24th Annual Information Technology Competition

Data Driven Roadway Repair
Written By: Timothy W. Den Ouden, Avanade

Background Information:

The City of Pittsburgh is undergoing the process of leveraging new technologies and practices from the private sector to more efficiently ensure the safety and wellbeing of its citizens. Due to budget cuts impacting its capacity, the city has not been able to keep up with the road repair and maintenance it has committed to its citizens. Because of this, the Department of Transportation has been overwhelmed with requests for road repairs by its citizens through the online submission system and is too understaffed to analyze its own captured data.

Problem Statement:

After a committee review, it has been established that the department is not correctly prioritizing its limited road repairs to maximize citizen safety, nor is it providing enough transparency and outreach to its citizens to inform them of in progress road repairs. An emergency fund has been allocated to analyze and develop the data and operations management system to solve these problems with its road repairs in a data driven way.

Due to the city-wide technology revitalization program, the data analytics team has been overwhelmed with prior commitments and is unable to provide any resources to complete this project themselves. An initial request for proposals has been issued for consulting firms to use a subset of provided city data toward creating an initial analysis and proof of concept before adopting the platform to manage all its data and reporting. Additional descriptions of the data will be provided in a separate document.

The City of Pittsburgh has also mandated that any new technology platform must protect its user's private information following the recently passed California Consumer Privacy Act (CCPA) legislation as a compliance guide.

Given its goals, how can the Department of Transportation leverage its data to prioritize its work and help its citizens? What is the projected impact of these repairs? How is this data surfaced to non-technical Officials and Contractors working for the Department of Transportation? To its citizens? How is this data best managed and stored? How can the proposed the Department of Transportation protect its citizens privacy?

Request for Proposals:

The Pittsburgh Department of Transportation is requesting project proposals from consulting teams skilled in data engineering, data analytics, machine learning, predictive analytics, and business intelligence visualization. The data analytics lead will review all proposals and rank the consulting teams based on the strength of their proposals and oral presentations/interviews.

The proposals should describe the ideas, strategies, and recommendations for how the Department of Transportation can increase the safety and transparency to its citizens, and how they might be implemented. The city is interested in ideas to reinvent the way it operates and communicates, this includes but is not limited to: online community web services / apps, in person citizen relations, education resources, etc.

It is recommended that each proposal submitted contain at a minimum the following sections:

Background Observations:

The consultants' interpretation and understanding of the Department of Transportation's problem (problem statement) and proposed assignment. Identify any special issues the consulting team believes the proposed assignment should address as well as any potential risks and impacts each potential risk would cause. Additionally, please identify and address all data concerns – missing, confounding, misleading, etc and how those problems may be avoided in the future.

Scope and Objectives:

What actions does the department need to take and what is the level of effort of those actions? What makes these actions more desirable?

Proposed Implementation Plan:

What is the proposed plan to act on your findings? What steps must be taken first to begin the plan? Are there any steps/actions that require the participation of the citizens of the City of Pittsburgh? A high-level outline of the implementation plan steps (not too much detail) must be completed to allow the Department of Transportation personnel and the consultants to work together to achieve the identified end results.

Proposed Consulting Team:

Present the consultants to be assigned, identify their roles in the project and provide information on their past experiences as it relates to completing the consulting assignment.

Benefits to City:

What benefits will the City of Pittsburgh receive and how will the value of a data driven platform be demonstrated to justify the fee spent on these initial data insights? Will these benefits continue when requesting a budget for the proposed full version of the data platform?

Oral Presentation and Interview:

The Pittsburgh Budgetary Committee members, and Data Analytics lead for the Department of Transportation have expressed a desire to sit in on the oral presentations. As these individuals are already very busy, the consulting teams will be given 20 minutes to deliver their presentations. This presentation will be followed by 10 minutes of questions from the stakeholders directed at the consulting team. For the Consultant Selection Committee to properly understand and evaluate your proposal and team, it will be very important for the entire presentation to be complete within 20 minutes, and each member must contribute in the oral presentation / interview.

Submission of Proposals:

It is the policy of the Department of Transportation to accept proposals in the electronic form only (Adobe Acrobat .pdf format). Consulting teams are responsible for ensuring their RFIs are received by the City of Pittsburgh Consultant Selection Committee by the date and time indicated below. Completed RFIs shall be submitted through the provided Google Form and consulting teams will receive an email confirming successful receipt by the Consultant Selection Committee.

Important Dates:

Prospective consulting teams should be aware of the following important dates. Failure to complete submissions or attendance at these dates will result in disqualification from being considered for final ranking:

- April 5, 2020 by 11:59 PM PST– PDF of proposal submitted through Google Form
- April 10, 2020 by 5:00 PM PST – Presentation slides submitted through Google Form

- April 11, 2020 Oral Presentation

The Department of Transportation members are looking forward to receiving your proposals and attending your oral presentation and interview.