Next Generation Property Survey

City Detect

August 2025

CITY OF CLEVELAND
Mayor Justin M. Bibb

Property Survey - 2022

Property Survey Provides Critical Data and Information

- $170k to complete a door-to-door property survey
  - Grant-funded contract with Western Reserve Land Conservancy
- ~6 months to complete
- Required support of ~40 code inspectors
- Took photos and answered 50+ questions about each property

- **Expensive**: Cost and time
- **High Opportunity Cost**
- **Infrequent**: Previous was in 2015

Image: City of Cleveland 2022 property survey

Manual property survey is time and labor intensive, quickly obsolete

URBAN ANALYTICS & INNOVATION

Is There A Better Way?

What We Need As A City

- Up to Date Images
- Condition Detection
- Proactive Approach
- Increased Efficiency

Staff are using Google Street View today...

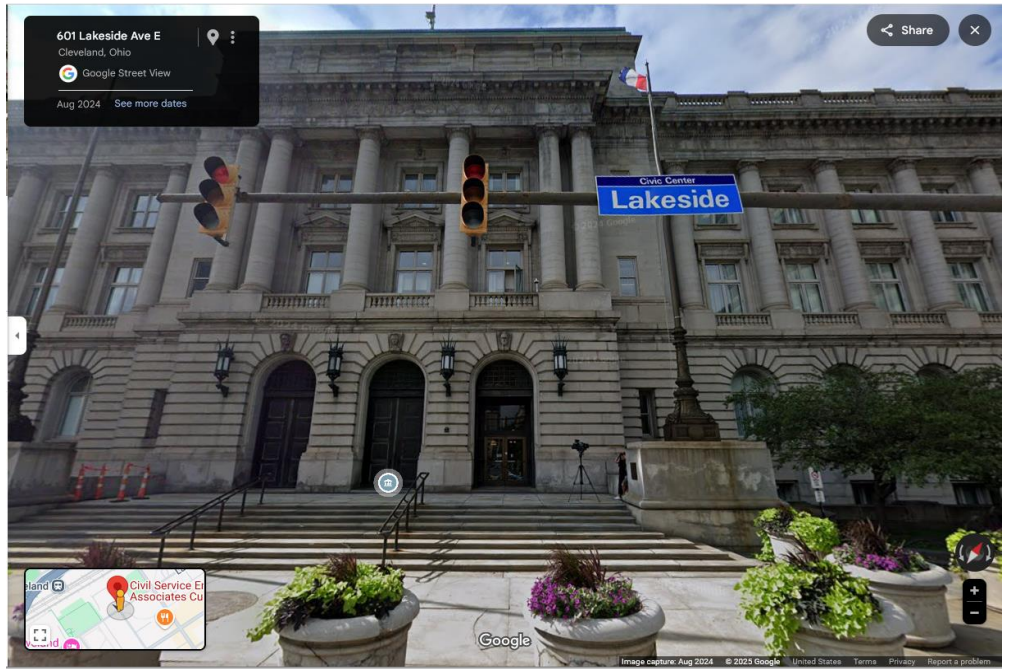


Image: Google Maps photo

... but photos are frequently out of date

URBAN ANALYTICS & INNOVATION

CITY DETECT

Automated Property Survey Solution

Startup
- Formed in 2021

Example Customers
- Columbia, SC
- Stockton, CA
- Tuscaloosa, AL

https://citydetect.com/

City Detect uses computer vision and AI to analyze images of city properties, identifying issues to provide real-time insights for local governments.

End to End Solution – Camera to Web

Computer Vision and AI to Identify 140+ Potential Property Issues

Web Portal for Review and Reporting

City Detect – How Does It Work?

Hardware

- 2 cameras mounted on 1 City vehicle
- Take photos as it drives (25-35 MPH)
- Geo-located images
- Car clearly branded

Software

- Automatically detect potential property issues from images using computer vision and AI
- Portal for staff to log in and view images, search

Implementation

- Staff use images to track parcel conditions over time (like the property survey)
- Staff use images to prioritize work

Hardware – The Camera

City Detect

- Side-facing cameras attached to vehicle
- Captures images from the public right-of-way
- Automated blurring of personal information (license plate numbers and faces)
- Automated transfer of images and results from camera to cloud-based software solution
- Branded so car is clearly identifiable

Example City Car

Image: mockup by City of Cleveland

Software – Image Analysis

City Detect

Detection of property conditions

- High grass
- Collapsing structures
- Trash
- Tires
- Graffiti
- Boarded windows/doors
- Damaged street signs
- Damaged guardrails

Analysis of property conditions

- Housing Condition
- Object Level Insights
- Weekly Updated Reports
- Track change-over-time

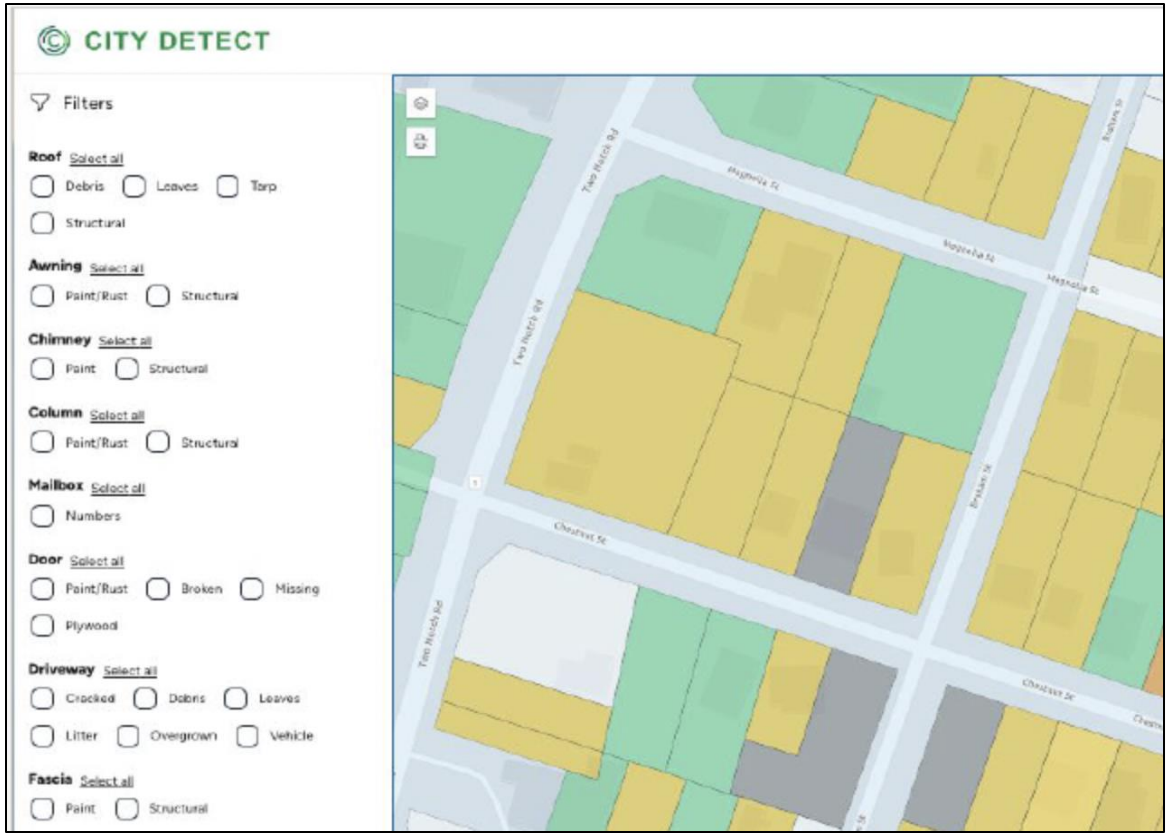
Blurred faces and license plates for privacy.

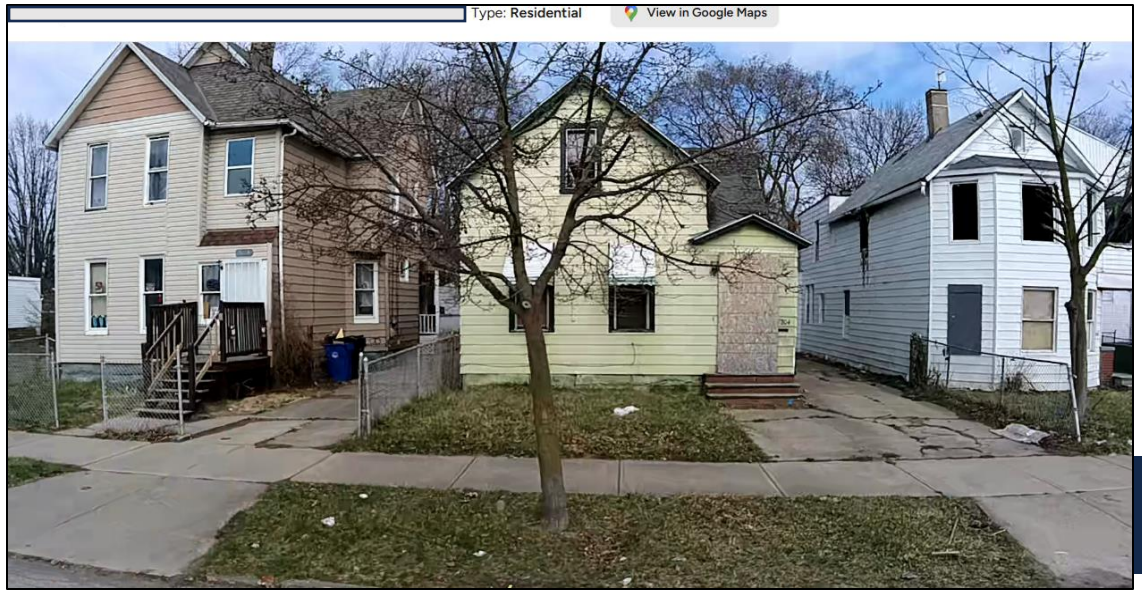
Image: Courtesy of City Detect

Software – Portal for Staff

City Detect

- Web portal to review results
- Searching across properties in a GIS map
- Workflow functionality for task lists





What City Detect will see

Images: Courtesy of City Detect

URBAN ANALYTICS & INNOVATION

Automated Code Issue Detection

What this **IS**

- **Proactive Property Condition Detection**
  - Tool for staff to support their work
- **Public Right-of-Way Image Capture**
  - Just like the Property Survey
  - And Google Street View

What this **IS NOT**

- **NOT** Staff Replacement
- **NOT** Automated Ticketing
  - There is a human in the loop for all actions
- **NOT** Public Safety Surveillance
  - Blurred faces and license plates for privacy

Pilot Proposal – Year 1 Vehicle

$85,000 Rocket Community Fund Grant for 1-year

Vehicle

- 1 City car, 2 side-mounted City Detect cameras
- Branded as "311 City Support Vehicle"
- Driven by current City staff

Routes / Coverage Estimate

We estimate we can conduct a full property survey about once / month

How we got to this estimate

- ~1,264 street centerline miles in City
- ~2,528 lane miles (i.e., both sides of street)
- Assuming:
  - With 7 hours of driving at 25 miles an hour, 5 days a week
  - Full City lane-mile coverage could be available every 3 weeks
  - Allow flexibility for weather, staffing changes, staff leave, etc.
- Routes and schedule can be adjusted/optimized as needed