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Provision Pipe Rehabilitation Software

SCOPE SYNOPSIS

BACKGROUND:

OWWSC is interested in the use of artificial intelligence (AI), specifically machine learning (ML), to virtually assess the condition and risk of its water pipes and predict water pipe failure. The goal is reduction of bursts, non-revenue water and maintenance of other assets. OWWSC is seeking proposals from interested firms to deploy their AI/ML powered Software-as-a-Service solution. Based on the firms' experience and references, OWWSC will select a single firm and enter negotiations with the goal of executing a SaaS-based contract for AI/ML risk assessment software and services.

SUMMARY OF SCOPE FOR WORK:

The software is required for the following reasons:
1. Produce a pipe rehabilitation program.
2. Make the investment more efficient i.e., we don't want to replace pipes that are in good condition.
3. Provide a solid justification to the regulator for the need to invest in replacing pipes.
4. Reduce the burst rate.

If the technology is successful, then it would improve the overall efficiency of the network and that will lead to reducing leakage on the pipes and reduce the NRW.

Requirements Specifications:

- Provide NWS with an AI-powered pipe condition assessment solution (expandable to include other assets in the future).
- Provide a user-interface to enable trained NWS employees to use AI within the software, as new and better information becomes available and get the latest Likelihood-of-Failure (LoF), Consequence-of-Failure, and Business-Risk-Exposure (BRE) updates.
- Provide a user-interface to enable trained NWS employees to update burst causing parameters (such as geometry data from GIS and new breaks) as new and better information becomes available.
- Provide recommendations for improving NWS GIS and burst data. In addition to the setup which may require GIS experts, the software should be able to provide recommendations on demand.
- Enable NWS to run scenarios based on different constraints or targets.
- Provide dynamic reports which enable NWS to demonstrate to the Board of Directors and APSR whether the existing investment is efficient to yield the expected improvements in service to customers.
- Demonstrable output that the existing investment is efficient.
- Reduction in the number of bursts
- Reduction in the real losses
- Reduction in the loss of supply to customers
- Improvement in water quality.

The vendor is encouraged to consider proposing a system that can be used to develop an investment plan for all utility assets.