



EchoTwin AI

Transforming **smart cities**  
into cognitive, **self-healing**  
cities

## MISSION

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# EchoTwin AI



Transform municipal fleets into mobile urban sensors that provide real-time insights into infrastructure, compliance, and safety



Advance the era of cognitive municipalities with awareness to **see, think, and act on challenges** in real time



Build resilient, self-healing, and sustainable urban ecosystems by enabling public sector agencies to proactively monitor, predict, and resolve issues

# HOW IT WORKS

## 1: SEE

Real-Time Object  
Detection



## 2: THINK

Real-Time Object  
Classification &  
Vision Language  
Model (VLM) Pipeline



## 3: ACT

VLM Pipeline & Work  
Order Begins



## 4: VERIFY

VLM Pipeline & Work  
Order Begins



## CHANGE AND ANOMALY DETECTION USE CASES

*Use cases for EchoTwin's change and anomaly detection technology are endless*

### WASTE



### ROAD HAZARD



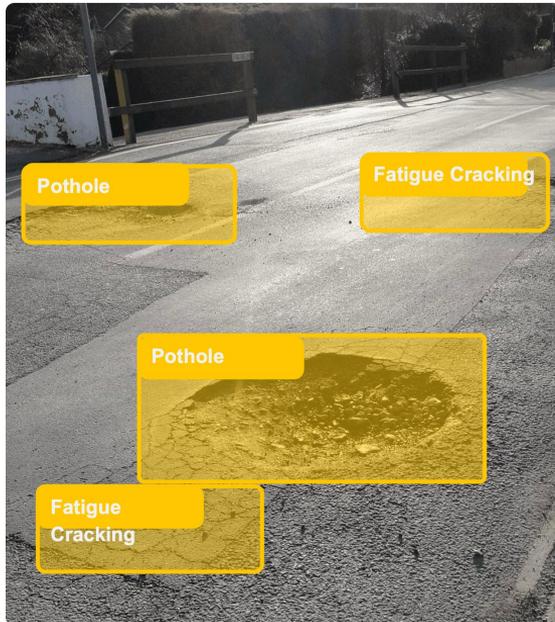
### ROAD SAFETY



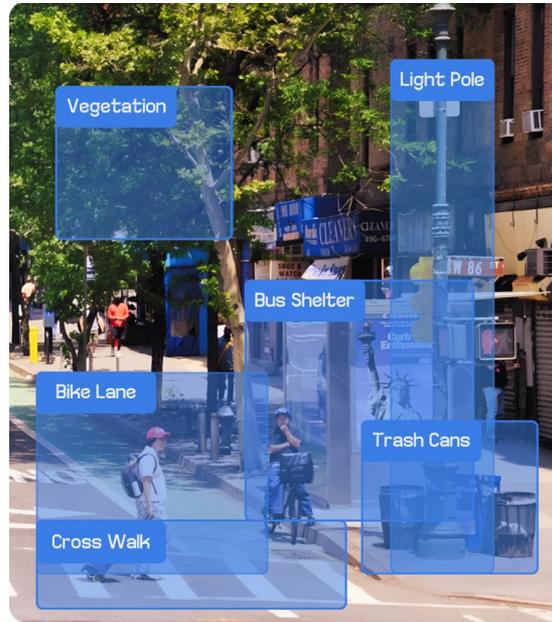
## CHANGE AND ANOMALY DETECTION USE CASES

*Use cases for EchoTwin's change and anomaly detection technology are endless*

### PAVEMENT DEFECT



### ROAD INFRASTRUCTURE



### VISUAL POLLUTION

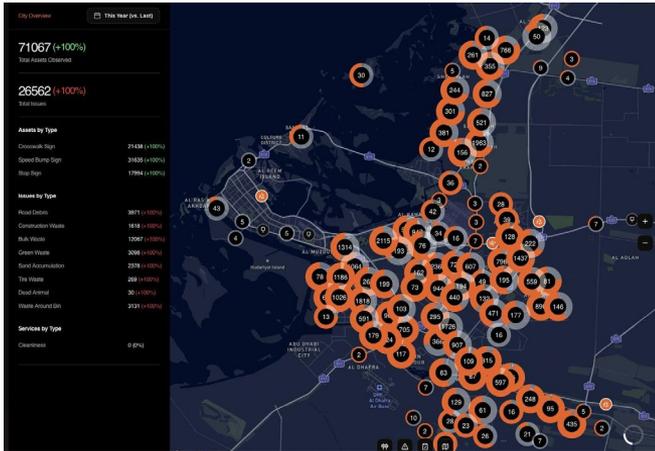


## TRANSFORMING ABU DHABI'S WASTE MANAGEMENT WITH AI DRIVEN COMPLIANCE

**Background:** DMT is a regulatory authority of Abu Dhabi in the United Arab Emirates responsible for overseeing and supervising the regional municipal councils and municipal administrations

### Challenge

- Struggled to keep pace with illegal dumping, debris accumulation, and inefficient waste collection
- 600,000 events captured over life of contract



### Solution

- Deployed CityView, equipping vehicles with CityVision sensors
- Within 30 days, identified and classified over **9,000 waste issues, reducing manual inspection time by 60% and cutting operational costs by 35%**
- City streets became noticeably cleaner, and municipal teams were able to respond to hazards within hours instead of days

## THE IMPACT TO CITIES: ECONOMIC DEVELOPMENT & GROWTH

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### Efficiency Through Analytics

Reduced operating costs and revenue leakage through change detection technology, enabling cities to be proactive instead of reactive



### Business Attraction & Job Creation

Strong infrastructure and dependable city services make municipalities more appealing to businesses, fueling investment and employment opportunities



### Boost in Tourism & Retail

A well-maintained, visually appealing urban environment draws more visitors and shoppers, increasing revenue for local businesses. Also improves quality of life for residents



### Sustained Municipal Prosperity

Rising tax revenues enable reinvestment in public infrastructure and services, creating a positive cycle of growth and community improvement

## ECHOTWIN AI PILOT CONCEPT FOR MEMPHIS

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- 30 to 45-day duration
- 3-5 Use Cases
- No cost to the City
- EchoTwin AI responsible for installation and ongoing operation
- City provides vehicles for pilot – typically sanitation vehicles, street sweepers, transit buses
- If pilot is successful, consider expanding into formal contract or procurement

### **Waste and Debris Management**

- ✓ Road debris
- ✓ Bulk, Green, Overflowing garbage can, bin, and dumpster waste
- ✓ Construction waste
- ✓ Tire waste

### **Infrastructure & Asset Management**

- ✓ Bus stop condition
- ✓ Waste bin/dumpster condition
- ✓ Asphalt damage
- ✓ Speed bump condition
- ✓ Street light outage
- ✓ Sign management - Stop, Speed Limit, Crosswalk, etc. (missing, illegible, graffiti)
- ✓ Construction zone identification

### **Parking/Code Enforcement**

- ✓ Mobile Bus Lane Enforcement
- ✓ Bike Lane Enforcement
- ✓ Code Violation Enforcement
- ✓ Street Sweeper Enforcement



Connect With Us

Website: <https://www.echotwin.ai/>

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# APPENDIX

# ECHOTWIN AI CAMERA AND COMPUTE BOX

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