Quarterly Report – Public Page

Date of Report: 1st Quarterly Report-December 27, 2019
Contract Number: 693JK31910002POTA
Prepared for: DOT PHMSA
Project Title: Data Collection, Normalization and Integration Methods to Enhance Risk Assessment Tools for Decision-Making
Prepared by: GTI (Gas Technology Institute)
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For quarterly period ending: December 29th, 2019

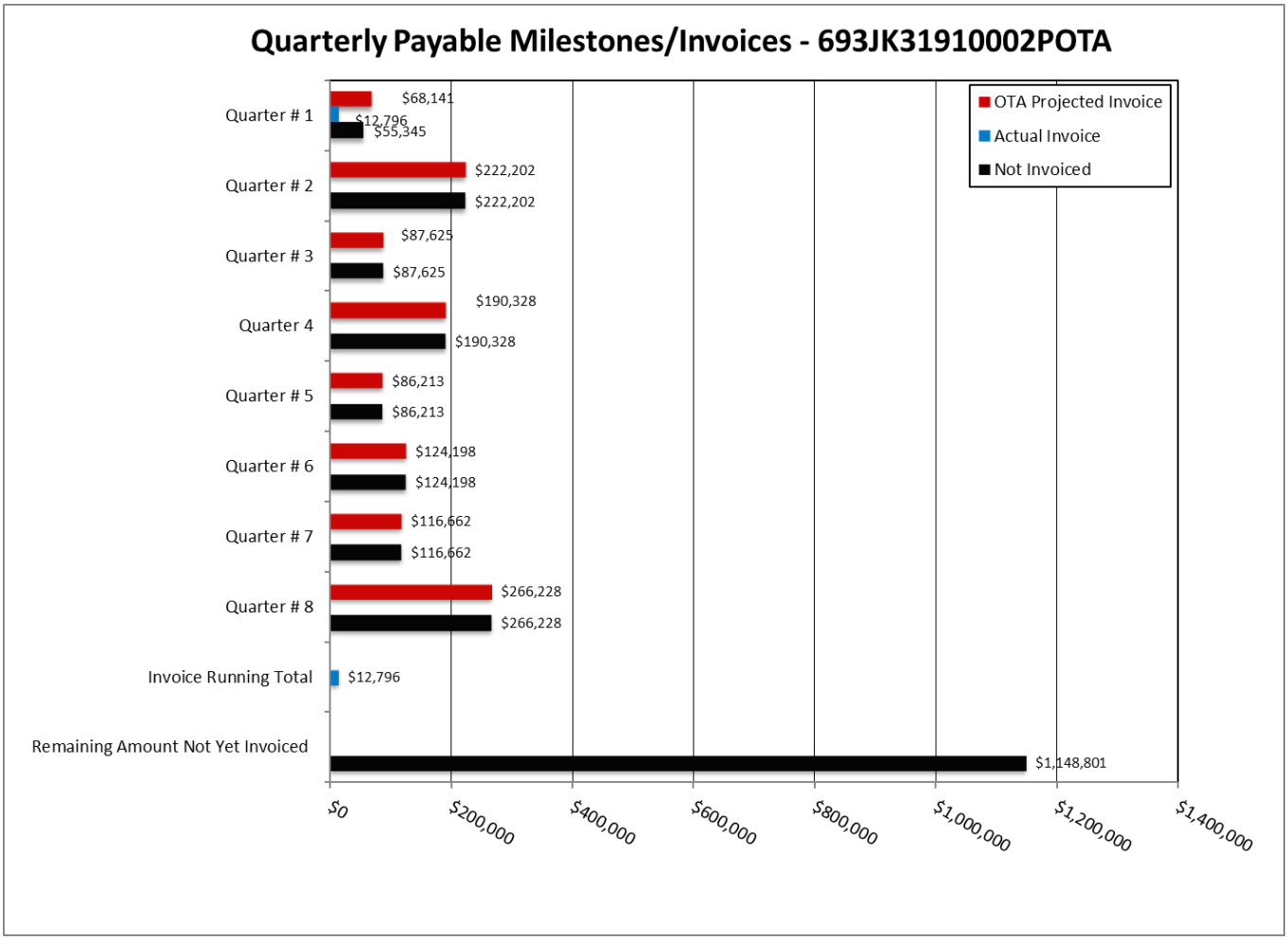
1: Items Completed During this Quarterly Period:

Item #	***Task #***	***Activity/Deliverable***	***Title***	***Federal Cost***	***Cost Share***
1	1	Project Kickoff Activities	Form TAP, Hold kickoff meeting, Circulate minutes	12,796.00	0.00
5	5.1	Project Management	First Quarterly Report	0.00	0.00

2: Items Not-Completed During this Quarterly Period:

Item #	***Task #***	***Activity/Deliverable***	***Title***	***Federal Cost***	***Cost Share***
2	2.2	Data Sources and Methods	Conduct Survey, Identify needs and opportunities	28,369.00	6,875.00
3	4.2.1	Data Integration, Normalization and Uncertainty Tools	Data Driven Insights: Identify and Normalize Data Streams related to natural gas pipeline systems	10,981.00	21,746.00
4	4.3.1	Data Integration, Normalization and Uncertainty Tools	Causal Modeling and Situational Awareness: Causal modeling framework Progress report 1	12,796.00	0.00

3: Project Financial Tracking During this Quarterly Period:



4: Project Technical Status –

1. The project is a full quarter behind schedule due to the length of time it took to get the sub-contracts to a state that made it possible to commence work on the project.
2. None of the technical milestone deliverables have been met, but significant preparatory work has been completed to ensure that work can begin on the technical tasks in January 2020:
    a. Two functioning Bayesian networks have been transferred to the University of Maryland team by GTI:
        i. A network and draft report that captures the causal elements leading to 3rd party damage on underground assets
        ii. A network and draft report that captures the causal elements leading to inadequate locating practices
        iii. The networks draw on multiple data sources and have addressed data normalization, merging and quantification of the networks.
        iv. A team meeting will be held in the first half of January to discuss how these two base networks can be emerged to meet the objectives of this project
    b. Two workshops have been scheduled on January 23rd where the full project team will meet with PG&E subject matter experts on;
        i. PG&E's experience with 3rd party damage and the hundreds of data elements they feed into predictive models

ii. PG&E's experience with leaks and emissions. A topic of particular interest to this project is how to integrate subsidence data derived from lidar and other sources into risk models that predict system leaks
iii. Both workshops will focus on identifying improvements to existing models and data analysis techniques that will be of use to operators. Clear sets of impactful deliverables will be identified
iv. Each member of the project team is preparing a pre-read to distribute to the PG&E subject matter experts in advance of the workshops to ensure that they can address the needs of the project.

c. In February web meetings will be held with Atmos and Exelon separately where they will be informed of the outputs from the PG&E workshops and the project team will work with them to incorporate their viewpoints and identify additional data sources that can support the project
d. GTI is setting up a Microsoft Azure framework to support the data storage, analysis, tool storage and reporting needs of the project. The framework will be functional in January 2020 and processes will be established to ensure full access for all project members
e. GTI has provided Lumina with past surveys and reports that will be useful in designing the survey that will be generated for this project. GTI and Lumina will meet on this topic early in January and begin developing a survey to address this project's needs
f. GTI purchased a two-year subscription to the commercially available AI framework that will be used for the Causal Modeling and Situational Awareness framework. Training on the system will take place in January 2020.
g. The body of literature for review of data quality, data governance, data synthesis and blockchain approaches has been assembled
h. The PI for this project (Ernest Lever, GTI) and Dr. Khalid Farrag, GTI, the PI for DOT project 693JK31910005POTA, Procedures for Selecting Locating and Excavation Technologies https://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=849&s=8677BE97C33E46B3AECC3A1363D57CD3&c=1 have agreed to closely coordinate activities due to the potential for synergies between these two projects. The 3rd party damage models will be beneficial for the locating and excavation technologies project and this project will benefit from a good understanding of the tools to be provided in the locating and excavation technologies project.

5: Project Schedule –

1. The project is a full quarter behind schedule due to the length of time it took to get the sub-contracts to a state that made it possible to commence work on the project
2. The process for requesting a no-cost-time-extension of one quarter has been initiated with the GTI contracts department
    a. The PHMSA contract officer has been notified and asked to provide an editable version of the current contract
    b. The project manager has been provided with all the requirements for justifying the extension
    c. The project manager will address all the requirements and submit them for approval as soon as the editable document is received from the contracts officer
3. All team members have been fully informed of the project status and are ready to commence work starting January 2nd, 2020
4. From a project schedule perspective, if the extension is approved, all milestone deliverables other than the kickoff activities will be shifted by one quarter.
5. The extensive preparatory work described above will ensure that all task work will proceed efficiently in January 2020.