TRANSCONOMY
TRANSPORTATION MEETS INNOVATION

RICHLAND COUNTY
REGIONAL PLANNING

Richland County Regional Planning Association Pavement Assessment/Inventory Survey and Safety Project

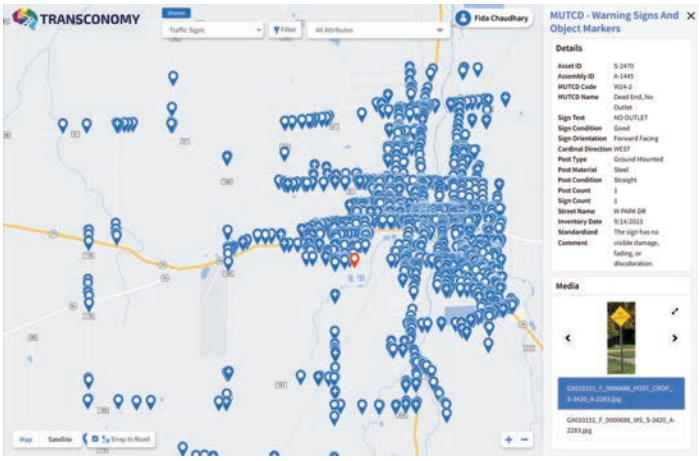
In response to Richland County Regional Planning Commission's (RCRPC) initiative, this project consisted of a pavement condition survey as well as an advanced asset management survey for the member Townships and Municipalities within Richland County, Ohio.

The scope encompasses a pavement condition survey for over 2200 lane-miles and an asset inventory and condition survey for more than 2800 lane-miles. The asset condition survey consisted of sidewalks, traffic signs, pavement markings, and line striping. The project scope included rural, suburban, and urban areas.

The project unfolded across several phases. Our project management approach involved constant and consistent communication through a kickoff and bi-weekly project status meetings. This project leveraged Transconomy's entire ecosystem for data collection, data processing and data visualization. Data collection consisted of Transconomy personnel driving the entire system capturing right-of-way imagery using our Transconomy Collector application supplemented by other high-resolution cameras. The Collector application is Transconomy's proprietary software/application that can be installed on an iPhone or Android phone and used to collect imagery that is automatically synced to our cloud (called the Transconomy Hub) for immediate access by our artificial intelligence (AI) team. The imagery was then processed using our in-house AI models which produced a pavement condition score based on the University of Wisconsin PASER rating system. AI models were also used to locate, detect, and rate sidewalks, traffic signs, pavement markings and line striping.

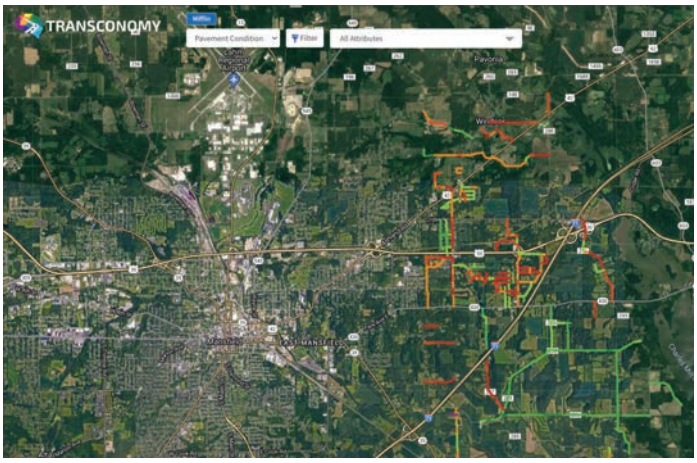
The data were then QC'd by personnel to make sure that the AI captured the asset presence, location, and condition accurately (also called human-in-the-loop quality management in AI terminology).

After processing, the outputs were displayed in Transconomy's custom GIS Viewer system which displays the GPS location, contains an image of the asset, and provides condition information. This tool also contains analytical and filtering capabilities so the RCRPC can view and analyze their data in many different ways. Data is summarized in a dashboard format so information can be presented in an easy-to-comprehend manner for RCRPC stakeholders.



Results: The processed pavement evaluation and asset inventories are presented in the web-based Transconomy Viewer for dynamic visualization, and Geodatabase formats for flexible use by RCRPC.

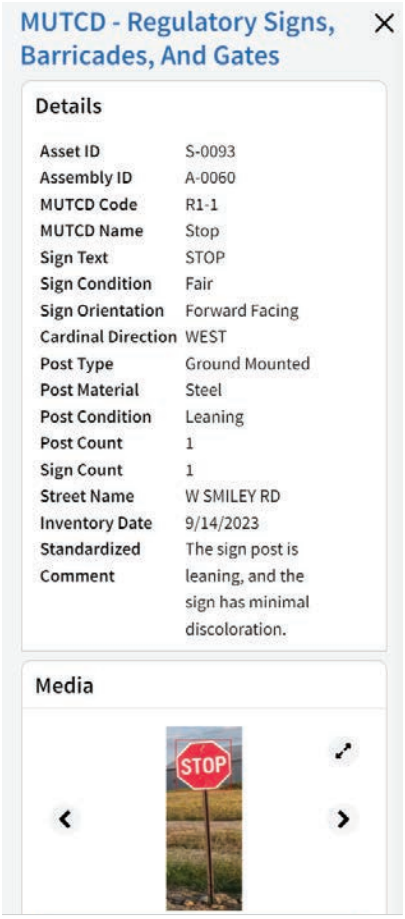
In this project, 19 townships and urban areas were surveyed over 15 person-days, 2200 lane-miles were evaluated for pavement condition across more than 3,800 roads. 100,000 signs, 2800 miles of pavement markings, 1000 lane-miles of pavement striping and 700 miles of sidewalks were detected, classified, and condition rated. Within the Viewer, users can filter to a specific asset type or condition, identified with a corresponding image that shows the pavement/asset in a contextual manner. RCRPC staff and their stakeholders can perform a virtual “drive-through” of the roadways with the ability to review inventory and condition information.



Benefits: The project delivered pavement and asset data that can be used by RCRPC to develop work plans to enhance the safety of the Richland County community.

The gathered data not only aids RCRPC in quantifying and tracking pavement performance but also facilitates proactive planning for future infrastructure needs. It enables the formulation of targeted work plans, ensuring that sidewalks, pavement markings, line striping, and traffic signs are maintained in a state-of-good repair. This comprehensive approach enhances the safety of the public road network system and aligns seamlessly with the Region's Vision Zero goals, actively contributing to a safer transportation environment and infrastructure for the community of Richland County.

For the RCRPC, the ability to view the comprehensive pavement assessment and asset inventory across the full MPO as well as drill down to individual member agencies empowers near term decision-making and longer-term planning based on accurate, standards-based data. GIS based data makes cross-asset decision making and comparison simpler with an ability to overlay potential programs in mapping programs. From Viewer, RCRPC is able to access data and images to inform reports and presentations for stakeholders, providing clarity for discussions.



The innovative approach to data collection and AI based processing reduced the required time to complete all phases of the project, providing actionable data in a fraction of the time than was previously possible. The approach to the project eliminated the reliance on evaluation teams being present in the field saving time, resources, and enhancing the safety of the teams and the traveling public.

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