



# Leverage AI for Roadway Asset Extraction

Automated extraction of transportation assets from roadway images using Artificial Intelligence (AI) provides a “paradigm shift” in infrastructure asset identification that can be integrated with existing data collection and management solutions.

Transconomy provides cutting-edge tools to State and Local transportation agencies for collecting roadway images and automatically extracting assets to create GIS-based inventories of transportation infrastructure using Artificial Intelligence (AI). Transconomy identifies assets such as traffic control devices (e.g., traffic signs, signals, etc.) based on Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways. It also extracts critical facilities and infrastructure such as safety appurtenances (e.g., guardrails, barriers, fire hydrants, etc.), and other ancillary structures (e.g., object markers, utility and transmission posts and lines, parking meters, etc.) meeting Model Inventory of Roadway Elements (MIRE) specifications recommended by Federal Highway Administration (FHWA).

## Problems We Solve

Transconomy offers roadway asset inventories that are essential to solve critical transportation problems. The following demonstrate a few use cases of the Transconomy asset inventories.

## Asset Inventory

Street and highway agencies can use GIS-based asset inventories to conduct an evaluation based on the condition of assets and the adequacy of the asset locations according to various safety, mobility, and other design requirements to implement a Transportation Asset Management (TAM) process.

## Safety Management

Safety studies to determine whether a traffic sign is provided at a sufficient distance ahead to allow adequate driver response time or evaluate whether adequate protection is being provided based on the beginning and end of guardrails can be conducted based on the FHWA Highway Safety Manual (HSM).

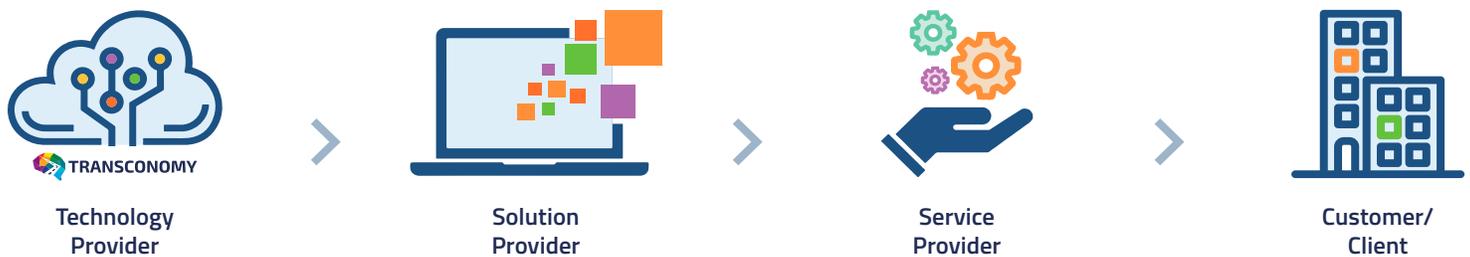
## Maintenance Support

Whether Agencies need to conduct routine maintenance or preventive maintenance of their highways and road networks, Transconomy can detect road surface defects such as potholes, patching, etc. for achieving and sustaining a desired state of good repair of highway facilities.

## Transconomy Adds Value

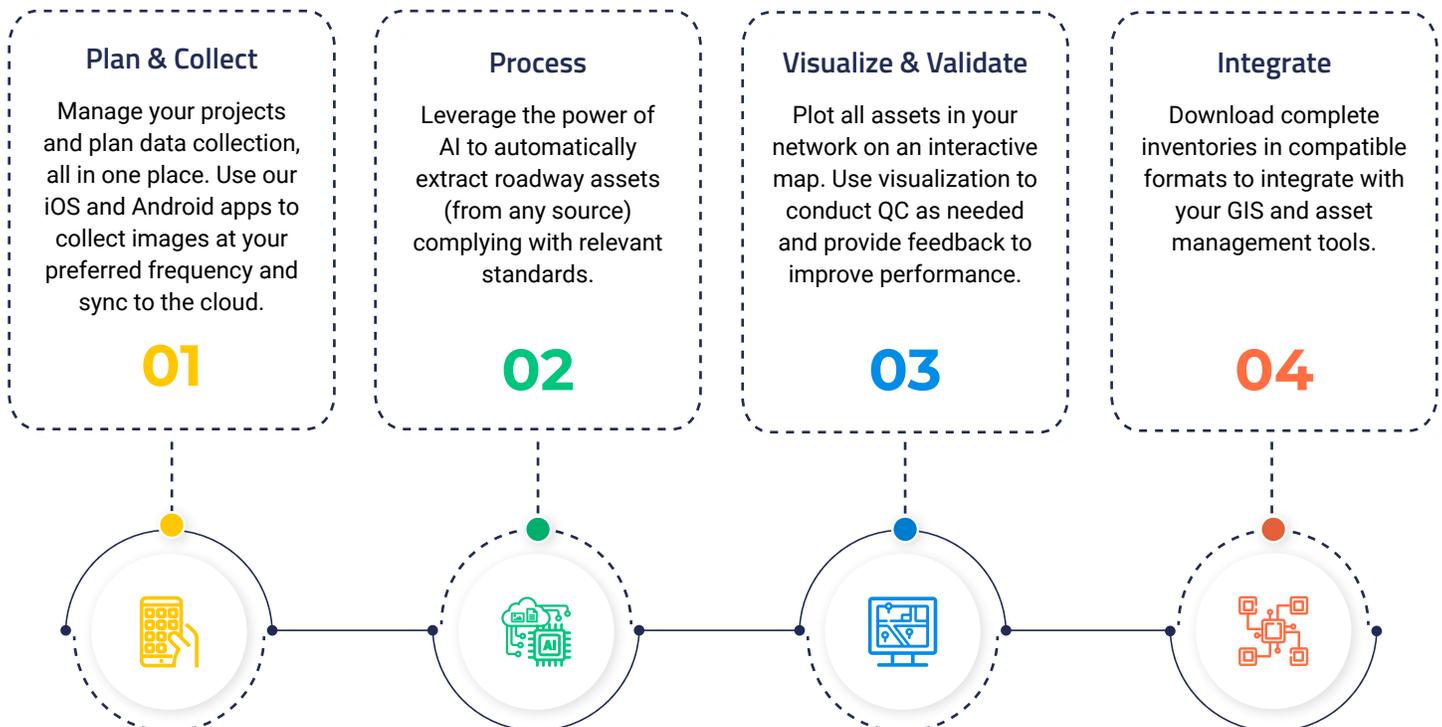
Being the technology specialist, Transconomy positions itself as a technology provider that aims to function as a value-add for existing solution and service providers that in turn provide services to their customers. We collaborate with such service providers or agencies to identify areas where Transconomy can integrate its technology so that agencies can save processing time and cost while delivering their projects. These strategic partnerships allow Transconomy

to equip agencies with innovative solutions to go beyond any limitations in their project deliverables. Transconomy offers baseline AI-based products to agencies that can be used to quickly deliver accurate asset inventories but also offers customized technology based on specific requirements. Whether it is data collection, processing, or visualization to effectively deliver up-to-date infrastructure data, Transconomy has the technology to enhance your services.



## The Transconomy Workflow

Transconomy offers a seamless process to create and use roadway asset inventories. It simplifies the asset inventory process and offers a complete solution to plan, collect, process, visualize, validate, and integrate roadway asset inventories into existing GIS and asset management systems.



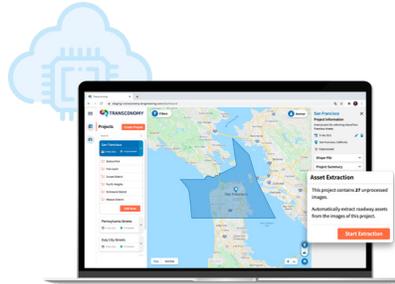
## The Transconomy Ecosystem

Transconomy ecosystem provides connected tools that streamline the asset inventory process. These tools work in harmony to provide innovative and cost-effective ways to perform data collection, data processing, and processed data delivery.



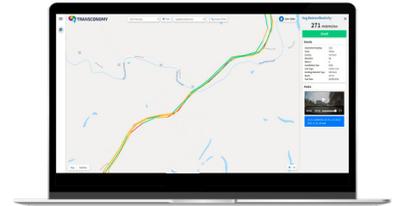
### Collector

A mobile app to collect and upload geocoded roadway images on the go



### Manager

Manage your transportation networks and extract roadway assets using AI



### Viewer

Provide color-coded visualizations for point and segment data on interactive maps

## Success Story

Transconomy and Kimley-Horn joined forces to create a traffic sign inventory and condition database for the City of Lone Tree, Colorado. Kimley-Horn was also tasked with performing condition assessments on a 1 to 4 scale for over 4,000 traffic signs within the City's boundary. Staff at Kimley-Horn collected about 100 lane-miles of street imagery using a GoPro camera. Nearly 50,000 Images were then uploaded to the cloud (Transconomy Hub), where the Transconomy AI algorithms were executed. These raw images were automatically processed to identify assets, remove duplicate assets in consecutive images, and geo-tag asset locations on a map. Shapefiles (SHP), Keyhole Markup Language (KML) files, and Comma-Separated Value (CSV) files were delivered. Overall, the City was pleased with the results, citing the project team was

**"Responsive to the needs, concerns, and wishes of the Lone Tree community, including our internal stakeholders. The firm's skilled and dedicated professionals have provided exceptional service to the city."**

**- City of Lone Tree, CO**



## Transconomy

📍 24805 Pinebrook Road, Suite 204, Chantilly, Virginia 20152

🌐 [www.transconomy.com](http://www.transconomy.com) ✉ [info@transconomy.com](mailto:info@transconomy.com) ☎ (703) 722-2980

Transconomy is a trademark of iENGINEERING Corporation. All other trademarks are the property of their respective owners.  
Copyright © 2019 - 2021 Transconomy. All rights reserved.