

**Windstream Nebraska, Inc.**

**9-1-1 Service Remediation Plan**

October 15, 2024

# **Windstream 9-1-1 Service Remediation Plan**

## **1.0. Introduction**

### **1.1. Purpose**

The Nebraska Public Service Commission (“Commission”) conducted an investigation into a series of unrelated 911 service outages affecting areas served by Windstream Nebraska, Inc. (“Windstream”) in Southeast Nebraska. The outages occurred on September 2-3, 2023, November 28, 2023, and January 13-14, 2024, due to various issues including a fire at a Windstream facility, generator failure, and network instability. The investigation found that Windstream lacked sufficient backup power caused by a faulty generator, and had weak administrative and engineering procedures, all of which contributed to these outages. Based on the investigation findings, the Commission found that Windstream had failed to maintain adequate and reliable access to 911 services, which may constitute violations of the Nebraska Administrative Code (more specifically outlined in Section 2.2).

The purpose of this \$1,020,000.00 Remediation Plan (“Plan”) is to set forth the actions Windstream has taken to date to fortify its 9-1-1 network and additional actions it plans to take between the date of the Plan and December 31, 2025.

### **1.2. Applicable Rules**

- Failure to provide adequate access line service (291 Neb. Admin. Code § 5-002.02A).
- Failure to employ appropriate engineering and administrative procedures to ensure the adequacy of access line service (291 Neb. Admin. Code § 5-002.02D).
- Failure to continually review operations to ensure service adequacy (291 Neb. Admin. Code § 5-002.02H).
- Failure to make all reasonable efforts to prevent service interruptions and not re-establish service with the shortest possible delay when interruptions occur (291 Neb. Admin. Code § 5-002.03A).

## **2.0. Remediation Plan**

### **2.1. Completed Remediation Tasks**

It is Windstream’s practice to review each of its outage incidents to determine lessons learned and immediately implement those lessons into its business practices and procedures. The list below reflects these actions as they relate to the outages that led to this Plan. For each item, Windstream has provided information regarding the nature of the action, which rule is addressed by the action, and the date the action was completed.

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### **2.1.1. Sourced a local portable generator.**

Windstream secured a rental contract with the local Lincoln, NE CAT dealer to provide a 1-megawatt portable generator should one be needed in the future.

1. Addresses § 5-002.03A as a reasonable effort to restore service with the shortest possible delay.
2. Completed prior to September 30, 2023.

### **2.1.2. Repaired generator & damaged bus bar.**

In addition to repairing the faulty generator part, Windstream had its generator vendor perform detailed generator maintenance and affirmed it meets performance standards. Windstream also replaced the copper bus bar in the electrical vault. An external registered professional engineer oversaw the replacement. A local electrical contractor and the manufacturer tested the new bus bar. Additionally, the battery plant passed extensive testing by Windstream's internal DC power engineering team and an external contractor.

1. Addresses § 5-002.02D and § 5-002.03A to ensure the adequacy of access line service and make reasonable efforts to prevent service interruptions.
2. Generator repair and maintenance took place in October 2023. The bus bar replacement occurred in July 2024.

### **2.1.3. Installed a Quick Connect multi-point transfer switch.**

Windstream has installed a Quick Connect switch, allowing it to quickly connect a portable generator, should one be needed in the future, alleviating the need to wire in the generator manually. This switch also controls whether commercial power or the generator is the primary AC source. The installation of this switch ensures that no matter if it is a stationary generator, a portable generator, or commercial power, all will function as the primary AC source.

1. Addresses § 5-002.02D and § 5-002.03A to ensure the adequacy of access line service and make reasonable efforts to prevent service interruptions and to restore services with the shortest possible delay.
2. Completed in February 2024.

### **2.1.4 Water sealed the electrical vault.**

Windstream took steps to water seal the electrical vault with the transformer.

1. Addresses § 5-002.03A as a reasonable effort to prevent service interruptions.
2. Completed in October 2023.

### **2.1.5. Corrected alarm settings.**

Windstream corrected all alarm settings to address the November 2023 outage that did not result in appropriate service interruption alarms being triggered.

1. Addresses § 5-002.03A as a reasonable effort to restore service with the shortest possible delay.
2. Completed in November 2023.

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### **2.1.6. Added a third route to create additional diversity.**

Windstream activated a new network path from Lincoln to Dallas, providing an additional layer of reliability and protection against outages impacting 911 services in Nebraska. This additional path creates three separate network paths for traffic into and out of Nebraska, connecting to Dallas, Denver, and Chicago. In the event that any two of the network paths are disrupted due to a fiber cut or degradation, the third path has the capacity to carry all of Windstream's traffic in Nebraska until repairs are made.

1. Addresses § 5-002.02D and § 5-002.03A to ensure the adequacy of access line service and make reasonable efforts to prevent service interruptions and to restore services with the shortest possible delay.
  - a. This diversity also addresses the "network bug". Should this become an issue again, all calls will automatically reroute on the diverse path.
2. Completed on January 22, 2024.

### **2.2. Remediation To Be Completed**

Windstream has reviewed the report issued by the Commission's 911 expert and will commit to implementing the following additional remediation steps. For each item, Windstream has provided information regarding the nature of the action, which rule is addressed by the action, and the target date for completion of the action.

#### **2.2.1 Portable Generator Response**

On an as needed basis, Windstream will revise its existing contract with the local generator vendor to address a required response time commitment.

1. Addresses § 5-002.03A as a reasonable effort to restore service with the shortest possible delay.
2. To be in effect: November 2024.

#### **2.2.2. Additional generator testing.**

Windstream will increase its current quarterly generator testing as follows: a) monthly testing under load for no less than 30 minutes; and b) an annual test under load for a minimum of two (2) hours.

1. Addresses § 5-002.02H by completing operations review of its equipment.
2. To be in effect: November 2024.

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### **2.2.3. Electrical Vault monitoring.**

As suggested by the Commissioners, Windstream will add external monitoring equipment to the electrical vault with the transformer. Windstream is currently evaluating the appropriate monitoring equipment.

1. Addresses § 5-002.02D & § 5-002.03A to ensure the adequacy of access line service and make reasonable efforts to prevent service interruptions and to restore services with the shortest possible delay.
2. To be in effect: December 31, 2024.

### **2.2.4. Network trunking review.**

Now that the Next Generation 911 transition is complete in Southeastern Nebraska, Windstream will undertake a network audit to determine which carriers still have trunking to Windstream's selective routers versus connecting to the State's NG911 provider. Windstream will then work with the current NG911 provider and carriers to remove these trunks. Assistance may be needed from Commission Staff to complete this work.

1. Addresses § 5-002.02H and § 5-002.02D to review its network operations for service adequacy and employ appropriate engineering procedures to ensure the adequacy of access line service.
2. To be in effect: Audit to be completed by December 15, 2024. The migration target is December 31, 2025.

### **2.2.5. Network Engineering Audit.**

As recommended by the Commission's consultant, Windstream will engage a qualified third-party auditor to complete a system reliability and engineering review of its Nebraska network. Such a review will include a redundancy analysis.

1. Addresses § 5-002.02H and § 5-002.02D to review its network operations for service adequacy and employ appropriate engineering procedures to ensure the adequacy of access line service.
2. To be in effect: Audit to be completed by May 31, 2025.

### **2.2.6. Develop a NG911 Standards & Process Manual.**

As recommended by the Commission's consultant, Windstream will develop a NG911 Standards & Process Manual in compliance with the current NENA standards, to include but not limited to procedures related to Change Management, setting mandatory network diversification minimums, call aggregation best practices, and post NG911 migration expectations.

1. Addresses § 5-002.02H to continually review operations to ensure service adequacy and, once implemented, will address § 5-002.03A by preventing service interruptions.
2. To be in effect: January 15, 2025.

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### **2.2.7. Revise Notification Plans for Nebraska PSAPs.**

As recommended by the Commission's consultant, Windstream will revise its current incident notification plans to ensure better communication with the Commission and public safety answering points ("PSAPs") during incidents.

1. Addresses § 5-002.03A, as transparent and prompt communication provides for adequate access line service; also addresses § 5-002.02D which requires administrative procedures to ensure the adequacy of access line service.
2. To be in effect: November 30, 2024.

### **2.2.8. Enhance Nebraska Disaster Recovery Plans.**

Windstream will audit and update its current Disaster Recovery Plans for sites in Nebraska to include decision paths for shutting down service-supporting equipment. In addition to a decision path, the plans will be updated to include external communication requirements.

1. Addresses § 5-002.02H to continually review operations to ensure service adequacy and, once implemented, will address § 5-002.03A by preventing service interruptions.
2. To be in effect: November 30, 2024.

## **2.3. Other Remediation Steps Plans Evaluated but Not Recommended**

### **2.3.1. Replacement of the switch.**

Windstream has undergone an extensive analysis to assess replacing its Lincoln switch. Considering the current uncertainty in the industry regarding long-term switching vendors, Windstream is not moving forward with the purchase of a new switch, nor does it think one is necessary. The current switch is reliable and, by addressing the diversity issue with the third route as outlined in 2.1.6, there should be no recurring issues because any equipment failure will result in calls moving down a different path for which Windstream now has three paths in total. Additionally, Windstream's development of a NG911 Standard will assist in reducing any human error that may occur by setting forth specific parameters for network changes and troubleshooting.

### **2.3.2. Geographic diversity.**

Windstream does not recommend moving any equipment at this time. The fire incident that occurred in September 2023, was a rare set of coincidences. With the capital expended and additional protections put in place, the physical moving of equipment is unnecessary. Additionally, the auditing and removal of unnecessary trunking further reduces the risks of future failure.

## **3.0. Compliance Enforcement**

### **3.1. Reporting**

Windstream commits to provide monthly status reports which will be filed no later than 15 days after the end of the month, with the first reporting being due on or before December 15, 2024,

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through the completion of all items outlined in Section 2.2. These monthly reports will be submitted via email to the designated points of contact for the Commission.

### **3.2. Enforcement**

In the event the Section 2.2 Remediations actions are not completed by the specified deadlines, Windstream will be subject to civil penalties of \$1,000 per day until the remediation is completed. However, Windstream make seek a waiver of these penalties by demonstrating a good faith effort to comply with the deadline.

### **3.3. Completion**

Windstream shall notify the Commission upon completion of any 2.2 Remediation. Additionally, Windstream shall provide sufficient information and details to enable the Commission and its consultant to verify the completion as needed.

### **4.0. Points of Contact**

Windstream's Chief Network Officer, Jeff Austin, will serve as Windstream's Compliance Officer. Mr. Austin will also designate the Nebraska President of Field Operations and Windstream's Senior Vice President – Technology & Strategy, as points of contact for the Commission as it relates to this Plan.