Before the

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Washington, DC 20230

In the Matter of	)
	)
NTIA National Spectrum Strategy	) Docket No. NTIA-2023-0003
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	)

COMMENTS OF NEBRASKA PUBLIC POWER DISTRICT

Nebraska Public Power District ("NPPD"), an electrical utility serving the citizens of the State of Nebraska, supports the NTIA's efforts in crafting a National Spectrum Strategy that will benefit our nation through the repurposing of federal bands. NPPD encourages the NTIA to support and protect our nation's Critical Infrastructure & Utilities through the following actions:

1)Allocate sub-8 GHz fixed operational point-to-point microwave frequencies for critical infrastructure use.

The reliability of existing microwave links in the FCC regulated 6 GHz microwave band has recently been undermined by unlicensed consumer and commercial Wi-Fi 6E usage which erodes the fade margin and thus the reliability of these incumbent links. Certain limitations have been placed on Wi-Fi 6E devices to protect incumbent 6 GHz microwave licensees, but the loss of fade margin on incumbent microwave paths due to Wi-Fi 6E interference leaves them vulnerable to even mild atmospheric fading events. The erosion of fade margin also prevents microwave radios from operating at higher capacity modulation levels that were possible prior to Wi-Fi 6E interference.

Microwave links are vitally important to NPPD's communication network which among other things carries protective relaying (teleprotection) circuits and Supervisory Control and Data Acquisition (SCADA) circuits which are necessary for operation of the electrical system in the State of Nebraska. NPPD's microwave is also used to provide backhaul for a statewide public safety two-way radio system, NPPD's corporate voice and data network, and physical security systems installed at critical infrastructure sites. Commercial and consumer Wi-Fi 6E use cases and installation practices are not aligned in any way with our industry's need for long-haul, reliable, and secure communications.

Alternative microwave frequencies available at 11 GHz and above are susceptible to rain fading and so cannot provide the long distance reliable paths needed in rural areas. Therefore, it is imperative to identify a new band that can provide long-haul, high capacity,

reliable, and secure point-to-point microwave communications that is dedicated for critical infrastructure use.

2) Allocate sub-1 GHz wide-band channels for use by electrical, gas, & water utilities which will be used to build private wide-area broadband networks for internal use.

In many cases, utilities are currently relying upon disparate narrowband communications channels including multiple address system radios and point-to-point leased lines to reach substations and other utility infrastructure sites. These legacy communication options may be capable of providing a single low-bandwidth connection for a SCADA system along with other substation communications needs. Examples include physical security, substation equipment management, corporate network access, and telephony purposes.

A single wide-area broadband wireless system can backhaul all these systems and can be designed to meet reliability and regulatory standards required for utility communications. A private broadband wireless system can be designed to stay up and running during extended power outages and during emergency situations when public networks are experiencing congestion. Private broadband wireless systems would not be subject to unplanned maintenance outages that public carriers may choose to undergo without customer notification. Private broadband wireless systems can provide communications for utilities in rural areas that are underserved by commercial carriers.

The need for private broadband wireless coverage is of critical importance to utilities as they prepare for exceptional load growth due to electric vehicle adoption, exponential growth of distributed generation resources (most of which are renewable and carbon free), increasing numbers of energy storage resources, and ubiquitous sensors that will be placed on the electrical system to manage this new utility ecosystem of the future.

Respectfully submitted,

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