# Weather Information System to Effectively Reduce Oilfield Delays and Disruption (Wise Roads)

## Submitted by:

**Western Dakota Energy Association**

- **Total Funding Request - $250,000**
  **Total Project Costs - $500,000**
  **Project Duration: 24 months**

# Project Description

- Wise Roads – Weather Information System to Effectively Reduce Oilfield Delays and Disruption – will use research-grade weather monitoring equipment to accurately record weather data, which will in turn be used as a management tool to reduce the scope and duration of weather-related road restrictions that impede the movement of truck traffic associated with the oil industry. The project will leverage the research expertise of two outreach centers of North Dakota State University to ensure the data collected is accurate and accessible, and that it is used appropriately by county road managers.

# Project Description

Oil producers and the service companies that support the oil producers depend on the use of county and township gravel roads to move commodities and deliver supplies to and from well pads, tank batteries, disposal wells and other industry facilities. However, when inclement weather strikes, local governments impose road restrictions that effectively prohibit the movement of truck traffic until road conditions improve. Restrictions are necessary to protect the integrity of roads and the safety of the traveling public, but industry truckers have justifiably complained that at times restrictions are imposed more broadly than necessary.

WDEA, in cooperation with the ND Agricultural Weather Network (NDAWN), plans to deploy up to 50 research-grade weather stations throughout the oil-producing counties. Initial siting emphasis will focus on the top four producers – Dunn, McKenzie, Mountrail and Williams Counties. The goal of the Wise Roads project is to provide real-time weather information, especially precipitation data, to allow county/township road managers to more precisely identify those roads that require temporary restrictions, and more importantly, exclude those that do not.

# TECHNICAL REVIEWERS' RATING SUMMARY

| | | Technical Reviewer | | | |
|---|---|---|---|---|---|
| Statement | **Weighting Factor** | **G-49-02A** | **G-49-02B** | **G-49-02C** | **Average Weighted Score** |
| Objectives | **9** | 5 | 4 | 4 | 36 |
| Achievability | **7** | 4 | 4 | 5 | 28 |
| Methodology | **8** | 5 | 3 | 4 | 32 |
| Contribution | **8** | 5 | 3 | 5 | 32 |
| Awareness / Background | **5** | 4 | 4 | 5 | 20 |
| Project Management | **3** | 4 | 3 | 4 | 9 |
| Equipment / Facilities | **2** | 5 | 3 | 3 | 6 |
| Value / Industry-Budget | **4** | 5 | 4 | 4 | 16 |
| Financial Match – Budget | **4** | 4 | 4 | 3 | 12 |
| ***Average Weighted Score*** | | 231 | 179 | 214 | 208 |
| ***Maximum Weighted Score*** | | | | **250 possible points** | |
| | | | | | |

# Technical Reviewer Totals

- G-49-02A

Average Weighted Score: **231 out of 250**

**FUND**

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- G-49-02B

Average Weighted Score: **179 out of 250**

**FUND**

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- G-49-02C

Average Weighted Score: **214 out of 250**

**FUND**

# Technical Reviewer Comments

**Reviewer G-49-02A**

Data from this project will be directly relevant to the local agencies and oil industry to be more effective and efficient in their respective operations. Without the proper equipment it would be hard to have good information to make precise decisions. Currently, all entities are depending on old fashioned methods and visual observations rather then actually measured quantities at the right locations.

**Recommendation: Fund**

**Reviewer G-49-02B**

Guidelines should be followed to ensure accurate and representative data is obtained when siting each location. NDAWN will be a great asset as they have experience in siting weather stations all across North Dakota. Maintaining each site is a key component to receiving accurate data. Typical maintenance should include cleaning the sensors, sensor calibration and site inspection. Their plan to inspect a minimum of two times per year is acceptable. The proposal states that WDEA will collaborate with county/township road managers in the four counties and beyond to make appropriate use of the weather station data in determining if, when, and where road restrictions are necessary. How they intend to use the data is not specified. Will there be precipitation thresholds for certain types of roadways that will determine if the roadway will be restricted for example?

**Recommendation: Fund**

**Reviewer G-49-02C**

Road closures are debilitating to the oil and gas industry. The county officials are doing what they can with the data available. This would provide better, quicker, and accurate data to local decisions makers. The side benefit is the local farmer and research. The question is how will awareness of the data be disseminated?

**Recommendation: Fund**

# Director's Recommendation:

This project will enhance and expedite an "existing infrastructure of communication" by coordinating decision makers and using technology (not currently tested/used in North Dakota). As technology continues to develop, this project intends to update the baseline in which to determine road restrictions by implementing remote monitoring systems. Much can be learned from this technology and the unanticipated results could be equally invaluable.

**Fund in the amount of $250,000**