

Kerry: Here is a link with the reporting requirements and deadlines for all.
<https://www.transportation.gov/grants/smart/grants-management>

1. **Lead Applicant:** Three Affiliated Tribes of the Fort Berthold Reservation
2. **Name of Filer:** Dr. Kerry Hartman
3. **Email address of Filer:** khartman@nhsc.edu
4. **Enter the Federal Award Identification Number (FAIN):** SMARTFY22N1P1G38
5. **Reporting Period End Date:** January 31, 2025

6. Overall Status

Provide an overall status of the project's scope, schedule, and budget.

The project is on target for all deliverables to be turned in by February 15, 2025. The budget requests for reimbursement by the subcontractors to Mandan Hidatsa Arikara (MHA) Nation are directly aligned with the expectations of DOT. As the lead sub-contractor, the University of North Dakota (UND) PI collaborates with the Manda Hidatsa Arikara (MHA) Nation's Planning and Grants Office to ensure reimbursement and report submission. The budget has no cost overruns to date.

In the last quarter, activity has shifted from completing the proof-of-flight operations to analyzing and preparing the final report. In this quarter, the project team conducted a drone camp, prepared to provide FEMA Safety UAS courses, conducted in-depth post-flight analysis, continued with community/tribal engagement with several Tribal resolutions and advisory council events, and thoughtfully worked through and applied for a no-cost extension.

The status of workforce development continues to exceed expectations. NHS College continues to collaborate with UND to offer a nine-credit UAS certificate program that will begin in 2025. UND and NHS College collaborated with Mississippi State University to offer emergency responders training through the ASSURE Safe FEMA program that was scheduled to start 19 November 2024, but was canceled due to a inclement winter weather. It has been rescheduled for Spring of 2025. The Workforce Team also successfully executed a third Drone Camp with the MHA Drone in Schools initiative.

Community engagement events continue to a very active part of the grant during this reporting quarter, including two advisory board meetings, along with various Facebook live-streaming interviews and question-and-answer sessions. (Prairie Rose and Thomasine can expand on this section).

7. Significant Activities and Accomplishments

Highlight key activities, accomplishments, and issues during the previous quarter. Report any meetings, audits, and other reviews, design packages submitted, advertisements, awards, construction submittals, construction completion milestones, submittals related to any applicable Recovery Act requirements, media or Congressional inquiries, value engineering/constructability reviews, and other items of significance.

On November 18th the team went to New Town Middle and High School to conduct a Drone Camp for over 120 students of MHA Nation. The project provided students with an opportunity to apply real-world search pattern techniques using drone technology to simulate the early detection of wildfire by identifying and plotting wildfire coordinates with GIS software, students gained hands-on experience with critical tools used in the field, enhancing their understanding of the vital role Autonomous Systems and STEM. This exciting exercise provides opportunities for practical, hands-on drone piloting, fostering teamwork and technical skills in a dynamic, educational environment. The day also included a demonstration of infrared sensing and a presentation of the many job opportunities and career paths in the UAS industry. Unfortunately, due to extreme winter weather conditions, the scheduled trip to Twin Buttes Middle and High School the following day was canceled.

Post-flight analysis has been ongoing during this quarter. A survey was conducted after the Proof-of-Concept flight to gather valuable input from all the subcontractors and critical members involved. The 26-question survey covered areas of Flight Operations, Safety & Risk Management, Flight Crew, Radar/Surveillance Observers & Visual Observers, Post-Flight Debriefing/Operation Observation, Community Engagement & Interaction, and overall Experience & Recommendations. Attached are the results of a survey conducted. A more in-depth analysis of this survey will be provided in the final report which will highlight lessons learned and challenges overcome during operations.

Post-flight analysis was provided and briefed to MHA Tribal members and Drone Team by the flight vendor Valkyrie which will be presented in more depth in the final report. In Summary, they stated decreasing time from 1:45 minutes driving to 22-30 minutes by drone will provide enhanced medical and emergency response support from New Town to Twin Buttes and will save lives. Additionally, the MHA Nation will be able to develop a blueprint for drone healthcare delivery operations that will create economic development and growth. Observations during their flight included:

- Mechanical: Shipping and assembly consumed all spare parts and required extra tooling and time. Improved logistics are needed. Aircraft require minimal maintenance once assembled. Battery malfunctions occurred; new batteries are still being tested.
- Weather: Weather impacted operations. Protocol #1 flight was significantly delayed by weather; Protocol #2 synchronized with weather.
- Communications: Operated nominally within Valkyrie Waiver Parameters.

Finally, this quarter, with the conclusion of the proof-of-concept flight, a cost-benefit analysis is being conducted on the viability and sustainability of drone operations for medical delivery across the MHA Nation, along with other drone transportation use cases. When evaluating models “at-scale”, and looking into benefits over different time duration models, there are clear paths ahead that demonstrate a positive economic impact model for the community. More in-depth information will be provided in the final report presented in two weeks.

8. Unresolved and Significant Issues

Describe any highly significant or sensitive issues requiring action and direction to resolve. Provide a progress update on issues previously reported. Include administrative items and outstanding issues that could have a significant or adverse effect on the project’s scope, schedule, or budget and for each item or issue, provide a status, responsible person(s), and

due dates.

Be sure to address progress towards compliance and issues related to the National Environmental Policy Act (NEPA), the Build America Buy America Act, and the high labor standards prioritized in Executive Order 14052, “Implementation of the Infrastructure Investments and Jobs Act.” Please note: To request any significant scope or budget changes, please contact your Grants Management Specialist.

A no-cost-extension has been requested on 15 January 2025. A meeting was held with DOT on 19 December 2024 to discuss the project history thus far, causes for delays, and current status. The team reviewed the current project timeline and requested a timeline change to June 15th 2025 to allow for an additional drone in school event and further infrastructure analysis in regards to takeoff and landing zones and tying into communication and ground radar infrastructure. This extension request comes vastly due to delays from unavoidable inclement weather during the grant period.

9. What are the top ten milestones for your project? For each milestone, please include the planned completion date and the actual completion date, where applicable.

1. Delineation of resource requirements (coverage area etc.) working collaboratively with the Tribal Council and their representatives (January 1, 2024 – July 31, 2024). Complete Stage 1 on September 15, 2024. The MHA team will continue assessing Stage 2 resource requirements for the remainder of the grant period (February 15, 2025).
2. Identification of infrastructure locations (launch and recovery, Vantis infrastructure). (January 1, 2024 – July 31, 2024). The MHA team will continue assessing requirements for Stage 2 submission for the remainder of the grant period (February 15, 2025).
3. Economic Cost/Benefit/Economic Feasibility Analysis of Use Cases incorporating Assessment of Community Needs (January 1, 2024 – Jan 15, 2025). Ongoing.
4. Implementation Plan Draft including Concept of Operations, Safety Risk Management Document, and Economic Cost/Benefit Analysis (September 1, 2024). Completed 15 August 2024.
5. Final Implementation Plan Written (August 30, 2024). Completed 15 August 2024. This also served as the annual report.
6. Workforce Development Plan including aeronautics articulation agreements, drone camps, and implementation of training programs (August 15, 2023 – October 15, 2024). Ongoing.
7. Establishing government-to-government relationships (August 15, 2023 – February 15, 2025). Ongoing with high levels of community enthusiasm and engagement.
8. Preparation and submission of the Stage 2 SMART proposal (February 15, 2025). Ongoing.
9. Offered Drone Camp Two at Earth Lodge Village (July 17-18, 2024). Completed July 18, 2024.
10. Prototype UAS Live Demonstration Flight (September 16-18, 2024). Completed September 18, 2024.

11. Future Significant Activities: What significant activities are you planning in the next reporting period?

- Collaborate and ensure to develop storage solutions for data collected during the grant and proof-of-concept flight for the MHA Nation to comply with the DMP. Individuals were

assigned at UND and NHS College and will continue to identify, process, and transfer all data.

- Invitations will continue to be extended to all MHA Nation Tribal Council members to serve (or have a representative) on the MHA Drones Project Advisory Board to ensure representation across the six segments of Tribal lands. The next meeting is XXXXXXXX
- A Project Facebook page will continue to be utilized for grant updates and opportunities to educate and interact with the MHA community at large, ensuring strong and transparent communications.
- A publication for the MHA community entitled “Myth-busting Reg Drones” will be continued to be used for community engagement.
- A 9-credit certification program was developed and provided to NHS College. The North Dakota Board of Higher Education is reviewing a proposal with plans for delivery through an articulation agreement with NHS College in Fall 2025. Students will be offered an opportunity in Spring 2025 to start the program utilizing UND courses, with options to engage high school students in an online class.
- FEMA emergency and first responder training will be offered by UND and Mississippi State University in cooperation with NHS College is being rescheduled for Spring 2025.
- The MHA Drone Team now moves into the last phase of implementation to analyze data collected during flight operations and ensure compliance with the DMP. Data will be stored at NHS College and used to provide a final analysis of economic feasibility at the desired Tribal commitment levels for infrastructure and scope of operations. They will guide the need for additional funding in the Stage 2 application.