BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY PHILIP WIND PARTNERS, LLC FOR ENERGY FACILITY PERMITS OF A WIND ENERGY FACILITY AND A 230 KV TRANSMISSION FACILITY IN HAAKON COUNTY, SOUTH DAKOTA FOR THE PHILIP WIND PROJECT

SD PUC DOCKET EL25-___

PRE-FILED DIRECT TESTIMONY OF TEDDY HINES
ON BEHALF OF PHILIP WIND PARTNERS, LLC

August 15, 2025

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, employer and business address.

A. My name is Teddy Hines. I am a Senior Staff Engineer, Renewable Engineering at Invenergy LLC (Invenergy). My business address is One South Wacker Drive, Suite 1500, Chicago, Illinois, 60606.

Q. On whose behalf are you providing this testimony?

A. I am providing this testimony on behalf of Philip Wind Partners, LLC (Philip Wind) in support of its Facility Permit Application (Application) to the South Dakota Public Utilities Commission. The Application is for a permit to construct and operate a wind energy facility which will have a nameplate capacity of up to 333 megawatts (MW) and deliver up to 300 MW to the point of interconnection (Wind Energy Facility), and a transmission facility which will operate at 230 kilovolts (kV) and be approximately 7 miles in length (Transmission Facility). The Wind Energy Facility and the Transmission Facility are collectively referred to as the Project.

Q. Briefly describe your educational background and professional experience.

A. I have a Bachelor's Degree in mechanical engineering from the University of Wisconsin-Madsion. I joined Invenergy in 2023 as a staff engineer, and assumed my current role as a senior staff engineer in 2025, where I am responsible for siting and optimization of turbine layouts for wind energy facilities, as well as performing analysis of energy production and calculate potential energy generation from potential turbine and siting configurations. My resume is attached as **Exhibit 1**.

II. PURPOSE OF TESTIMONY

Q. What is your role with respect to the Project?

A. I am responsible for engineering related to the Project, Project siting and design, and procuring studies and analyses related to the performance of the Project.

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to provide a brief overview of the Project, discuss some engineering analysis as it relates to Project design, and address the electrical characteristics of the Project.

Q. Identify the sections of the Application that you are sponsoring for the record.

A. I am sponsoring the following portions of the Application:

- Section 4: General Site and Facility Descriptions
- Section 6: Environmental Information
- Section 11.6: Electromagnetic Interference
- Section 19: Reliability and Safety
- Appendix F: Hydrology Study
- Appendix U: Microwave Study
- Appendix V: AM and FM Radio Report
- Appendix W: Communication Tower Study
- Appendix X: Obstruction Evaluation & Airspace Analysis

Q. What exhibits are attached to your Direct Testimony?

A. I am sponsoring the following exhibit:

- **Exhibit 1**: Teddy Hines Resume

III. PROJECT AND SITE OVERVIEW

Q. Describe the Project, including where it is located.

A. The Project includes a wind energy facility that will have a nameplate capacity of up to 333 MW and deliver up to 300 MW to the point of interconnection. The wind energy facility will include up to 87 wind turbines located on 91 potential turbine locations. The Project also includes an associated transmission facility, which will operate at 230 kV and be up to 7 miles in length. The Project is located northwest of the town of Philip in Haakon County, South Dakota. The Project will be located

on privately-owned land within the 68,300-acre general Project Area, of which 51,189 acres are leased for the Project, and within which all Project Facilities will be constructed. The Project includes the following facilities (Project Facilities):

- Up to 87 wind turbines (located on 91 potential turbine locations);
- A 34.5-kV electrical collection system;
- A 230-kV Collector Substation (Collector Substation);
- An approximately 7-mile-long, 230-kV generator transmission tie line (Gen-Tie Line);
- An operations and maintenance facility (O&M Facility);
- A supervisory control and data acquisition (SCADA) system;
- Access roads;
- Up to three temporary and/or permanent meteorological (MET) towers;
- Up to three Aircraft Detection Lighting System (ADLS) towers; and
- Temporary construction areas, including crane paths, public road improvements, three general construction laydown yards, staging areas, and concrete batch plant(s), as needed.

Q. How and where will the Project interconnect to the electric grid?

A. An approximately 7-mile-long gen-tie line will transmit electricity from the Collector Substation to the point of interconnection – a new Switchyard will be constructed by Western Area Power Administration (WAPA) at the northeast corner of the Project Area. The proposed Gen-Tie Line route has been presented to landowners and there was no opposition to the route. The Switchyard's location would be approximately 1 mile east of the existing Philip Tap, which is the interconnection point for the Basin Electric 230-kV transmission line to WAPA's Oahe to New Underwood 230-kV transmission line. To accommodate both the existing Basin Electric interconnection and the Project interconnection, and to improve access to the Switchyard, WAPA will construct the new Switchyard at a more accessible location within the Project Area. This location was also selected by WAPA to minimize environmental impacts such as tree clearing, and to accommodate existing uses on some of the lands. The Switchyard would replace the existing

Philip Tap, and both the Project and the Basin Electric transmission lines would interconnect at the proposed Switchyard. The electricity generated by the Project will be transmitted onto the grid operated by Southwest Power Pool (SPP) where it will contribute to meeting electricity demand across the SPP service territory.

Q. What is the proposed construction schedule for the Project?

A. Construction of the Project is planned to begin in June 2026 and be completed by the end of 2027, pending successful completion of permitting, agency approvals, and other development and pre-construction activities. A preliminary construction schedule is included as Table 4.4.1 in the Application and is included below:

Table 4.4.1-1. Preliminary Construction Schedule

Activity	Start	End
Construction Mobilization	May 2026	
Site Preparation	August 2026	November 2026
Access Roads	August 2026	November 2026
Turbine Foundations	September 2026	April 2027
Electrical Collection System	October 2026	July 2027
Turbine Deliveries	April 2027	August 2027
Turbine Installation	April 2027	August 2027
Turbine Wiring	July 2027	September 2027
Mechanical Completion	July 2027	October 2027
Backfeed	July 2027	July 2027
Commissioning	August 2027	November 2027
Substantial Completion	November 2027	November 2027
Commercial Operations	December 2027	

Q. How will Philip Wind avoid or minimize potential impacts to geologic and soil resources?

A. Geotechnical borings will be completed, and soil samples will be tested to determine the engineering characteristics of the site subgrade soils and develop Project Facility-specific design and construction parameters. Due to the limited

developed or potential economic mineral resources within the Project Area, the construction and operation of the Project poses no impact to economic mineral resources. Therefore, no mitigation is required for impacts to mineral resources. The Project Layout has been designed to limit construction cut and fill work and limit construction in steep slope areas. Philip Wind will also develop and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with South Dakota Department of Environmental and Natural Resources (SDDENR) storm water permitting requirements, which will include the implementation of best management practices to control erosion, sedimentation, and storm water runoff.

Q. Are significant impacts to hydrological resources anticipated?

A. The Project is not expected to cause significant changes to existing hydrology or stormwater runoff. Any dewatering, if construction of Project facilities requires, will be temporary and minimized to the extent practicable, and will be conducted in accordance with the General Permit for Temporary Discharge Activities and the Temporary Permit to Use Public Waters from the SDDANR. Moreover, the environmental assessment (EA) performed by WAPA for this Project concluded that the Project's impacts to the hydrologic setting and water resources would be negligible. Finally, Project Facilities have been designed to minimize impacts on surface water resources.

IV. PROJECT FACILITIES

Q. Describe the foundations that will be constructed for the turbines.

A. Philip Wind plans to use a spread footing foundation design for the turbines. Foundation size will vary based on turbine model and will have a depth of up to 15 feet. Except for approximately 12 inches that will remain aboveground to allow turbine towers to be bolted to the foundations, the foundations will be underground. Turbine foundations will be constructed from concrete and rebar to support the turbine structures. The final foundation designs will be engineered for the specific

turbine model, soils, and subsurface conditions at each turbine location and stamped by a registered professional engineer.

Q. Describe the turbine towers.

A. Turbine towers will be self-supporting, tubular steel towers connected to turbine foundations by anchor bolts. The towers will be painted a non-glare white, off-white, or gray to comply with FAA regulations. Access to the turbines will be through a lockable steel door at the base of each tower. Within the tower, access to the nacelle will be provided by a ladder connecting platforms and equipped with a fall-arresting safety system. The turbine's tubular tower has a 5-foot radius, surrounded by a 50-foot gravel pad, resulting in a 55-foot radius of long-term disturbance. In total, 14 acres of long-term ground disturbance impact is anticipated to result from site turbine structures.

Q. Please describe the other parts of the wind turbine.

A. The turbine also includes nacelles, hubs, rotor blades and turbine transformers. Each is described below

Nacelles: Turbine nacelles will house the main mechanical components that transform the wind's kinetic energy into electricity. The nacelle will be connected to the tower by a yaw system. Motors power rotation of the yaw drive assembly consists of a machine base frame mounted on a roller or sliding bearing that is attached to the tower via a bolted yaw ring. The rotation of the yaw drive allows for the turbine to be oriented into the direction of the wind to maximize energy production.

The main components inside the nacelles are the main shaft, gearbox, and generator. Mechanical and/or ultrasonic anemometers and weathervanes will be externally mounted at the rear of the nacelle to provide real-time wind speed and direction data to the controller. Based on the data collected, the turbine yaw system constantly rotates the nacelle, hub, and blades into the wind, while the blade pitch

system continuously adjusts the pitch of the blades to optimize the output of the generator based on wind speeds. The gearbox adjusts shaft speed to maintain generator speed in low and high wind speeds.

Turbine Hubs: Turbine hubs will connect the three rotor blades to the main shaft. The hubs will be mounted directly to the main shaft and house three electrically actuated hydraulic blade pitch systems. In addition to optimizing the output of the generator, the pitch systems act as the main braking system for the turbines. Braking under normal operating conditions will be accomplished by pitching the blades perpendicular to the wind. The turbine control system will automatically adjust the pitch of the blades and brake as necessary in high wind conditions. A backup power system ensures the blades can be pitched in the event of grid loss. The control system will also alert the turbine when the wind is strong enough to begin turning the generator and producing electricity at the “cut-in” wind speed. The turbines will also be equipped with a mechanical brake located at the output shaft of the gearbox to stop the hub’s rotation in the event of a storm, fault, or maintenance.

Turbine Rotor Blades: Turbine rotor blades will be connected to the hub and capture kinetic energy from the wind. The rotor blades will be non-metallic and equipped with a sophisticated lightning protection system designed to conduct lightning from the receptors at the tip of each blade, down through the blade, hub, and tower, and then finally dissipated via the earthing insulation system incorporated into the foundation.

Turbine Transformers: Electricity produced by the generators will be routed through insulated cables in the power rail to a safety switch and then to a transformer, which will increase the voltage to 34.5 kV. The transformer may be located internally to the turbine towers or externally at the base of the towers. External transformers will require a small, concrete slab foundation within the gravel area at the turbine base for support. The exact dimensions of the

transformers and concrete slab will depend on transformer manufacturer specifications and site-specific engineering requirements. Typically, a pad-mounted transformer has dimensions of approximately 10 feet by 10 feet and a height of 8 feet. After the voltage of the electricity is increased to 34.5 kV, it will be fed into the electrical collection system.

Q. Describe the electrical collection and SCADA systems.

A. Electricity will be routed from the turbine transformers to the Collector Substation through an electrical collection system that aggregates the electricity of groups of turbines. The electrical collection system will be comprised of underground collector circuits and aboveground junction boxes as required for connections or splices. The electrical collection system will be designed for operation at 34.5 kV and terminate at the Collector Substation. Up to 109 miles of underground collector circuits will be installed, depending on the final Project Layout. The footprint of an aboveground junction box, including a gravel pad and bollards, will be up to 5 by 5 feet. In total, less than 1 acre of long-term ground disturbance impact is estimated to site aboveground junction boxes associated with the electrical collection system. The Project will be monitored by a SCADA system that will provide telemetry, control, and communication among the turbines, Collector Substation, Gen-Tie Line, O&M building, ADLS, and transmission system, enabling the Project to be monitored in real-time by technicians as well as staff at a 24/7 off-site operations facility. The SCADA system will utilize fiber optic cables that will primarily be installed concurrently with the electrical collection system.

Q. Describe the Collector Substation.

A. The Collector Substation will increase the voltage from the electrical collection system to that of the transmission system at the point of interconnection (230 kV). The Collector Substation will include two 34.5-kV to 230-kV main power transformers, a transformer containment area, control enclosure, overhead bus and associated structures, circuit breakers, disconnect switches, relay panels, surge arresters, battery banks, grounding system, and relaying, metering, and

communication equipment. Fencing around the Collector Substation will likely be a chain link design 7 feet high topped with 1 foot of barbed wire to comply with the National Electric Safety Code (NESC). The Collector Substation is estimated to have 8 acres of long-term ground disturbance impact.

Q. Describe the Gen-Tie Line.

A. The Gen-Tie Line will transmit electricity approximately 7 miles from the Collector Substation to the point of interconnection. The Gen-Tie Line will be an overhead 230 kV transmission line of a three-phase, single-circuit, monopole design. H-frame structures may be used where necessary to reduce the height of the structures and to meet code clearances at utility crossings. The final Gen-Tie Line structure types and locations will be determined during final engineering and will be dependent on a variety of constraints, including but not limited to, crossing agreements, environmental constraints, landowner constraints, and geotechnical conditions. The conductor will be sized to carry the electricity of the Project and meet any thermal stability, vibration resistance, or other specific technical criteria required. Fiber optic cable will run the length of the Gen-Tie Line for communications. The Gen-Tie Line will require a 150-foot-wide ROW and is routed on land under long-term lease agreements and easements that allow for the construction of all Project Facilities. Tangent transmission structures will be approximately 80 to 135 feet tall and turning and dead-end transmission structures will be approximately 90 to 150 feet tall. The transmission structures will be single pole or H-frame structures, likely made of weathered steel. Transmission structures will be placed approximately 900 feet apart with conductors approximately 25 to 30 feet above ground level, meeting applicable NESC requirements. Transmission structures will utilize a delta or vertical cross-arm configuration. Transmission structures will either be secured using concrete foundations or directly embedded and backfilled with crushed rock or native soils. Transmission structures that are considered medium angle, heavy angle, or dead-end structures will have concrete foundations. Tangent and light angle structures may be placed on poured concrete foundations or directly embedded. Each

directly embedded transmission structure will have approximately 30 to 40 square feet of long-term ground disturbance impact. Each concrete foundation for a transmission structure will have approximately 50 to 110 square feet of long-term ground disturbance impact. In total, the Gen-Tie Line transmission structures are estimated to have less than 0.1 acres of long-term ground disturbance impact.

Q. Describe the O&M facility.

A. The O&M Facility will be a two-story building that will house operating personnel, offices, operations and communication equipment, and storage for parts and maintenance. Construction tools, materials, equipment, and vehicles would be stored at the laydown yard until needed for construction activities. The O&M building would include a gravel parking area and an outdoor storage area for larger equipment and materials, which would be fenced in for safety and security. The building would also have running water provided by the existing rural system. If connection to the rural system is not feasible, a water supply well will be required. The O&M Facility is estimated to have 5 acres of long-term ground disturbance impact.

Q. Describe the MET towers.

A. Up to three MET towers may be installed to acquire wind data to confirm turbine performance. The MET towers will be self-supporting with heights not to exceed the hub height of the turbines. MET towers will be marked and lit as specified by the FAA. Final MET tower locations will depend on the final location of the turbines and specifications of the turbine manufacturer and financing parties. In total, less than 1 acre of long-term ground disturbance impact is estimated to site MET towers.

Q. Describe the access roads used for the Project.

A. Where practicable, existing public roads, private roads, and field paths will be utilized to access the Project. Existing roads may require improvements before, during, or after construction. Where necessary, new access roads will be

constructed and maintained to facilitate year-round access to the Project. Access roads connected to turbines will be all-weather, gravel surfaced, and approximately 16 feet wide. During construction, access roads may need to be temporarily widened to approximately 40 feet to accommodate transportation of the turbine erection crane and other large construction equipment. Total access road length across the entire Project shall not exceed 44 miles. In total, 84 acres of long-term ground disturbance impact is estimated to site access roads.

Q. Describe the ADLS towers.

A. The Project will comply with FAA marking and lighting standards to promote aviation safety. Turbine nacelles will be equipped with red lights to provide nighttime visibility to pilots. If approved by the FAA, an ADLS will be installed to minimize illumination time of the lights. An ADLS is an automated radar-based system that monitors airspace and activates lighting when an aircraft is detected at or below 1,000 feet above turbine tip height and approaching within 3 miles of a turbine location. When an aircraft exits the detection zone, the ADLS will turn the lights off. Philip Wind will work with the FAA to seek to implement an ADLS that is compliant with SDCL 49-41B-25.2.

ADLS towers are up to 100 feet tall and are equipped with a Doppler X-band radar mounted to the top of the tower. The size of the tower and its foundation design will depend on the tower location and proximal topography. An outdoor cabinet containing ADLS equipment will be located at the base of the tower. The ADLS will be powered by the nearest turbine or local distribution line; a generator may be installed for back-up power. If the system is shut down due to an event such as a power outage, turbine lighting will switch to default operational mode, which involves regular lighting per FAA requirements. Equipment at the base of the ADLS towers will be enclosed by fencing, with a footprint of approximately 35 by 35 feet. In total, less than 1 acre of long-term ground disturbance impact is estimated to site three ADLS towers.

V. TURBINE SELECTION

Q. Has Philip Wind made a final turbine model selection for the Project?

A. Philip Wind requires the flexibility to select the final turbine model prior to construction to remain competitive in the current marketplace during turbine procurement. Philip Wind identified three potential models it is considering. These are: General Electric 3.8-154; Nordex 163-5.9; and Vestas 163-4.5. The turbine models and specifications are provided in Table 4.2.1-1 of the Application and are included below. These are not exhaustive of all potential turbine models that may be used for the Project, and as noted in Section 4.2.1 of the Application, Philip Wind respectfully requests that the Permit allows for the use of turbine models of comparable capacity and specifications, provided conditions specified in the Permit can be met.

Table 4.2.1-1. Turbine Models and Specifications

Turbine Model	Nameplate Capacity (MW)	Expected Number of Turbines	Hub Height		Rotor Diameter		Tip Height	
			Feet	Meters	Feet	Meters	Feet	Meters
GE3.8–154	3.8	87	322	98	506	154	575	175
N163-5.9	5.9	56	355	108	535	163	624	190
V163-4.5	4.5	74	322	98	535	163	590	180

VI. PROJECT CONFIGURATION

Q. Is the Project's proposed configuration depicted in Figure A-2 of Appendix A to the Application?

A. Yes. Figure A-2 in Appendix A to the Application contains the representative Project Layout and includes proposed locations of Project Facilities.

Q. Is the Project sited to minimize potential environmental impacts?

A. Yes. As discussed in the Direct Testimony of Michelle Phillips and in the Application, the Project is compatible with existing wildlife use of the area and avoids or minimizes impacts to sensitive species and their habitats. Philip Wind has also designed the Project to minimize impacts to other environmental resources, including wetlands, grasslands, water and subsurface geology, and cultural resources, as well as to avoid any federal lands.

Q. Is the Project sited to minimize its footprint?

A. Yes. Philip Wind has designed and will construct the Project so as to minimize the amount of land that is impacted by the Project. The Project Layout reflects an optimal configuration for a Project within the Project Area, while demonstrating Philip Wind's efforts to minimize the footprint of the Project. Compared to earlier wind energy facilities with smaller nameplate turbines, Philip Wind presents an opportunity to minimize the footprint on the land while generating even more energy and economic benefits.

Q. Is the Project configuration designed to comply with all applicable state setback requirements?

A. Yes. The Project will meet or exceed setbacks, conditions, and siting standards required by State governing bodies, including any final permit conditions. Discussion of state siting requirements and setbacks is included in the Application at Section 5.2. Haakon County is unzoned and has no siting requirements for wind facilities.

Q. Where is the Project at with respect to micro-siting the turbines?

A. As discussed previously and in the Application, Philip Wind has performed a thorough suite of environmental studies, engineering analyses, and other development activities to refine the Project. As part of those efforts, Philip Wind has conducted on-site micro-siting of turbine locations. Final micro-siting will occur prior to construction based on final geotechnical investigation, engineering design, and other site-specific factors.

Q. Could remaining work require changes to the turbine locations?

A. Yes. The remaining work could necessitate minor shifts to the proposed turbine locations.

Q. What is Philip Wind's request with respect to flexibility for future minor shifts in the turbine locations?

A. As discussed in Section 4.2 of the Application, Philip Wind respectfully requests that the permit allow turbines to be shifted within 250 feet of their currently proposed locations, so long as they are located on leased land, specified noise and shadow flicker thresholds are not exceeded, cultural resource impacts and documented habitats for listed species are avoided, and wetland impacts are avoided or are in compliance with applicable United States Army Corps of Engineers (USACE) regulations.

Q. With respect to other facilities, what is Philip Wind's request with respect to final micro-siting?

A. Adjustments to the location of transmission structures for the Gen-Tie Line may also be necessary. Therefore, Philip Wind respectfully requests that the Permit allow Gen-Tie Line transmission structures to be shifted within the 150-foot-wide Gen-Tie Line ROW as needed, so long as the transmission structures are located on leased land, cultural resources are avoided or mitigated in consultation with the South Dakota State Historic Preservation Office (SHPO); wetland impacts are

avoided or are in compliance with applicable USACE regulations; and all other applicable regulations and requirements are met. Adjustments to the location of the electrical collection and SCADA systems, Collector Substation, O&M Facility, access roads, MET towers, ADLS, and temporary construction areas may also be necessary. Therefore, Philip Wind respectfully requests that the Permit allow the location of these facilities to be adjusted, as needed, so long as they are located on leased land, cultural resources are avoided or mitigated in consultation with the SHPO; documented habitats for listed species are avoided; wetland impacts are avoided or are in compliance with applicable USACE regulations; and all other applicable regulations and requirements are met.

VII. RELIABILITY AND SAFETY

Q. Briefly discuss the reliability and safety concerns taken into account when designing the Project.

A. The Project is located in a rural setting in an area of low population density; construction and operation of the Project will have minimal impacts on the security and safety of the local population. Philip Wind will communicate regularly during construction and operation with local first response agencies and coordinate training meetings in accordance with the Project's emergency response plan. Section 19.1 of the Application lists out several safety measures Philip Wind will take to reduce the chance of physical and property damage, as well as personal injury, at the site. Regarding the Gen-Tie Line, the transmission line will include very few mechanical elements, which results in high reliability. The infrastructure is built to withstand weather extremes and the circuits are automatically taken out of service by the operation of protective relaying equipment when a fault is sensed on the system. The transmission facility will be designed and constructed in compliance with State, County, and utility standards regarding clearance to ground, clearance to utilities, clearance to buildings, strength of materials, and ROW widths. The transmission facility will be equipped with protective devices, such as breakers and relays, for safety purposes. Breakers and relays will be

located where the transmission facility connects to the Interconnection Switchyard and will de-energize the line in the event of an emergency. In addition to protective devices, proper signage will be posted warning the public of the safety risks associated with energized equipment.

Q. In designing and siting the Project, did Philip Wind conduct any analyses to see how the Project may interfere with other communications in the area?

A. Yes. As part of the siting and design process, Philip Wind procured a Communication Tower Study (Appendix W), a Microwave Study (Appendix U), an AM and FM Radio Report (Appendix V), and an Obstruction Evaluation and Airspace Analysis (Appendix X).

Q. Describe the Communication Tower Study.

A. Comsearch conducted a communication tower study to evaluate the Project's potential effects to licensed communication facilities. Based on review of Federal Communication Commission (FCC) Antenna Structure Registration, Universal Licensing System, national and regional tower owner databases, and the applicable local planning and zoning regulations, one communication antenna was identified within the Project Area, and one tower structure and eight communication antennas were identified within 1.2 miles (2 km) of the Microwave Project Area. The single tower structure contains five of nine total communication antennas; the remaining four communication antennas (one within the Microwave Project Area and 3 outside the Microwave Project Area) are located on a variety of other structure types (e.g. guyed towers, monopoles, silos, rooftops, or portable structures). The antennas are used for land mobile and microwave services in the area. Philip Wind has sited Project turbines such that the rotors are outside of any communication beam paths to avoid disturbances to communication systems. If, after construction, Philip Wind receives information related to communication systems interference potentially caused by Project operation where reception is currently good, Philip Wind will resolve such problems on a case-by-case basis.

Q. Describe the Microwave Study.

A. Comsearch conducted a microwave study to evaluate the Project's potential effects to FCC-licensed microwave paths. The analysis consisted of a Fresnel x/y/z axis study. The Fresnel Zone shows the narrow area of signal swath calculated for the identified microwave paths in the Microwave Project Area. Two unique FCC database point-to-point microwave paths were identified within the Project Area. Philip Wind designed the Project Layout to avoid impacts to both existing microwave paths.

Q. Describe the AM and FM Radio Report.

A. Comsearch completed an amplitude modulation (AM) and frequency modulation (FM) radio report to evaluate the Project's potential effects upon FCC-licensed radio frequency facilities. The nearest AM or FM stations are located approximately 18.6 miles from the Project Area. Therefore, no impacts to AM or FM stations are expected to occur.

Q. Describe the Obstruction Evaluation and Airspace Analysis.

A. Aviation Systems, Inc., conducted an obstruction evaluation and airspace analysis. There are two Department of Defense (DoD) radars near the Project Area, but the Project Area is not within either of these radar's line of sight, therefore the project will not have a significant impact on these radars. There are no military airspace or training routes overlap the Project Area. The airspace analysis also evaluated the potential impact of obstructions to the Next-Generation Radar (NEXRAD) Weather Surveillance Doppler Radar Stations, and determined that the Project is in a "No Impact Zone," and no impacts are anticipated. I also note that Philip Wind received Determinations of No Hazard for a previous version of the Project layout. Philip Wind submitted updated requests to the FAA on April 30, 2025, and those requests are currently being processed. Philip Wind will provide an update in this docket when the FAA issues the Determinations of No Hazard.

VIII. CONCLUSION

Q. Does this conclude your testimony?

A. Yes.

Dated this 15th day of August, 2025

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Theodore (Teddy) Hines