Traffic in the US is becoming more and more costly, with a 2014 study showing that traffic cost US drivers a total of 7 billion hours and $160 billion in that year alone. One way to approach this problem is to improve traffic incident management systems which are often outdated and lack coordination. We focused on the Iowa Department of Transportation’s Traffic Management Center (TMC), where Traffic Incident Managers (TIMs) currently use over 15 different software applications.

First, our project investigated the current usage of the 15+ user interfaces that TIMs use.

Between the old and the new prototype, the total number of possible steps needed to handle a typical incident has been reduced by 55%. Per incident, the time estimate has been reduced by nearly 9 minutes, a 52% reduction.

Next, we utilized rapid prototyping to create wireframes of the UI and 7 prototype iterations.

Finally, we conducted a test for our prototype with a Traffic Incident Manager.

This prototype will continue to be modified and developed, and machine learning will advance with the software. A full-scale study will be conducted which evaluates the effectiveness of the new user interface. The next test will include measuring the number of clicks, screens, time taken for each state event, and overall time taken to manage an incident. The think-aloud method will also be used to further understand the thought process of traffic incident managers to better address their needs.