Quarterly Report – Public Page

Date of Report: *6th Quarterly Report – March 31, 2025*

Contract Number: *693JK32310007POTA*

Prepared for: *DOT-PHMSA*

Project Title: *An Integrated Knowledge Graph Model for Geohazard Monitoring Data*

Prepared by: *University of Wyoming*

Contact Information: *Dr. Minou Rabiei, mrabiei@uwyo.edu*

For quarterly period ending: *March 31, 2025*

1: Items Completed During this Quarterly Period:

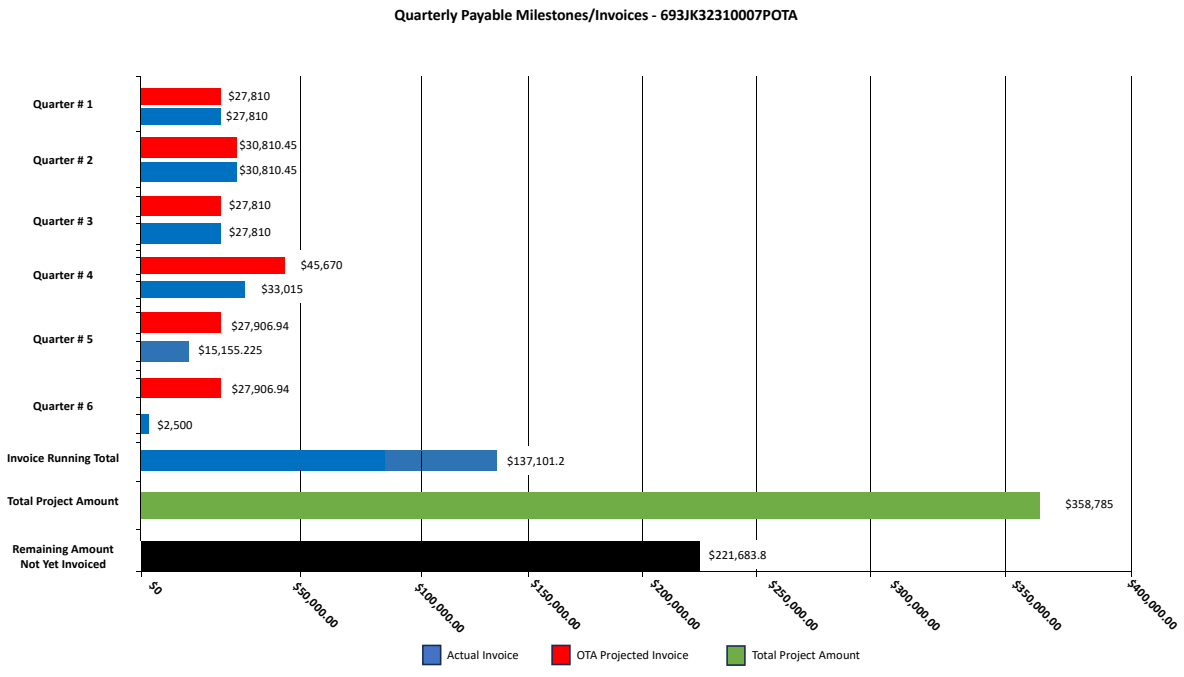
- The ontology model for landslides is fully developed.

2: Items Not-Completed During this Quarterly Period:

- Map the collected and standardized data into the defined ontology
- Integrate data from various sources based on the determined mapping
- Link external data sources and perform semantic enrichment

Justification: The mapping of the collected data into the ontology model and integration of data from various sources based on the determined mapping are in progress but not completed yet due to staffing issues in the project team. The project manager is working on resolving this issue as soon as possible and bringing the project back on schedule. Once these tasks are complete, Task 20: Linking of external data sources and performing semantic enrichment, will be completed.

3: Project Financial Tracking During this Quarterly Period:



4: Project Technical Status

Design and develop ontology and semantic model - *Documentation on the designed and developed ontology model.*

Narrative: Our focus at this stage of the project is on Landslides and therefore the ontology model is developed based on landslides only. This model is built using the **Neo4j** graph database, which allows for efficient representation and querying of complex relationships and attributes. The ontology is designed to be scalable, enabling easy expansion to accommodate new data and additional risk factors as they are identified. The ultimate goal is to create a tool that will assist in landslide risk assessments and help guide decisions related to infrastructure planning, mitigation strategies, and environmental protection.