

The background of the slide is a nighttime aerial photograph of a complex multi-lane highway interchange. The roads are dark grey asphalt, and the surrounding urban environment is visible with buildings and other infrastructure. The lighting from the city creates a grid-like pattern of highlights and shadows.

01

Data Driven Roadway Repair

Pittsburgh Proposal

The Dream Team

01

02 Meet the Dream Team

From California State Polytechnic University, Pomona



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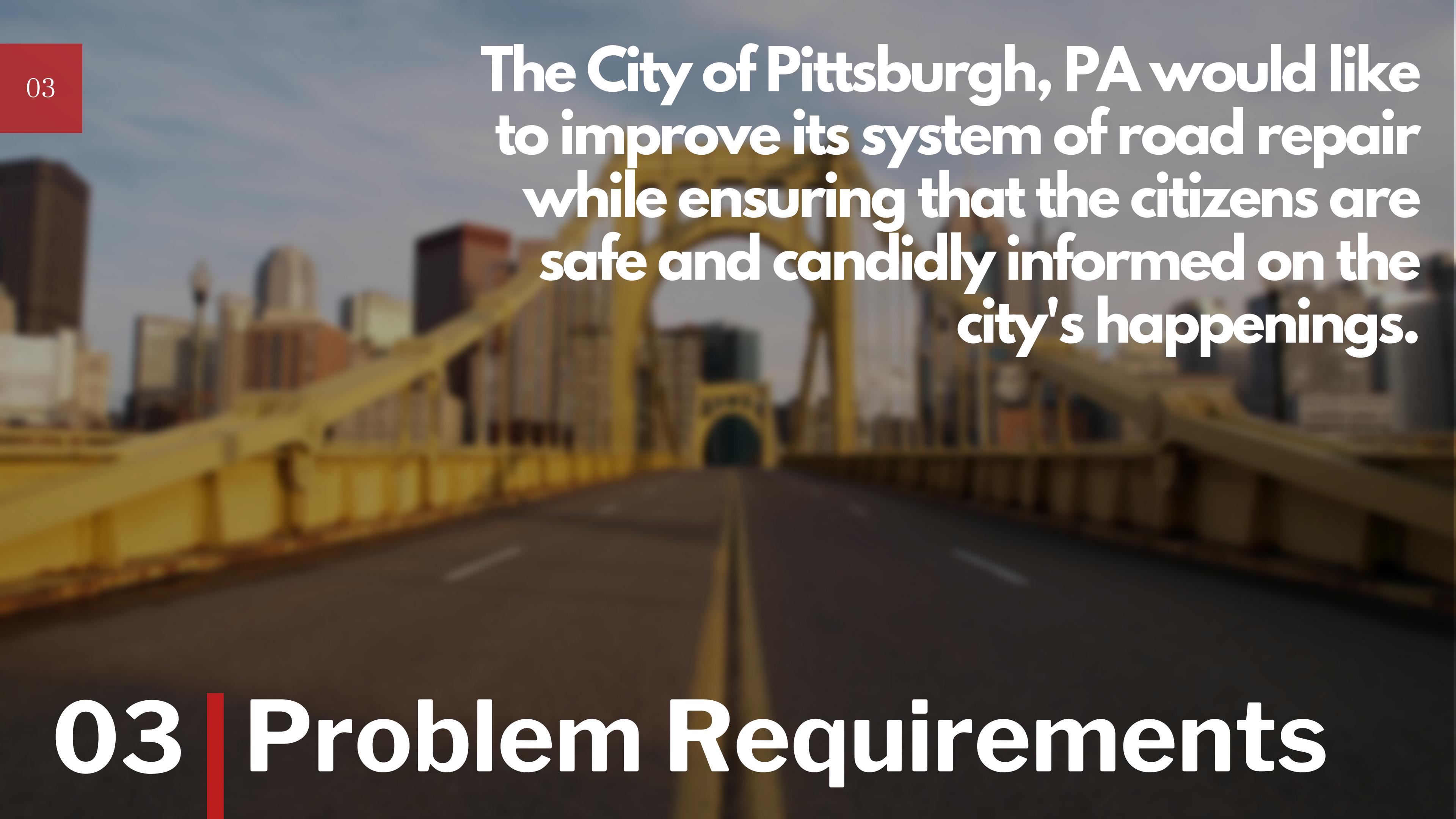
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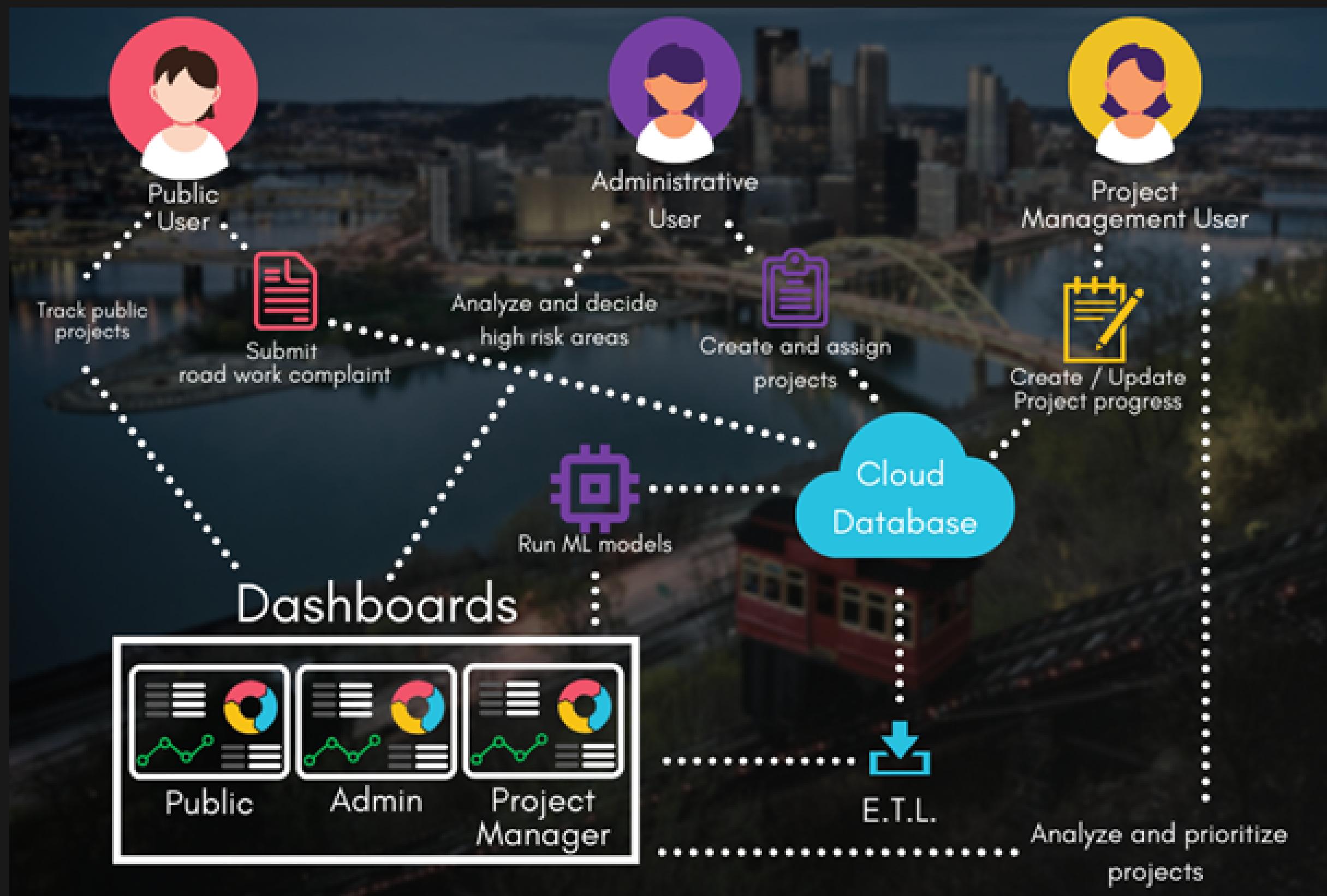


The City of Pittsburgh, PA would like to improve its system of road repair while ensuring that the citizens are safe and candidly informed on the city's happenings.

03 | Problem Requirements

04

Our Solution



Improved Submission System

Problem



Solution

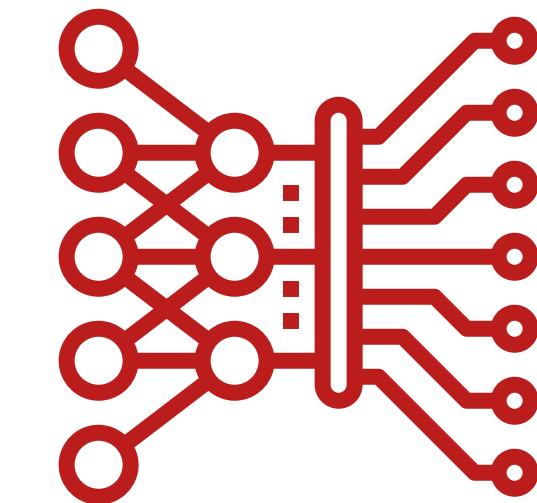
- Current system is inefficient
- Limited resources and employees; imbalance of incoming data and data analysts
- Inability to prioritize repairs & complete repairs
- Lack of resources to analyze text submission

- New submission system
 - Anonymous web form
 - Multiple choice
 - Drop down menus
- Limited responses for easier analysis
- Integration of TF-IDF
(Term Frequency Inverse Document Frequency)



MACHINE LEARNING

The city has no method to determine which streets are at high risk of serious accidents.

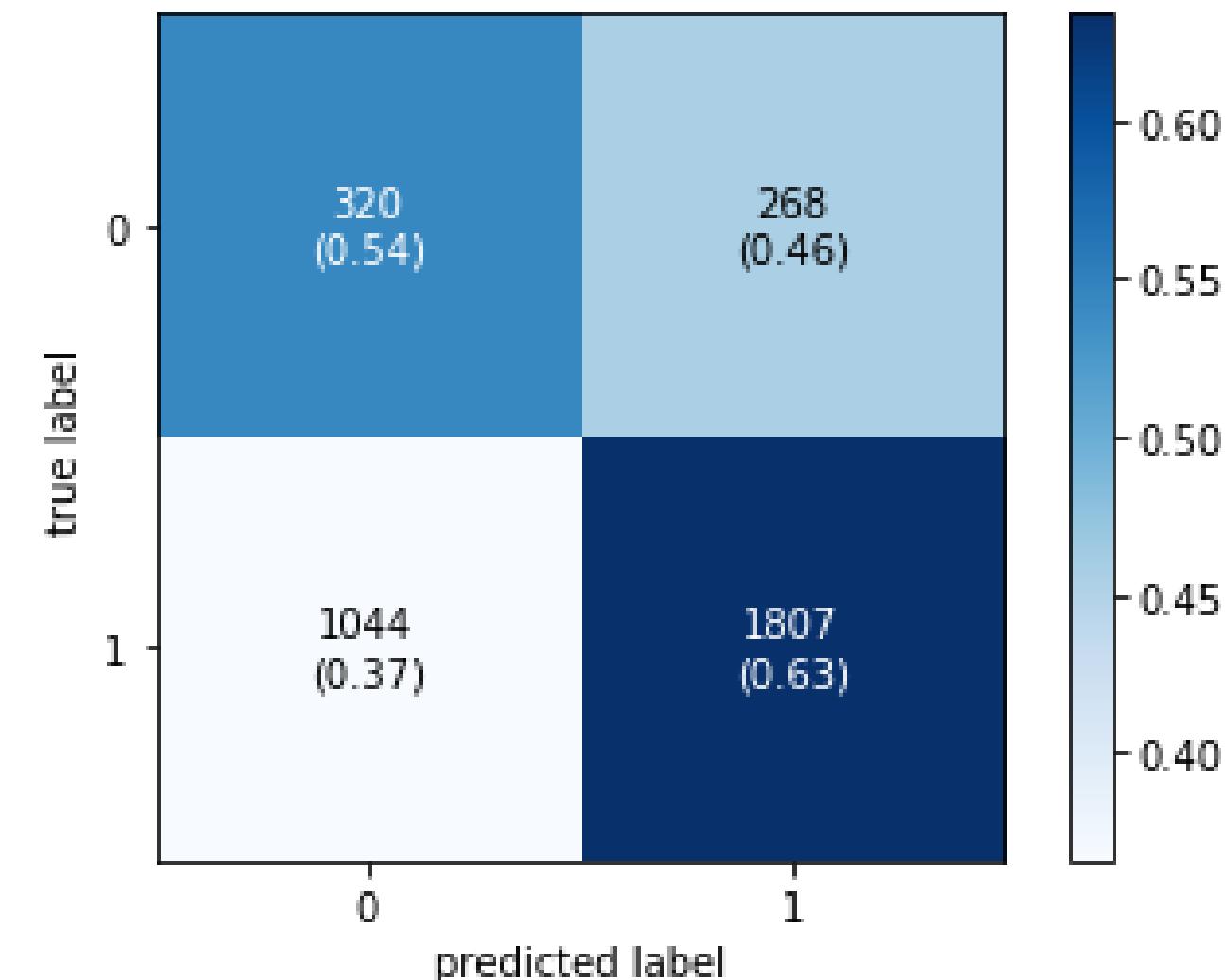


OPTIONS:

- Clustering
- Logistic Regression
- Decision Trees
- Naïve Bayes
- Neural Network

SOLUTION CHOSEN:

Logistic Regression





LIVE DATA DASHBOARDS USING TABLEAU EMBEDDED ONLINE

Real-time dashboard consisting of

- High complaint area heat map
- Schedule of upcoming repairs
- User friendly image information

LEVELS OF ACCESS

Different dashboards available for

- General Public
- Public/Private Contractors
- City Officials
- Project Managers

07

CCPA and Future Mismanagement

- Prevent mismanagement of data and operations.
- protect user's private information.
- Strict guidelines and testing should be adopted for any past and future technology projects
- CCPA will be applied as a guide to practice best security practices.
- Good will with Public.



ELECTRONIC COMMUNICATIONS



EMAILS & NEWSLETTERS

Monthly online newsletter regarding current and future road projects



GRAPHS & INFOGRAPHICS

weekly, monthly, and yearly comparisons of city data



SOCIAL MEDIA

Social media to engage with and inform the public

A marketer walks into a coffee shop

Dashboard Demo











Cost

- low cost
- AWS costs for secure databases is \$3,000-\$6,000 per month
- dashboard through Tableau costs \$70 per month per user/license.

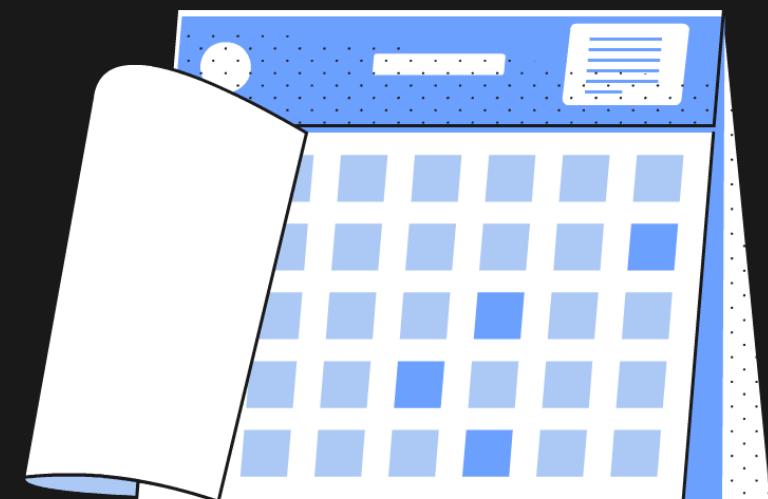


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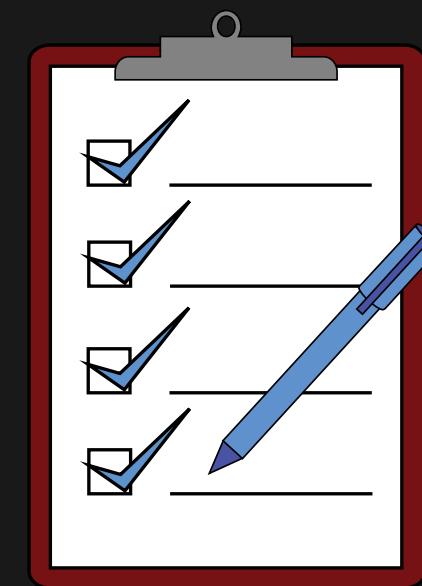
Project Management

Schedules

- Project is estimated to take about 6 weeks from planning to implementation

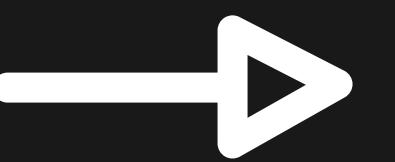


Scope



- Information recorded and analyzed from the submission system will be sent to the data dashboard with little additional information

Risk



Consequence

- Technological Issues i.e. website crash, incorrect analysis
- Users private information may be disclosed
- System may result in need for more manpower
- Communication may be seen as informal or unprofessional

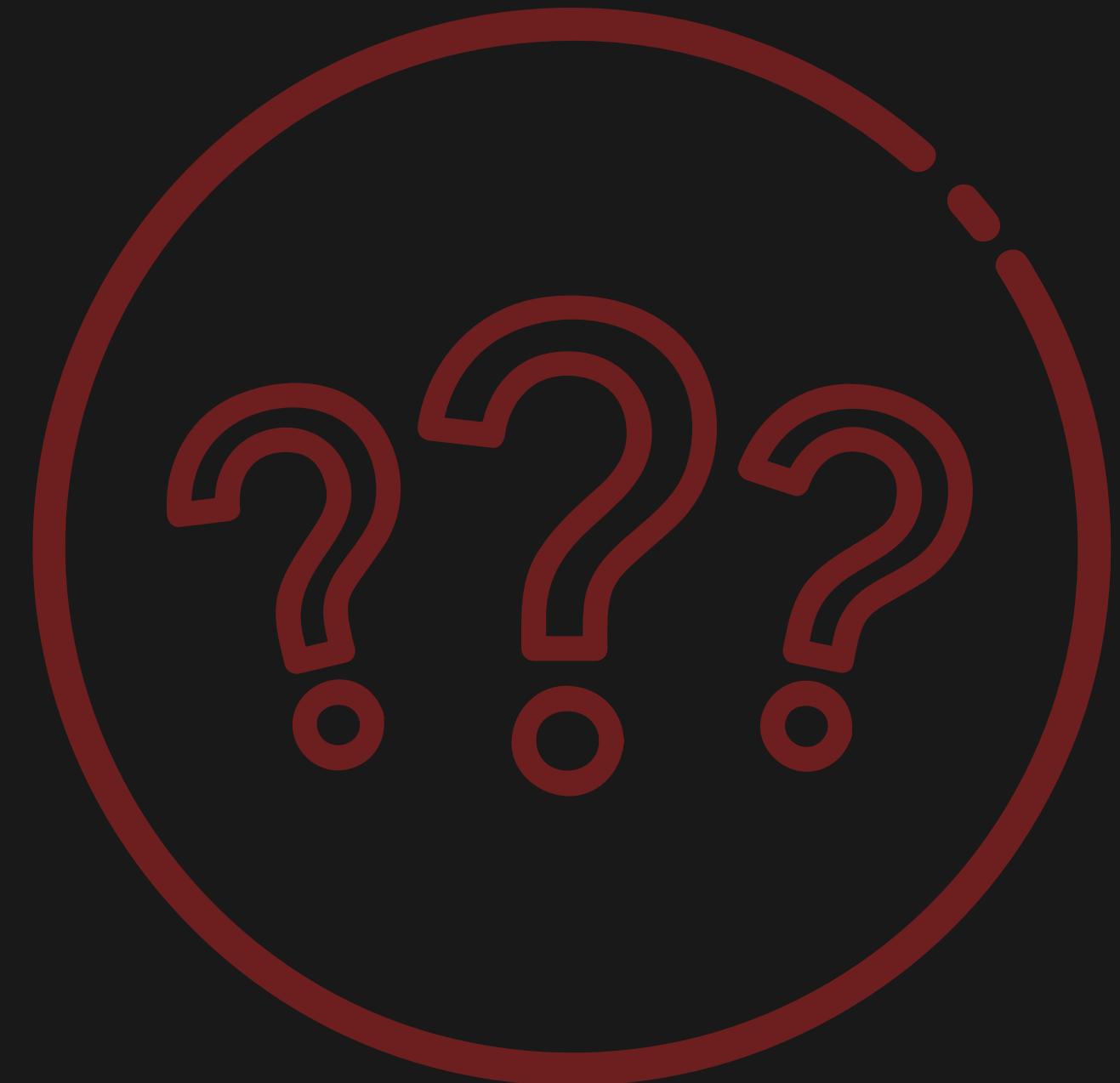
- Users will not be receiving up to date information

- Trouble with CCPA

- Sets the city back further than where it started

- Leads to distrust of the cities authority





QUESTIONS?