Montana State Reference Network

Interim Budget Committee – Section E Report
September 2024

Also available online as a digital report: https://arcg.is/0OWKCj3

September 2024 Progress Update

MTSRN operator Kazi Arifuzzaman meets with Mike Sweet, Research Specialist (retired), W.A. Franke College of Forestry and Conservation, to install an upgraded receiver.

The State Library transitioned the Montana State Reference Network (MTSRN) from a pilot project to a subscription-funded network in April 2024. Since that time, MTSRN has sold 66 subscriptions.

In addition to setting the subscription rate for the network, administrative rules allow the State Library to enter into agreements with contributors that grant them access to use the network in exchange for support and services that expand the reach of the MTSRN and promote its use. The State Library is also excited to offer the MTSRN to educational users for uses directly related to learning, teaching, training, research, and development. MSL has contacted vendors, private sector partners, and academic institutions about establishing agreements. To date, MTSRN has finalized one contributing organization agreement and three educational use agreements, with three additional agreements in process.

The W.A. Franke College of Forestry and Conservation at University of Montana is an example of an educational user and partner. On a recent site visit to the Lubrecht Experimental Forest east of Missoula, the MTSRN Operator met with a Research Specialist to discuss network performance and accuracy. The two worked together to upgrade the site's original receiver to a new Trimble Alloy receiver, which is part of the MTSRN's ongoing efforts to maintain state-of-the-art technology across the network.

In another effort to enhance the coverage and reliability of the network, MTSRN launched a reference station in Miles City. The station is the first in southeastern Montana and marks a significant milestone in ongoing 2024 expansion efforts.

MTSRN Objectives

Objective 1: Establish RTN administrative office and bring pilot network under Montana direction.

Status: Complete

- RTN coordinator hired: December 2021.
- MTSRN Extended Pilot launch date: March 2022.
- Status reporting: MTSRN status map published online, ongoing status reports to key stakeholders. **Montana State Library published a new MTSRN webpage: Montana State Reference Network (mt.gov). Recent outreach: University of Montana site visit (July 24).**

Objective 2: Develop and implement a subscription-based funding model.

Status: In Progress

- RTN business plan: MDT coordinated with MSU on a study of business models for Statewide GNSS implementation. Based in part on the findings of that study, MSL, in partnership with MDT, has chosen to move forward with a state operated, subscription-based model which was authorized through the passage of Senate Bill 60 by the 2023 Legislature. In an effort to minimize administrative expenses and to keep subscriptions costs low, there will be limited subscription types, similar to the model successfully implemented in Utah, Utah TURN. The current subscription rate, beginning July 1, 2024, will be $1500 per login per year. As outlined in Administrative Rule 10.102.7003, MSL will evaluate the MTSRN operating costs each biennium to determine if the subscription rate needs to be adjusted.
- Customers subscribe to the RTN: **The payment portal opened in April, and users can purchase subscriptions. Educational Use Agreements and Contributing Organization Agreements are now available.**
- Revenue is generated from the subscription service. Except in certain circumstances described in administrative rules, effective July 1, 2024, MTSRN users will pay a $1,500 annual subscription fee, per login, to use the network. Fees maintain the operation of the MTSRN, including the cost for the network and support staff. Users that subscribed
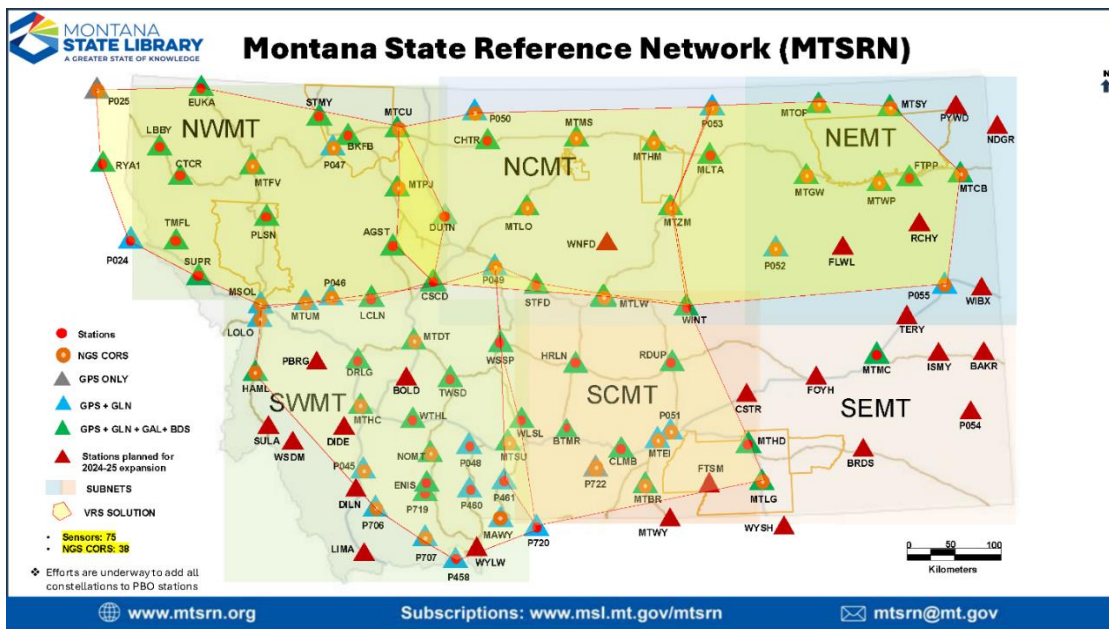
before June 1 received a one-time discounted rate of $1,200 to use the network through July 1, 2025.
- The five-year goal is to increase the number of paid subscribers to 500 for a self-sustaining network. **As of September 1, 2024, MTSRN has 66 paid subscribers, 1 contributing organization agreement, and 3 educational user agreements.**

Objective 3: Operate the existing network and identify priority coverage areas.

Status: In Progress (Ongoing)

- The number of reference base stations increases to meet Montana's business needs: **75 base stations as of September 1, 2024. The count includes the new reference station in Miles City, expanding the network to southeastern Montana.** At least **five** additional stations are expected to come online by the end of 2024. To achieve the goal of statewide coverage, we currently estimate that MTSRN will require a minimum of 131 stations at completion, though this number may be significantly impacted by station placement and other factors related to station performance. MSL projects that 160 stations are a more reasonable target for initial MTSRN network buildout. This number of stations should allow for statewide network coverage with some additional density and redundancy in priority areas to optimize network performance.
- As reported to the Interim Education Budget Committee in June, **due to declining Montana Geospatial Information Act Revenue, MSL did not expend $322,000 (64.5%) in appropriation that would have supported further build out. MSL is monitoring revenue and is not intending to make significant financial investments in the network at this time.**
- Establish RTN working group: MSL has reached out to MARLS leadership for help developing an MTSRN Technical Working Group.

Montana State Reference Network (MTSRN) as of September 1, 2024. To view a live Sensor Map, visit Montana State Reference Network – Sensor Map (mtsrn.org)

MTSRN Glide Path

Year	2024	2025	2026	2027	2028	2029
Stations	80	100	140	160	160	160
Expenses						
Coordinator FTE	$116,662	$121,523	$125,169	$128,924	$132,792	$136,776
Tech FTE	$-	$74,880	$77,126	$79,440	$81,823	$84,278
Platform Hosting Fees	$80,000	$192,000	$224,540	$237,930	$237,930	$237,930
Admin Costs	$54,320	$56,000	$57,680	$59,410	$61,193	$63,028
Other Operating Costs**	$16,000	$55,000	$150,000	$200,000	$200,000	$225,000
Total Expenses	**$266,982**	**$499,403**	**$634,515**	**$705,704**	**$713,738**	**$747,012**
Subscriptions						
Subscription Target	0	100	150	250	350	500
Subscription Cost	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500
Subscription Revenue	**$-**	**$150,000**	**$225,000**	**$375,000**	**$525,000**	**$750,000**
Revenue Gap						
Revenue Gap	**($266,982)**	**($349,403)**	**($409,515)**	**($330,705)**	**($188,738)**	**$2,988**

*Revised 7/3/2024 after feedback from Interim Budget Committee – Section E.

**Other operating costs include outreach funding in FY24/25. During expansion this includes node costs and station purchases for new sites. This will shift to station replacement as buildout slows.