



TRANSCONOMY
TRANSPORTATION MEETS INNOVATION



THE CITY OF
BOWIE, MARYLAND

Pavement Evaluation / Complete Linear and Point Asset Inventory for the City of Bowie, Maryland

Scope: Transconomy, as a division of iENGINEERING, has executed multiple projects for the City of Bowie to deliver a roadway asset inventory and pavement evaluation. Each project was comprised of three main tasks:



Data Collection

The initial task involved the collection of right-of-way roadway images across desired streets and routes in Bowie. Transconomy established collection areas using the Transconomy Manager application, and Transconomy staff captured roadway images at 25-foot intervals utilizing the Collector app on a smartphone, mounted on the vehicle's dashboard.



Data Analysis

Once the images were collected, the app synced the images to Transconomy Hub. Here, the images were processed, and Artificial Intelligence (AI) models were applied. These models included a PASER based pavement condition assessment as well as traffic signs, and other point and linear assets such as sidewalks and drainage inlets, to name a few.



Data Delivery

Transconomy applies a human in the loop (HITL) stratified Quality Control process in which Transconomy's team validated the data. The inventory and condition data was delivered to the city in Transconomy's Viewer application, allowing web-based access to a visualization of summary and detailed data, and in an ESRI shape file geodatabase imported into their city's GIS system.

Testimonial

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Transconomy performed a complete inventory of our street network including pavement condition and all assets in the right of way. Their commitment to quality and on time delivery was impressive and we are currently using this information to make data-driven decisions that will positively impact the citizens in our community.

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Jose Aldayuz, Public Works Director, City of Bowie, Maryland

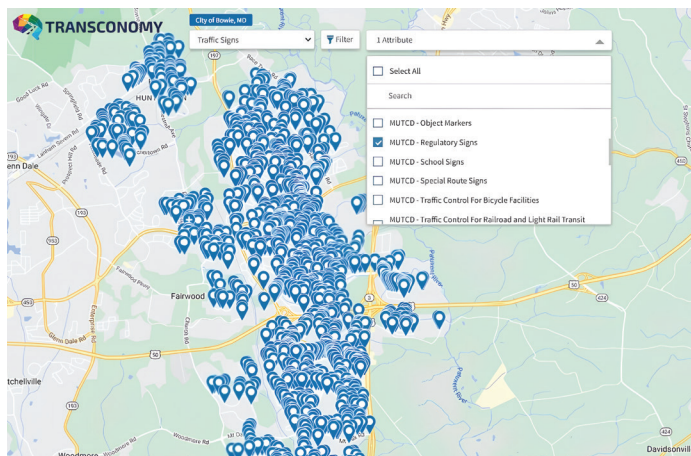
Results: The results were a pavement condition assessment and an asset inventory delivered to the City of Bowie, aligned to the city's provided linear referencing system.

The Pavement Condition Rating (PCR) assessment for the city utilized a customized ranking scale provided by the city. Each road in the network was assigned a rating based on this scale. The analysis covered a total of 1104 segments spanning over 400 lane-miles. Overall, more than 7,100 signs, 22,000-point assets and 433 miles of linear features were inventoried for the City of Bowie. The right-of-way asset inventory includes:

City of Bowie Assets Delivered

- Pavement Condition Ranking
- Fire Hydrants
- Curb and Gutter
- Shoulder
- Vegetation Median
- Traffic Signs
- Culverts
- Pipe Guardrail
- Sidewalk
- Wooden Guardrail
- Manholes
- ADA Ramps
- Raised Medians
- Standard Guardrail
- Others

Benefits: The current and detailed pavement condition rating and right of way asset inventory are readily accessible to the City of Bowie through the Transconomy Viewer and the delivered geodatabase.



The spatial referencing of the data to the city's roadway network empowers Bowie to conduct both high-level overviews and detailed reviews based on location, asset type, or condition. This analysis facilitates a nuanced understanding of the infrastructure landscape, enabling the city to fine-tune maintenance and operations plans, pinpoint potential risks, optimize allocation of funding and resources, and formulate long-term planning strategies. Transconomy's low-cost, high-quality solution enabled the City of Bowie to provide an actionable pavement paving plan for the next fiscal year in a fraction of the previously planned time.

An additional advantage of partnering with Transconomy and conducting annual surveys has been the City's improved understanding of its pavement conditions. This progress led to the City transitioning from a 1-to-5 rating scale to the PASER system after a successful pilot study. The PASER system offers a more sustainable, objective, and repeatable method for assessing pavement conditions while delivering more detailed data to support effective management and treatment planning.



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