MnDOT Traffic Camera Maximizer

Project Location:

Systemwide

Start – Finish Date:

October 2018 – December 2019

Project Status:

Complete

Project Partners:

Castle Rock Associates

MnDOT Project Cost:

$161,000

Projects with Similar Characteristics:

Automated Waze Imports

Project Description:

This project involved the implementation of a Traffic Camera Maximizer (TCM). The Traffic Camera Maximizer was proposed to broaden the reach of the following MnDOT assets to improve situational awareness of driving conditions across the state:

- 511 public website
- Traffic public website
- Road Weather Information System (RWIS) cameras

To achieve the goals, the project was split into two portions. The first task was to improve the usability of the public 511 website for both desktop and mobile devices. The second task involved highlighting traffic and RWIS cameras within the 511 platform where slowdowns or inclement weather could be automatically detected, and the calculated delay would be displayed on 511. This could improve quality of real-time information.

Project Objective:

The project objective was to improve situational awareness for drivers by broadening the reach of 511, traffic cameras, and RWIS cameras.
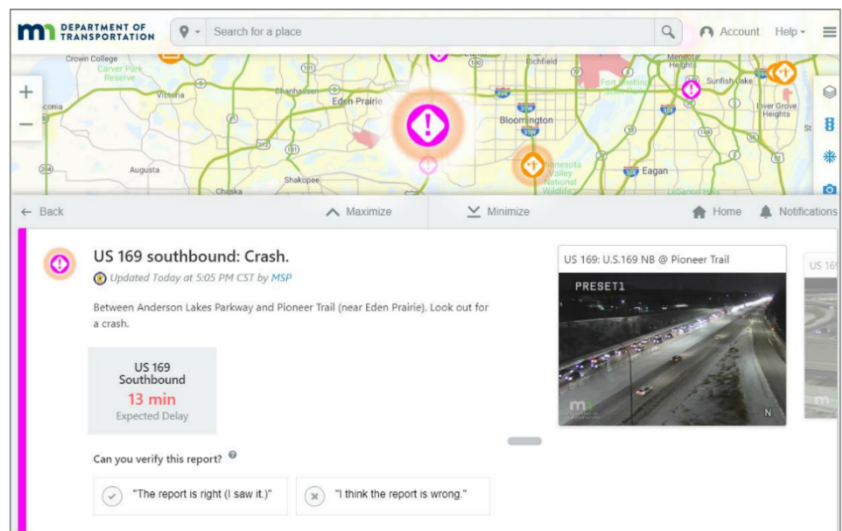

Figure 1: Image of 511 highlighting an incident and displaying the calculated delay.

Project Accomplishments:

- Updating the user interface for the 511 website to better display information on desktops and mobile devise.
- Increasing the quality of real-time information by adding functionality to the back-end system to identify events, calculate delays, and present the information to 511 users.
- Increasing usage of 511 from the public.

Key Findings:

511 Website

To get a better grasp on how users access the 511 website, user access data was compared over three years which showed a consistent increase in mobile app/tablet user access. Mobile app/tablet users exceeded the number of desktop users. This helped provide a direction for what updates needed to be made to create a responsive design website regardless of access type.

Google Maps API Cost

Third-party vendors like Google Maps could modify or eliminate API features with little to no notice to their vendors. A change from Google during the project resulted in a potential increase in costs if all cameras were included in the system updates for highlighting traffic or weather events. This required the project team to determine a limited set of cameras that would display the updated information on 511.

Lessons Learned:

- Third-party API vendor updates will likely continue to impact the level of functionality to department-owned public websites.
- The updated user interface for desktops and mobile devices has improved the user experience, which encourages continued use of the interface for travel information.

Potential Next Steps for MnDOT:

- Evaluate applicability of pilot and results to current system and operations.
- Perform a correlation study between the results of this effort, and the Automated Waze Imports effort.

Date Updated: 2024-11-20