

**APPENDIX A: SURVEILLANCE TECHNOLOGY IMPACT REPORT**

<b>Department or Division:</b>	OSPCD – Public Space and Urban Forestry
<b>Compliance Officer (name and position):</b>	Alan Inacio, Director of Finance and Administration OSPCD
<b>Submitted by:</b>	Vanessa Boukili, Senior Urban Forestry and Landscape Planner
<b>Date:</b>	5/20/2026
<b>Surveillance Technology:</b>	Smart Tree Inventory

<b>Please identify the purpose(s) of the proposed surveillance technology. Select ALL that apply by entering “X” in the left column.</b>	
X	Identifying and preventing threats to persons and property and preventing injury to persons or significant damage to property
	Identifying, apprehending, and prosecuting criminal offenders
	Gathering evidence of violations of any law in criminal, civil, and administrative proceedings
	Providing information to emergency personnel
	Documenting and improving performance of City employees
	Executing financial transactions between the City and any individual engaged in a financial transaction with the City
	Preventing waste, fraud, and abuse of City resources
X	Maintaining the safety and security of City employees, students, customers, and City-owned or controlled buildings and property
	Enforcing obligations to the City
	Operating vehicles for City business
	Analyzing and managing service delivery
X	Communicating among City employees, with citizens, or with third parties
	Surveying and gathering feedback from constituents
X	Other (Describe): The purpose of this technology is to provide a full inventory of all public trees, including 360 degree view images of each tree, and a digital twin of each tree using LiDar technology.  If the surveillance technology is used for a purpose not listed above, does the purpose comply with the surveillance use policy? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Complete ALL of the following items related to the proposed surveillance technology. Be as specific as possible. If an item is not applicable, enter "N/A." Do NOT leave fields blank.**

1. Information describing the surveillance technology and how it works:

Davey Resource Group, in cooperation with its exclusive partner, Greehill, completed a Smart Tree Inventory in Somerville in 2024. The Smart Tree Inventory uses vehicle-mounted ground-based LiDAR sensors, GPS positioning, and digital photography to collect spatial and visual data related to public trees located within the public right-of-way. The system captures Light Detection and Ranging (LiDAR) point cloud data and multiple photographic images of each tree from different angles during a single pass along a street segment. Artificial intelligence (AI) and data-processing software are then used to analyze the collected data and generate a digital inventory of public trees, including tree locations and physical characteristics. Data collection occurred at a single point in time for each tree as the survey vehicle traveled through the project area.

a. Authorized use – the uses that are authorized, the rules and processes required before that use, and the uses that are prohibited (10.64.b.2):

The data is housed on Davey Resource Group’s proprietary software system (TreeKeeper). The location of each tree in the inventory is accessible to the public as a guest user (no login required), as well as some information about each tree (such as species and size), and the digital twin images. However, photos will only be made available to authorized users, including city staff, contractors, and consultants who have been given login credentials.

b. Training – the training, if any, required for any individual authorized to use the surveillance technology or to access information collected by the surveillance technology, including whether there are training materials (10.64.b.9):

New users are trained in the use of the TreeKeeper tree inventory system by one of the system Administrators.

2. Information on the proposed purpose(s) for the surveillance technology (10.64.b.1):

The proposed purpose of the Smart Tree Inventory technology is to collect and maintain accurate information about publicly managed trees within the public right-of-way. The technology is used to support urban forestry operations, including tree maintenance planning, risk management, species diversity analysis, canopy management, and long-term asset management. The data collected is intended to improve the efficiency and accuracy of the City’s municipal tree inventory efforts and to support informed decision-making related to public trees.

3. Information describing the kind of surveillance the surveillance technology is going to conduct and what surveillance data is going to be gathered (10.64.b.3):

The Smart Tree Inventory technology conducts mobile, ground-based data collection along public streets and in public parks to document publicly managed trees and associated streetscape features. The system collects LiDAR point cloud data, geospatial positioning (GPS), and photographic imagery from a vehicle-mounted platform as it travels through the project area. The surveillance data gathered is limited to environmental and infrastructure information and includes tree location, tree structure and form, canopy extent, and visible site conditions. The system captures multiple images and LiDAR scans of each tree from different angles during a single pass, which are later processed to create a digital inventory of public trees.

- a. Data access – the individuals who can access or use the collected surveillance data, and the rules and processes required before access or use of the information (10.64.b.4):

The data is housed on Davey Resource Group’s proprietary software system (TreeKeeper). The location of each tree in the inventory is accessible to the public, as well as some information about each tree (such as species and size), and the digital twin images. However, photos will only be made available to authorized users, including city staff, contractors, and consultants who have been given login credentials.

- b. Data protection – the safeguards that protect information from unauthorized access, including, but not limited to, encryption, access-control, and access-oversight mechanisms; (10.64.b.5)

Photos and digital twin images are directed toward capturing data on public trees. Any images of people are incidental. Photos are only displayed to authorized users (see above). Photos are publicly hosted on a file server. It would be difficult for someone to work out the direct photo URLs without monitoring traffic, but anyone with the photo URL can view it. Direct server access to add, edit, or remove those photos is limited to the Davey Resource Group development, IT, and services teams.

- c. Data retention – the time period, if any, for which information collected by the surveillance technology will be routinely retained, the reason that retention period is appropriate to further the purpose(s), the process by which the information is regularly deleted after that period has elapsed, and the conditions that must be met to retain information beyond that period (10.64.b.6):

Data will be retained indefinitely as this is part of an important long-term inventory.

- d. Public access – if and how collected surveillance data can be accessed by members of the public, including criminal defendants (10.64.b.7):

The public will be able to view the locations of each public tree, species identity, size, and other location characteristics of the tree without using log-in credentials. However, they will not be able to see any images of the trees.

All records created by the Smart Tree Inventory technology are presumed to be public in nature. Requests for such information may be made through the Records Access Officer pursuant to the Public Records Law (G.L. c. 4, § 7, cl. 26; c. 66, § 10, c. 66A, and other pertinent statutes.)

e. Third-party data-sharing – if and how other city or non-city entities can access or use the surveillance data, including any required justification and legal standard necessary to do so, and any obligation(s) imposed on the recipient of the surveillance data (10.64.b.8):

Staff, contractors, and consultants who will be working with public trees and need access to detailed information may be given access to the tree inventory including all associated photos, at the discretion of the administrators.

4. The location(s) it may be deployed and when:

The mobile, ground-based data collection was completed one-time in 2024.

5. A description of the privacy and anonymity rights affected and a mitigation plan describing how the department’s use of the equipment will be regulated to protect privacy, anonymity, and limit the risk of potential abuse:

The Smart Tree Inventory technology collects environmental and infrastructure data in public spaces and is not designed to identify or track individuals. However, because the system uses vehicle-mounted cameras and LiDAR sensors operating in public right-of-way areas, there is a potential for incidental capture of images of members of the public, private property adjacent to the street, and other non-tree objects. To protect privacy and anonymity, data collection is limited to publicly accessible areas and focused on trees and related vegetation, and imagery is processed primarily for asset identification and measurement rather than individual identification. Any incidental capture of personally identifiable information is not a primary objective of the system and is not used for surveillance of individuals.

To mitigate risks of misuse, access to images is restricted to authorized personnel and contractors involved in urban forestry management. Data use is limited to tree inventory, maintenance planning, and related municipal forestry operations.

6. The potential impact(s) on privacy in the city; the potential impact on the civil rights and liberties of any individuals, communities or groups, including, but not limited to, communities of color or other marginalized communities in the city, and a description of whether there is a plan to address the impact(s):

While the system is not intended to identify individuals or conduct behavioral surveillance, any technology that collects imagery in public spaces carries a potential privacy impact, particularly in areas with higher pedestrian activity or dense residential conditions.

The data collected for this project is limited to environmental and infrastructure features, and is used solely for tree inventory and urban forestry management purposes.

7. An estimate of the fiscal costs for the surveillance technology, including initial purchase, personnel and other ongoing costs, and any current or potential sources of funding:

The updated tree inventory was a one-time cost of \$117,545.00, funded by a combination of money from the General Fund and the Street Tree Stabilization Fund. No additional costs are anticipated at this time.

8. An explanation of how the surveillance use policy will apply to this surveillance technology and, if it is not applicable, a technology-specific surveillance use policy:

This technology will be operated, and data collected and accessed, in compliance with the Surveillance Technology Use Policy.

- a. Oversight – the mechanisms to ensure that the surveillance use policy is followed, including, but not limited to, identifying personnel assigned to ensure compliance with the policy, internal record keeping of the use of the technology or access to information collected by the surveillance technology, technical measures to monitor for misuse, any independent person or entity with oversight authority, and the sanctions for violations of the policy (10.64.b.10):

The department will designate a Compliance Officer who will be responsible for ensuring this technology is used in compliance with the Surveillance Technology Use Policy, and that department staff receive the training required by the Policy.