Weather Stations out West

What is Wise Roads?

Wednesday, December 18, 2019
West Dakota Energy Association
Western Roundtable – Watford City, ND

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Wise Roads

Weather Information System to Effectively Reduce Oilfield delays And Disruptions
Problem:

When inclement weather strikes, local governments impose weight restrictions on gravel roads that prohibit the movement of oilfield truck traffic until road conditions improve.
SCOPE OF WISE ROADS PROJECT

• Install up to 45-50 weather stations in the oil-producing counties

• Prioritize areas with significant drilling and production activity

• Locate stations to fill gaps in existing RWIN (DOT) and NDAWN networks

• Stations will be owned by NDAWN, with operational costs covered by WDEA

• Work data to incorporate NDAWN and LoadPass into same website.
WISE ROADS PROJECT

- Work with research partners, agriculture, and Industry to maximize benefit
- Install research-grade weather stations in areas with heavy oilfield traffic
- Make data publicly available through NDAWN, LoadPass and other sites
- Provide training to road managers through LTAP
Weather Information System to Effectively reduce Oilfield Delays and Disruptions

Wise Roads First 10 Stations
The new stations can be identified by the precipitation numbers on the map. The names are either related to a nearby community or the township in which the station is located.
EXPECTATIONS OF THE PROJECT

- County Road Departments utilize the weather data to determine the area of impact for closures

- County Road Departments use weather station locations to create/modify road “zones” for issuing restrictions

- Forecast and weather accessible from:
  - Ndenergy.org and LoadPassPermits.com
  - NDAWN (ndawn.ndsu.nodak.edu)
  - County Websites
EXPECTED BENEFITS OF THE PROJECT

- More narrowly define local road restrictions and more geographic zones established.
- Significant savings to oil industry thru improved productivity and reduced revenue loss due to shut-in wells.
- Use of weather data for research to evaluate the performance of road building materials.
- Benefits to agriculture producers, i.e., soil temperature, precipitation, wind speed, etc.
SOLUTION:

Provide accurate weather information, specifically precipitation data, to assist road managers in more precisely identifying roads that require temporary weight restrictions and exclude those that do not.

Provide more detailed weather forecasting data for industry to assist in planning operations.
WEATHER DATA RESOURCES

- **NDAWN.ORG**
  - NDAWN current weather webpage
  - stationname.ndawn.org
    - Example: ratlake.ndawn.org
  - Pictures.ndawn.org
    - Recent images from new stations
  - More to come in the future
Adding soil probes to the stations will provide addition ground temperatures and information to further determine suitability of road use especially in spring during thaw and fall during freeze up.

Starting plan is to use an existing typical county road with a good gravel template with the proper 4% crown in at least four counties.
Multiple probes can be installed at each station, initially three probes will be placed 1. 3” or surface 2. 42” in 6” intervals 3. 8’ or below frost line. Additional probes may be added up to 4-500’ from the station. These would be for road profile data.
WEATHER DATA UTILIZATION

- WDEA in partnership with Oil and Gas Research Council has funded this project and has contracted meteorologist services
  - Jonathan Rosencrans

- Services and tasks
  - Installation, maintenance, and support of weather stations
  - Data utilization
  - Forecasting
  - Training and Support
NDLTAP & WDEA
Together, we do great things!

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“Helping local transportation leaders grow”
ANY QUESTIONS???