MONTANA STATE LIBRARY
MONTANA STATE REFERENCE NETWORK

CASE STUDY: Land Surveying and Engineering with the MTSRN

Leveraging the MTSRN for Efficiency and Innovation

Overview

Stahly Engineering operates five offices across Montana and Wyoming, providing surveying and engineering services to a wide range of clients. As early adopters of the Montana State Reference Network (MTSRN), Stahly Engineering has integrated the network into its daily operations, using it for traditional land surveying, drone work, and even remote projects in areas with unreliable cell coverage.

Chris Kosine, PLS, is the Survey Department office lead at Stahly's Billings location and MARLS chapter president.

The Challenge

Surveying traditionally required dual GPS receivers, UHF radios, and daily base station setup—adding 20 to 30 minutes of extra work per crew and driving equipment costs upward of $25,000 per receiver. With multiple offices and crews, inefficiencies and expenses multiplied quickly, especially in rural areas with limited cell coverage.

The Solution: MTSRN + Starlink Integration

On a recent project in rural Montana**,** Stahly Engineering tested MTSRN corrections delivered through Starlink internet mounted to a side-by-side utility vehicle. This **allowed crews to maintain GNSS corrections even in areas with no cellular service**. This pioneering approach demonstrates how the MTSRN can be extended into even the most remote areas, solving one of the traditional pain points of rural surveying.

Key Benefits

1. **Cost savings:** Avoiding the purchase of additional GPS receivers, which can cost upward of $25,000 each in addition to reduced labor costs associated with time savings.
2. **Time savings:** Cutting out 25 to 30 minutes of setup and teardown each day, saving hundreds of hours per year across multiple crews.

3. **Drone accuracy:** Using the MTSRN for photogrammetry and LiDAR drone operations, achieving survey-grade accuracy without additional equipment.
4. **Scalability:** Every office and crew has access through subscriptions, making it easier to expand without significant upfront hardware costs.

Real-World Impact

By leveraging the MTSRN, Stahly's survey crews save an average of 30 minutes per day, translating into significant client cost savings at $175 to $200 per hour. The network eliminates the need for additional receivers, reduces capital investment, and enables survey-grade drone operations in both photogrammetry and LiDAR. With solutions like Starlink integration, even rural projects benefit from stable, accurate corrections—making the subscription pay for itself many times over.

Why the MTSRN?

As a state-owned, locally operated network, the MTSRN provides unmatched coverage and support tailored to Montana's industries. Competing services may cost more, have slower workflow and lack the same regional reliability. For Stahly Engineering, the MTSRN delivers proven savings; faster workflows; and confidence in a trusted, community-based system built for Montana professionals.

"At one point we all lost cell service, but since we were connected through Starlink, we stayed online and kept working. It showed us that combining MTSRN with Starlink could be a viable solution for surveyors working in remote locations."

—Chris Kosine