

Streamlined All-In-One TSMO Solution



By Oklahoma Department of Transportation

11/8/2024

Benefits Statement

The Comprehensive TSMO Integration Plan streamlines Oklahoma's transportation by consolidating apps, websites, and data. This improves safety with real-time traveler updates on road conditions, incidents, and weather, allowing safer decisions. Time is saved through efficient resource management, real-time monitoring of traffic and weather, and updates on construction or special events. Cost savings are achieved by optimizing snowplow and maintenance operations, reducing delays, and minimizing the economic impact of traffic incidents. This integration enhances safety, efficiency, and cost-effectiveness in the state's transportation network.

In this case study you will learn:

1. How Oklahoma DOT used real-time traveler information, road weather management, and incident monitoring to improve roadway safety and reduce accidents.
2. How technology integration streamlined snowplow management, maintenance, and incident response, leading to cost savings and better resource allocation for transportation agencies.
3. How Oklahoma DOT consolidated various apps and data sources to simplify access to information, reduce delays, and provide a seamless experience for travelers.

BACKGROUND

Transportation Systems Management and Operations (TSMO) plays a crucial role in Oklahoma's transportation network. The Comprehensive TSMO Integration Plan aims to streamline and optimize transportation management and operations across Oklahoma by integrating various mobile apps, websites, and data sources into one cohesive platform. By consolidating disparate elements of TSMO, we seek to provide travelers with a seamless experience and empower transportation agencies with actionable insights to improve efficiency, safety, and reliability.

TSMO PLANNING, STRATEGIES AND DEPLOYMENT

Our plan commenced with a thorough assessment of the information and data we had already been gathering and analyzing, as well as identifying any gaps in our knowledge. By obtaining a comprehensive overview of our existing systems, it paved the way for the direction we needed to pursue. Ultimately, this assessment led us to pinpoint four key areas for advancement.

Real-time Traveler Information:

- Utilization of Oktraffic.org and the Drive Oklahoma App (developed and deployed mobile app) as primary platforms for relaying real-time information to travelers, ensuring they stay informed about current road conditions and incidents.

Technology Integration for Enhanced Operations:

- Implementation of Samsara for snowplow route management, including the capture of images, video, and data, ensures efficient snow and ice operations, contributing to enhanced roadway safety during adverse weather conditions.
- Utilization of the Construction App (developed and deployed mobile app) enables

us to map out ongoing projects across the state, ensuring that construction-related information is readily available to the public through the Oktraffic platform.

- Integration of NOAA, Waze, and probe data promoting real time monitoring and analysis of traffic conditions, incidents, and weather events.

Road Weather Management:

- Implementation of advanced road weather management capabilities to monitor weather conditions in real-time and proactively address potential hazards such as flooding and tornadic events.
- Ability to post messages and map updates promptly, providing travelers with essential information during weather-related emergencies for timely assistance.
- Implementation of Samsara data, displaying the snowplow locations and current road conditions on OkRoads.org and the Drive Oklahoma App.

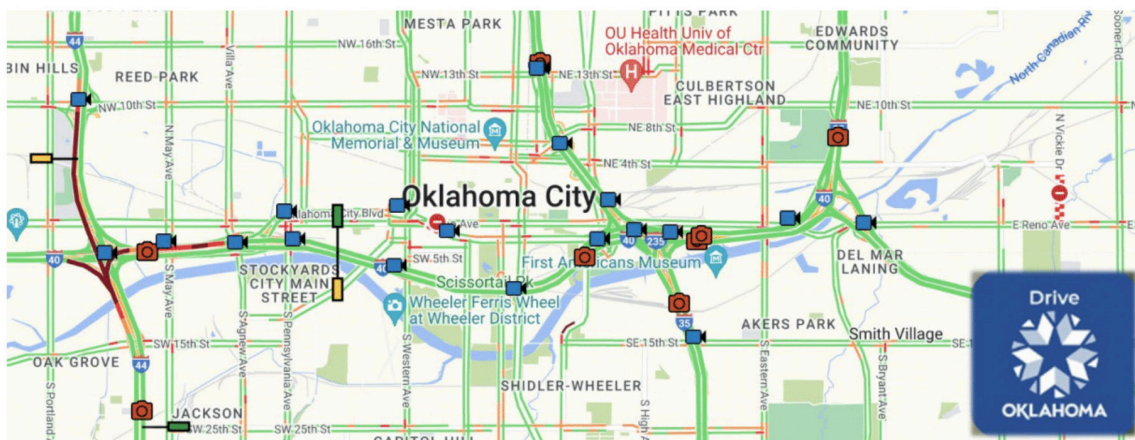
Special Event Management:

- Deployment of the Pi-Lit system facilitates real-time posting of maintenance operations on the map, allowing the public to stay informed about ongoing maintenance activities and potential impacts on their travel routes.
- Display of special events on the map through Oktraffic, enabling travelers to plan their routes accordingly and mitigate potential traffic disruptions.

COMMUNICATIONS PLANNING AND EXECUTION

To execute our plan effectively, several key steps were necessary.

1. Engaging with stakeholders, including our agency, Oklahoma University, software developers, technology providers, emergency responders, and the public, was a crucial step in the execution of the plan.
2. The integration of technology required coordination with technology vendors, our software developers, and data providers to ensure compatibility, interoperability, and data accuracy.
3. Providing training for transportation personnel and stakeholders. This involved educating users on how to use the integrated platform, interpret real-time data, and respond effectively to transportation incidents and emergencies.
4. Continuous monitoring and evaluating the effectiveness of our initiatives. This involved collecting and analyzing data on key performance indicators such as travel times, incident response times, and safety outcomes to assess the impact of the plan and identify areas for improvement.
5. Continuous improvements, adjustments and refinements to the platform and plan to optimize its effectiveness. This iterative process of continuous improvement ensures that the transportation system remains responsive to evolving needs and challenges. While we've accomplished numerous tasks in pursuit of our objectives, we remain committed to further enhancing our systems. Presently, our team is engaged in the integration of real-time incident data sourced from our partners at the Department of Public Safety (DPS) along with INRIX Help Alerts. This integration aims to utilize the Emergency Alert System (EAS) to promptly inform travelers of noteworthy road closures lasting an hour or longer.



OKTRAFFIC.ORG and the DRIVE OKLAHOMA MOBILE APP

OUTCOME, BENEFITS AND LEARNINGS

Through this implementation, Oklahoma has learned several valuable lessons. One of these is that consolidating disparate systems leads to greater efficiency, improved data accuracy, and an enhanced overall experience for travelers. Another being that effective communication is essential. Utilizing various communication channels, such as push notifications and dynamic message signs, helps keep travelers informed and enhances their overall experience.

Lastly, continuous improvement is necessary. Transportation management is an ongoing process that requires continuous monitoring, evaluation, and adjustment. Oklahoma realized the importance of gathering feedback from users, evaluating the effectiveness of our initiatives, and making improvements as needed to optimize the transportation system.

Additionally, we have observed numerous benefits:

Enhanced Safety: Real-time information on road conditions, incidents, and weather events allows travelers to make informed decisions, reducing the risk of accidents and improving overall safety.

Improved Efficiency: Integration of TSMO tools and data sources streamlines transportation management operations, resulting in more efficient resource allocation and reduced travel times for motorists.

Enhanced Traveler Experience: By providing accurate and timely information, travelers can plan their routes more effectively, minimizing delays and disruptions.

Cost Savings: Optimized snowplow route management and maintenance operations lead to cost savings for transportation agencies, while improved incident management reduces the economic impact of traffic incidents on the state's economy.

Streamlined User Experience: By consolidating multiple mobile apps and websites into a single platform, we have simplified the user experience for travelers, providing easy access to comprehensive information and resources.