experienced DHCP and CGNAT support services and assist to its fullest ability to resolve issues that arise.
  - d. KUB will provide best effort support for underlying operating systems that host the DHCP and CGNAT services. KUB's support in this area will be determined based upon further discovery of the infrastructure.
4. Network Monitoring. KUB will provide monitoring of network equipment and related servers as follows:
  - a. KUB will provide monitoring and Network Operations Center (NOC) support twenty-four (24) hours per day, 365 days per year. This will include monitoring and alerting for networks and supporting servers.
  - b. KUB will integrate automated configuration back-ups of network devices using Unimus. This product (service) will allow multiple versions of configurations to be stored and quickly compared for auditing purposes and change identification. This product (service) will allow quick and reliable downloading of current configuration files and versioning for fast restoration from changes that did not have the desirable outcome.
  - c. KUB will provide Zabbix monitoring and alerting system services. Zabbix is a mature and effortless enterprise-class open-source monitoring solution for network monitoring and application monitoring.
  - d. The KUB NOC will perform the daily and routine monitoring of the LCUB fiber system. A summary of these daily checks can be provided to LCUB twice a day covering all checks performed in the AM shifts and PM

shifts. These checks will consist of the following. It is important to note that although summaries will only be produced twice a day, if major system issues arise at any point, LCUB will be notified of the issue, and the NOC will assist with resolution in real time. These shift summaries are intended for informational purposes.

**KUB NOC daily checks & routines:**

- i. Zabbix Alerts – Reassess any alerts from previous workday.
- ii. CO Dashboard – Check equipment utilization, NAT, memory, etc.
- iii. Business DIA Dashboard – Check for DIA customer issues.
  1. LCUB must specify critical DIA customers.
- iv. Mosaic Operate Dashboard – Check for utilization and any critical, major or minor alerts.
- v. Mosaic Cloud Connections – Ensure our connections to Mosaic are active.
- vi. Mosaic Subscriber Insight Web Outages – Check for popular websites statuses.
- vii. Adtran Intellifi Status – Check for alarms.
- viii. Tickets – Check the dashboards for any outstanding tickets that need to be completed or updated.
  1. LCUB ticket method to be determined
- ix. Revenue Leakage Report – Work the revenue leakage report.
- x. Speed Mismatch Report – Work the speed mismatch report.
- xi. PON Status – Check the PON status and work accordingly.
- xii. vSphere Client – Review the Skyline Health report.
  1. LCUB use of vSphere to be determined
- xiii. KUB Fiber NOC e-mail inbox – Check for e-mails that need to be worked, planned maintenances to add to the outage tracker.
  1. LCUB & KUB will determine best method for communicating
- xiv. Card Reboots – Work any Arista/Adtran card reboots, and plan RMA if needed.
- xv. Syslog – Ensure the syslog data is current and running.
- xvi. AOE Exemption Reporting – Work the AOE exemption report.
- xvii. Unimus – Verify backups are active in Unimus.
- xviii. CGNAT Servers – Monitor system logs for Errors and Critical alarms.

These routines can be modified to specifically fit the needs of LCUB if other critical systems should be monitored. KUB's ability to take action for resolution will depend on the access granted through LCUB. This level of access will be discussed and determined in the discovery meetings.



- e. These services will require network communications between KUB and LCUB in the form of VPN or dedicated circuit.
- f. Licenses required to operate Unimus will be calculated based on the number of network devices determined during the discovery meetings. The license cost will be billed to LCUB based on the retail cost of the license. Current cost of the license is \$5.90 per device per year. Additional information and current cost per device per year can be found at <https://unimus.net/pricing.html>

5. Customer Expectations. KUB and LCUB agree to the following:

- a. KUB will be provided remote access through the LCUB network and to the effected device as required for support services.
- b. KUB will be provided remote hands support at the equipment if needed for cabling, equipment replacement, etc.
- c. LCUB shall maintain manufacturer support contracts for equipment replacement and advanced troubleshooting, bug fixes, and patches throughout this Agreement.
- d. KUB and LCUB agree to conduct a series of discovery meetings to better understand the LCUB network environment. LCUB shall share with KUB any network diagrams and design related documents during these meetings. LCUB will make available, and KUB will engage in conversations with any resources knowledgeable to the current configuration of the network in an effort to better serve LCUB as a customer.
- e. As part of the ticket escalation process, all change management processes have been satisfied by LCUB and KUB will work with full authorization to make production changes to the network.

6. Requests and Escalation Process.

- a. LCUB technical network staff will be provided direct call support and escalation through KUB's Fiber Network Operations Center (NOC) at 865-558-2400.
- b. Tickets will be created for non-emergency requests.
- c. A network engineer will be assigned to each request and will contact the customer the next business day to support the request.
- d. Emergency tickets will require the customer to escalate the request by indicating to the NOC the urgent need. Emergency requests will be defined as a production outage resulting in ten (10) or more customers impacted and/or a device outage that impacts critical core equipment resulting in degradation to the core fiber network.
- e. A standby NOC engineer will be notified of the issue and begin response within thirty (30) minutes of the reported issue.

7. Pricing. For the services provided by KUB identified herein LCUB agrees to pay KUB the following:
  - a. Discovery and implementation costs (one-time fee), Fifty Thousand Dollars (\$50,000.00)
  - b. Network core router support, access equipment support, NOC network monitoring service, 365 days a year, 24 hours per day, Unimus automated configuration backups, core router monitoring of the Arista network and network services infrastructure support, One Hundred Fifty Thousand Dollars (\$150,000.00) per year or Twelve Thousand Five Hundred Dollars (\$12,500.00) per month.
  - c. Additional services listed below shall be quoted by KUB upon request by LCUB.
  
8. Additional Services and Options. Upon request by LCUB, KUB will provide additional services to assist with developing network resilience. Upon request by LCUB, KUB will provide quotes for the following services.
  - a. Training and mentoring services. KUB will welcome the opportunity to mentor and train staff on behalf of LCUB. LCUB employees will be paired with a KUB fiber network engineering who will utilize KUB's onsite lab environments to train core functions and configuration of the Adtran TA5000 product line. Training can also be requested on the NOC operational tasks for Mosaic & Adtran.
  - b. The KUB team will lead LCUB employees through sample OLT configurations and mentoring on the functionality of the system. We will cover EVC mapping, line card configurations, alerting and monitoring, and troubleshooting. All such training shall be scheduled and delivered in one-week engagements at KUB's facilities.
  - c. KUB Fiber Network Engineering can be engaged through a Statement of Work (SOW) to assist with fiber network related projects and upgrades if needed. The deliverables and pricing would be determined during the crafting of the SOW upon request of LCUB.
  
9. Miscellaneous.
  - a. Term and Termination. This Agreement shall remain in force and effect from the Effective Date stated above on a month-to-month basis provided, however, that either party may terminate this Agreement, with or without cause, upon thirty (30) days written notice to the other party.
  - b. Access. LCUB shall provide KUB reasonable access to the facilities upon which managed network services are provided and to LCUB personnel with local knowledge of those resources.
  - c. Binding effect. This Agreement shall be binding upon and inure to the benefit of LCUB and KUB. This Agreement is not assignable by either party without the express written consent of the other party. It is the

express intention of the parties that no person or entity other than the parties hereto shall be a third-party beneficiary of this Agreement.

- d. Limited Liability. The total financial liability of KUB, under any theory, shall be limited to the amount paid KUB for services during any calendar year. LCUB agrees to accept the services provided by KUB herein as is "with no warranty". Nothing herein shall be construed by either party to constitute a waiver of the rights and responsibilities of the parties under the Tennessee Governmental Tort Liability Act.
- e. Entire Agreement. This Agreement and any other writings specifically identified herein contained the entire agreement between the parties hereto with respect to the subject matter hereof and supersede all prior written, oral or implied understandings, negotiations, commitments and writings between them on the subject matter. This Agreement may not be amended, modified, altered or changed in any respect whatsoever except by further agreement in writing duly executed by both parties.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date shown above.

KNOXVILLE UTILITIES BOARD

LENOIR CITY UTILITIES BOARD

By: \_\_\_\_\_

By: \_\_\_\_\_

Its: \_\_\_\_\_

Its: \_\_\_\_\_