Partners in Progress 2024

San Francisco

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- DURATION

  Ongoing since 2024

- POPULATION 2024

  San Francisco: 842,027 (Growth rate -0.4%)

- URA SCOPE

  STRATEGY. Shared Vision

- TOPICS

  MONITORING, URBAN CANOPY, REMOTE SENSING, MAINTENANCE, HAZARDS, DATA

- MAIN ACTORS

  Taro AI, Inc.
  World Economic Forum / Yes SF
  Smart Futures Lab

TheBay Urban Visioning Awards

Monitor Trees and Urban Infrastructure with Taro AI

City infrastructure tells a story — of past decisions, future risks, and daily life unfolding among streets, sidewalks, and trees. Yet across much of the urban landscape, that story remains fragmented. Records are missing, outdated, or buried in inaccessible systems. The result? Costly emergencies, inefficient maintenance, and growing threats to public safety and resilience.

Taro AI was built to rewrite that narrative. At the intersection of machine learning and remote sensing, this tool offers cities a smarter, faster way to understand and care for their environment — beginning with the urban forest.

For many municipalities, tree inventories are a challenge: expensive, slow, and often incomplete. Taro AI changes that by using aerial and street-level imagery combined with advanced computer vision to automatically identify and map trees across entire cities.

But it doesn't stop at cataloguing. As trees decline in health, fall, or pose a hazard, Taro AI flags these changes in near real time, prompting early intervention.

The result is more targeted care, fewer emergency removals, and better allocation of already limited resources.

The system also reveals connections often missed.

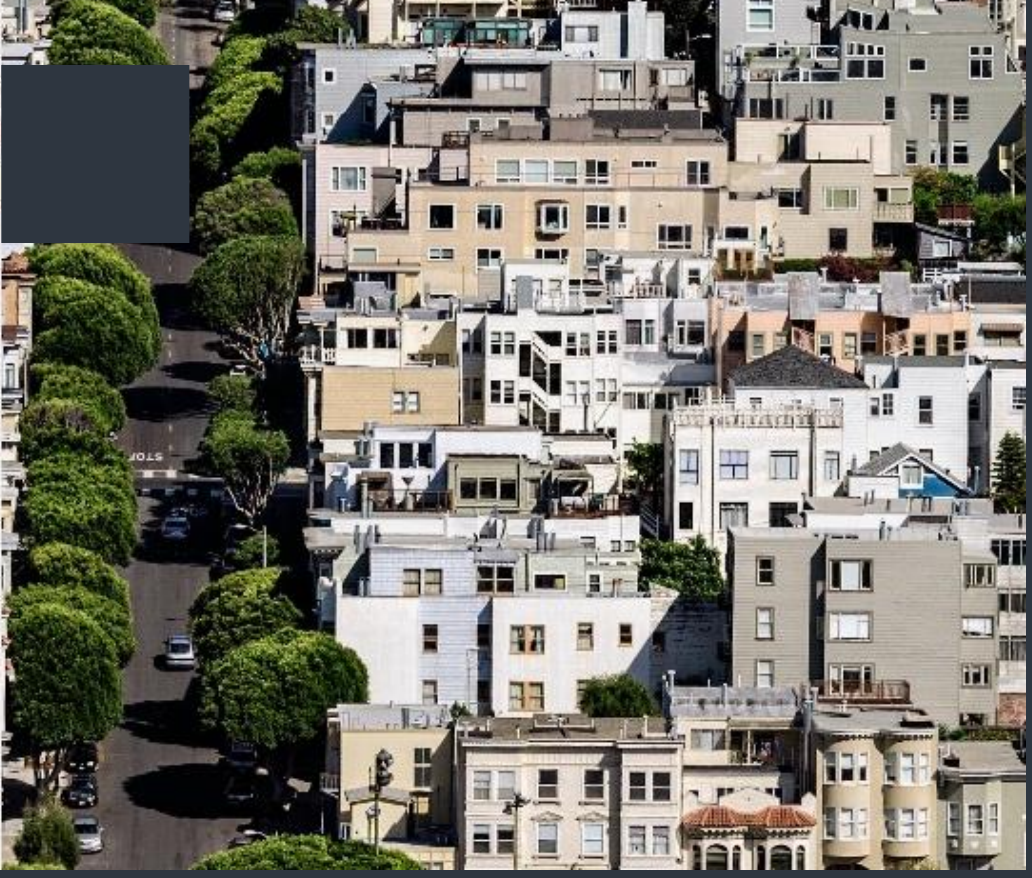
By layering data from tree coverage with building footprints, cities can assess wildfire risk where vegetation overlaps roofs and facades. As climate pressures grow, this kind of environmental intelligence becomes essential — not just for urban planning, but for disaster prevention.

Taro AI's capabilities are expanding rapidly. From sidewalks and roads to signage, streetlights, and utility poles, the platform is being trained to monitor additional types of infrastructure.

In regions like Spain, where older buildings must undergo routine visual inspections, Taro AI offers a way to automate parts of that process, cutting costs and streamlining compliance.

At its core, Taro AI is about access — bringing clear, accurate, and timely data to the people who need it most.

With each new dataset, each updated map, it helps cities tell a fuller story: one grounded in insight, guided by action, and shaped by the belief that better data builds stronger communities.



Challenge

Cities like San Francisco—and urban areas around the world—face a growing challenge in managing the complex web of elements that make up the built environment. Streets, sidewalks, signage, streetlights, utility poles, and trees all require regular inspection and care. Over time, these components deteriorate due to age, weather, climate stress, and increasing use. Yet the condition of much of this infrastructure remains unknown or poorly documented, creating significant risks for safety, continuity of services, and quality of life.

Tree canopy loss, sidewalk cracks, unstable poles, and other unnoticed hazards can lead to property damage, public injury, business disruption, and in some cases, displacement. For many cities, particularly those with aging infrastructure and stretched resources, the cost of monitoring and maintaining these systems is high. Manual inspections are labour-intensive and time-consuming, often relying on small teams and outdated records.

This problem is especially acute in underserved neighbourhoods, where investment in infrastructure maintenance has historically been lower. As climate events become more frequent and extreme, the vulnerability of these areas increases. Without timely, accurate data on infrastructure condition, cities struggle to act preventatively resulting in higher emergency response costs and avoidable losses.

Solution Proposed

Taro AI is an automated system that helps cities monitor urban infrastructure, starting with trees and canopies. It allows for early detection of hazardous trees, preventing property damage and disruptions. By automating these processes, Taro AI reduces the need for manual inspections and lowers maintenance costs.

The tool is particularly impactful in underserved communities, where limited resources, aging infrastructure, and lower levels of tree canopy increase vulnerability to extreme heat events. These areas often face higher risks of heat-related illnesses and fatalities, especially among older adults and individuals with preexisting health conditions. By improving visibility into urban canopy health, Taro AI supports more equitable climate resilience.

The project builds on prior experience in urban heat mitigation and AI. Cynthia Wu, CEO of Taro AI, previously led the development of the Cool Roofs tool at Google Research, which helped cities reduce urban heat island effects using near-infrared imagery. CTO Nate Harada brings a decade of experience in machine learning and computer vision from roles at Waymo and Cruise. Taro AI was developed in response to gaps in infrastructure data and the inefficiency of manual inspections, using remote sensing and ground-level imagery to provide scalable, real-time monitoring.

Impact

In the past year, Taro AI has achieved significant recognition and traction through participation in several high-profile innovation and sustainability initiatives.

The company was selected as a Top Innovator by the World Economic Forum and as a winner in the Yes SF Urban Sustainability Challenge, emerging from a pool of over 140 companies.

This public-private partnership, aimed at revitalizing downtown San Francisco, awarded Taro AI a non-dilutive grant of $71,000, along with global visibility and access to early pilot partnerships with city departments.

Current pilots include collaboration with the nonprofit responsible for planting the majority of San Francisco's urban trees, as well as pending partnerships with the Recreation and Parks Department and a major state university.

Media exposure resulting from these initiatives has been substantial. Press coverage included a segment on KTVU, which reached over 1.5 million views within a month, and a feature on the front page of the *San Francisco Examiner*. Video content produced for Yes SF has surpassed one million views, enhancing public awareness and stakeholder engagement.

Nationally, Taro AI was accepted into the Smart Futures Lab, a federally funded program supporting urban tech solutions in Colorado.

The initiative, in partnership with the University of Colorado and the Colorado Smart Cities Alliance, fosters collaboration between government and technology companies to address urban infrastructure needs.

Additionally, Taro AI was named a finalist in the OHUB x NOLA NETI Climate Tech Bootcamp, focused on equitable climate innovation in Southern Louisiana.

These combined efforts have expanded Taro AI's influence, validated its approach, and positioned it as a leading solution provider in climate and infrastructure intelligence.