

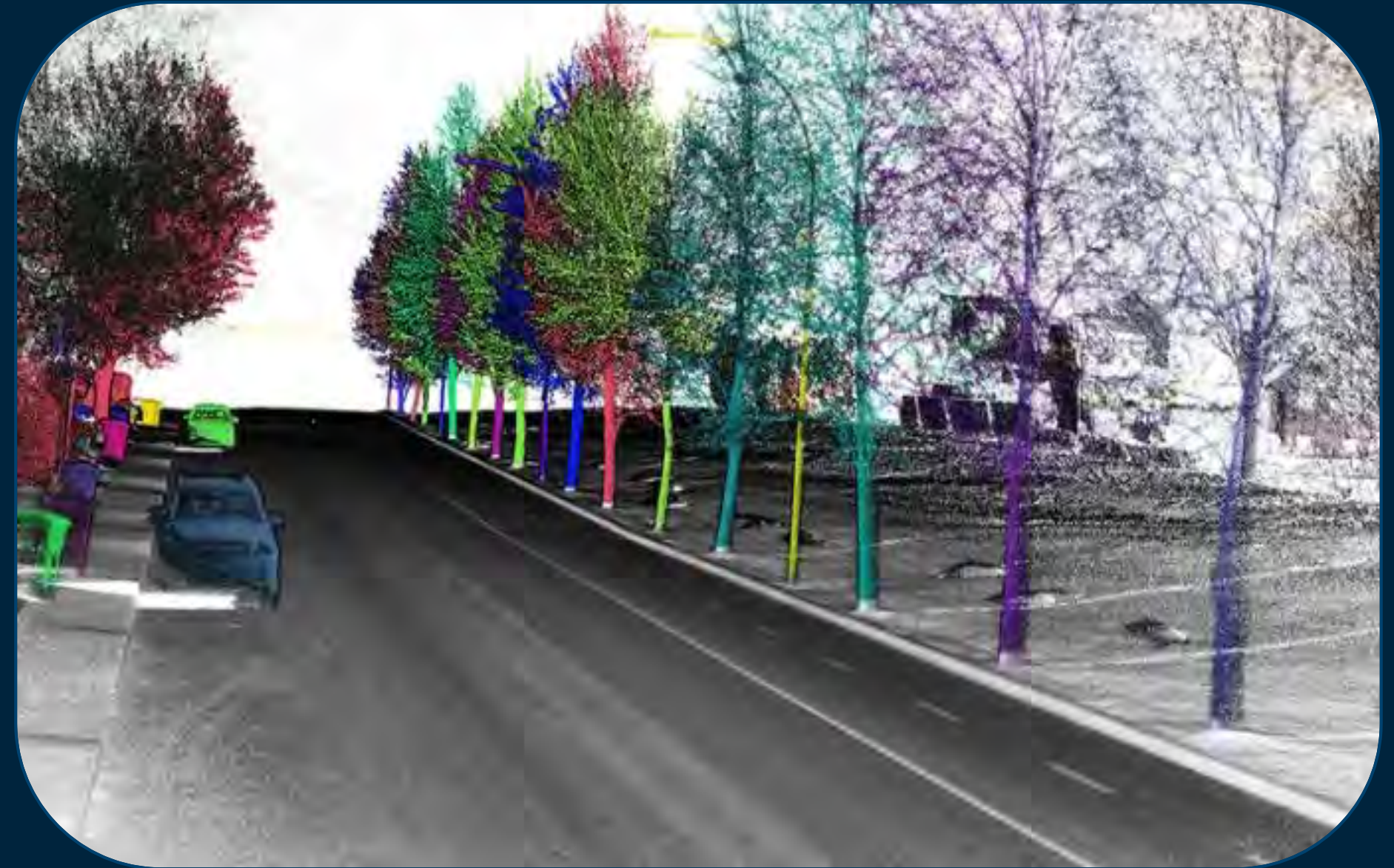


PlanIT Geo™

developers of TreePlotter

TreeD: Inventarios móviles

Empoderando arboristas con la integración de LiDAR y IA.





MAPPING THE WORLD'S URBAN FORESTS FOR A GREENER FUTURE

WWW.PLANITGEO.COM

La solución integral de silvicultura urbana.

Los servicios de PlanIT Geo y la suite de software TreePlotter™ llevarán los programas de silvicultura urbana, parques y sostenibilidad al siguiente nivel.



PlanIT Geo Consulting Services

Inventario y evaluación de árboles →

Inventario de árboles basado en SIG, evaluaciones de riesgos, recomendaciones de mantenimiento, valoraciones e informes de mitigación.

Servicios de cartografía geoespacial →

Evaluaciones de la cubierta arbórea urbana, mapeo de infraestructura verde, aplicaciones de mapeo en web.

Consultoría de silvicultura urbana →

Servicios de consultoría personalizados que incluyen planes de gestión de bosques urbanos basados en datos, elaboración de ordenanzas y políticas, participación de las partes interesadas



Asset Management and Tree Mapping Software



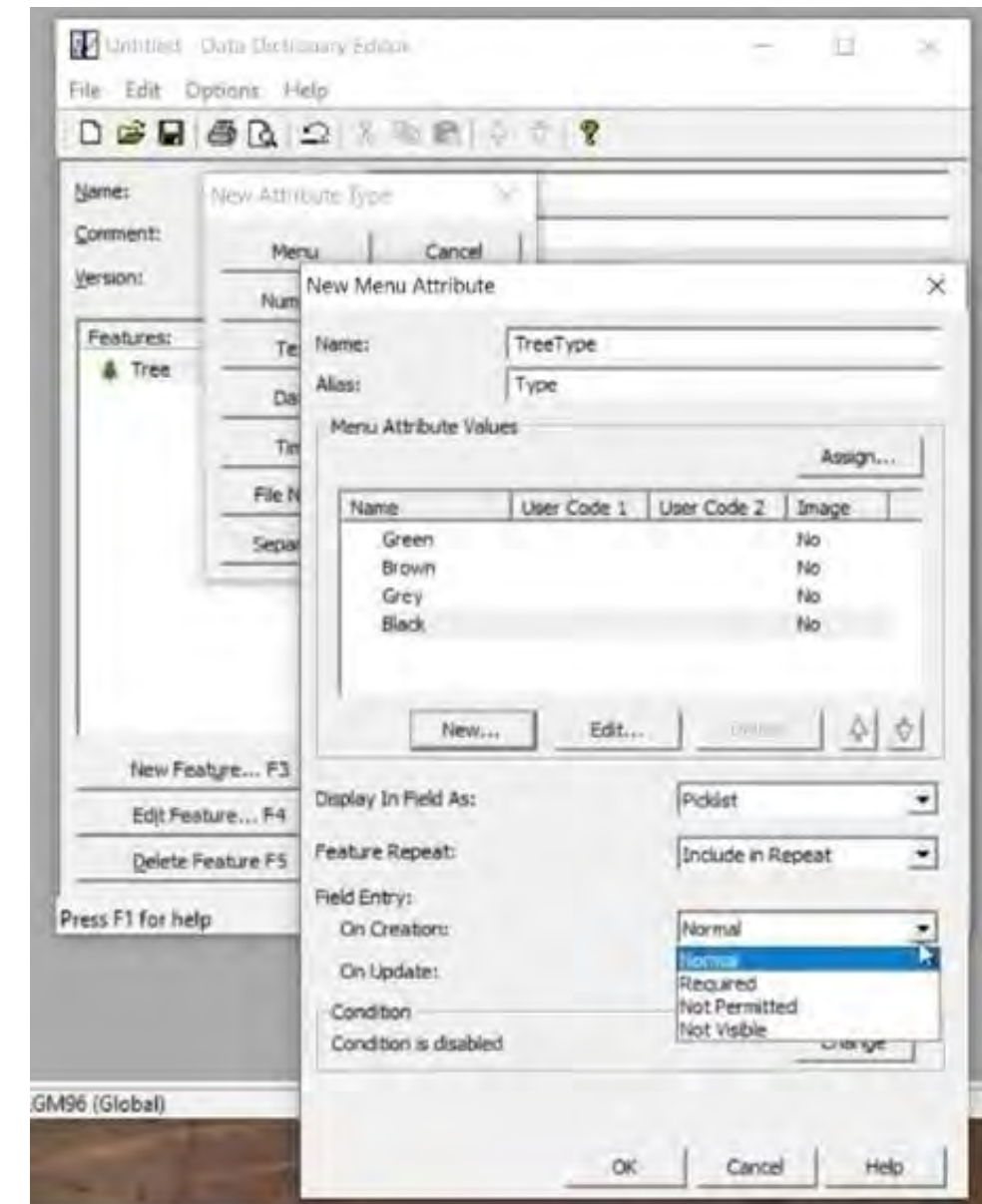
Productos líderes para satisfacer las necesidades de miles de arboristas y profesionales de silvicultura urbana en todo el mundo.



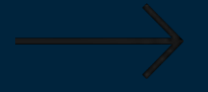
Inventory Technology Methods: Past, Current, and Future

01 From Paper to GPS: manual, time consuming, IT-heavy

Tree #	Species and DBH	Action Taken	Date Completed	Date updated in GIS	Comments
4027	Aspen	Raised up Remove dead	07-08-15		
4028	Aspen	Raised up Remove dead	07-08-15		
4029	Aspen	Raised up Remove dead	07-08-15		
4030	Aspen	Raised up Remove dead	07-08-15		
4031	Aspen	Raised up	7-6-15		
4032	Aspen	Raised up dead branches	7-6-15		
4033	Aspen	Raised up dead branches	7-6-15		
4034	Aspen	Raised up dead branches	7-6-15		



Inventory Technology Methods: Past, Current, and Future



02

From GPS to GIS: less IT burden, faster, cloud hosted, and map/imagery-based

TREEPLOTTER INVENTORY OFFLINE

No Filters Applied

LEGEND

TreePlotter - US

Layer: Trees

Display by: DBH

Symbology: None

View Filter: Off

Showing 35 of 30,435 sites.

Toggle All ?

- 0-3in (3,746)
- 3-6in (3,418)
- 6-12in (5,652)
- 12-18in (4,929)
- 18-24in (2,698)
- 24-30in (1,385)
- >30in (1,987)
- N/A (6,609)
- Not Specified (11)

TEMPLATES

Choose a Type

- No Template
- Tree
- Planting Site - Medium
- Planting Site-Large
- Planting Site Small
- Stump

CHOOSE AN ADD METHOD

- By Map
- By GPS

Click the map to add a Tree

Wires Present and Conflicting

Date Planted 03/08/1995 CLEAR

Latitude 44.049608790827

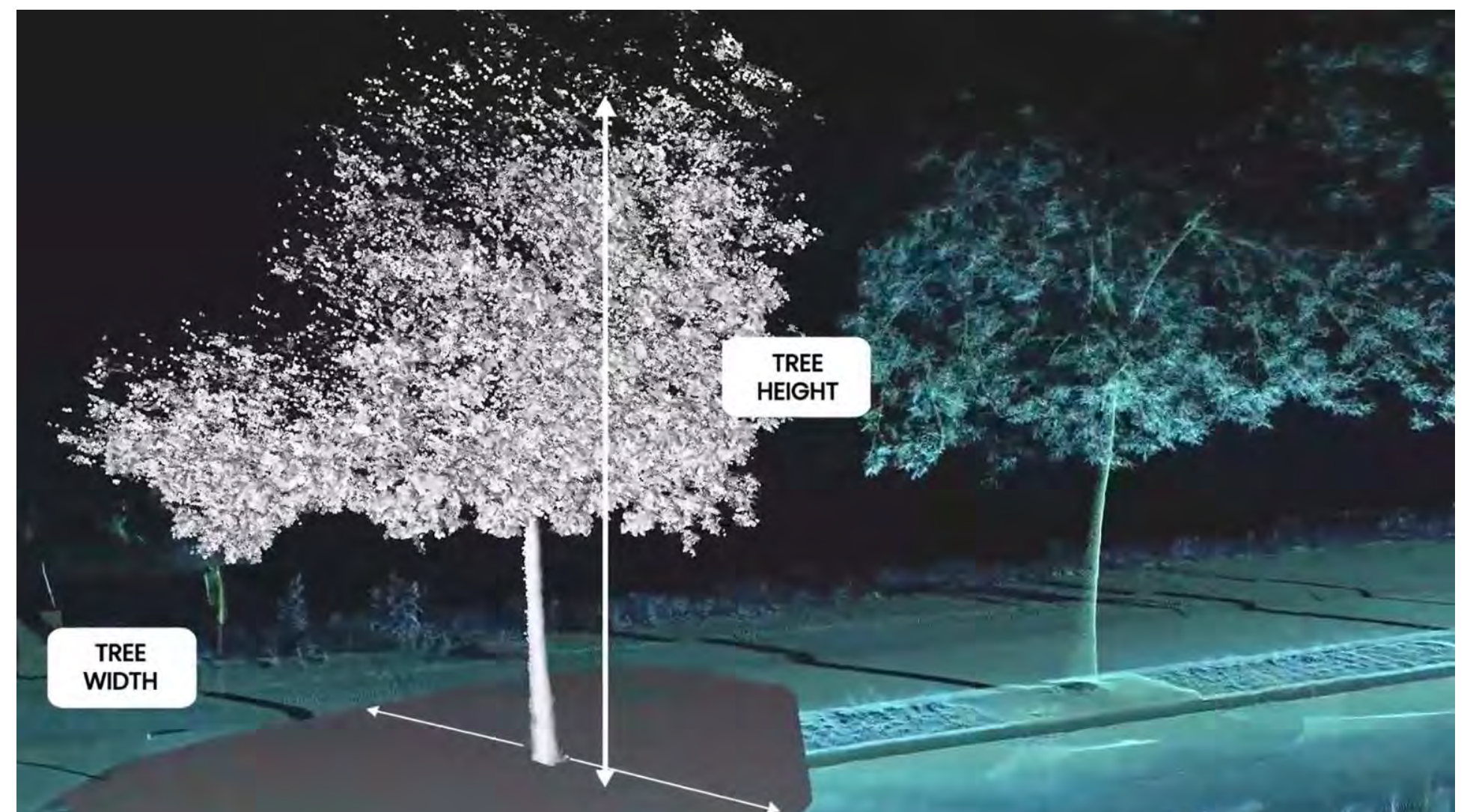
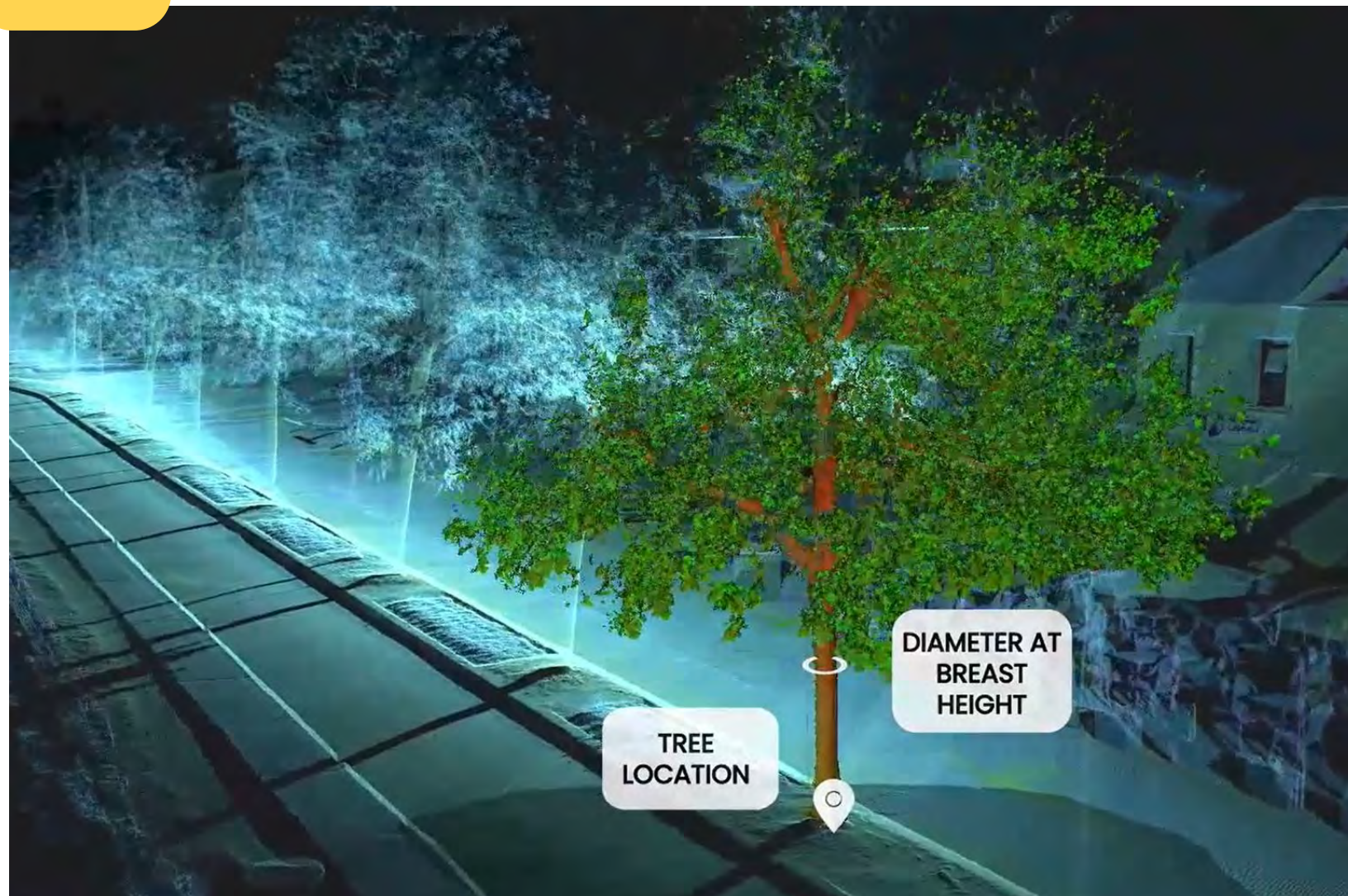
Longitude -123.07453522301



Inventory Technology Methods: Past, Current, and Future

03

From GIS to LiDAR: automated, ultra precise locations and measurements, rich volumetric data



Why Mobile LiDAR and TreeD Inventories?

Industry & Customer Value →

- Tech adoption, innovation, thought leadership
- Efficiency and cost saving
- Cost-share opportunities
- **Customers asked us for this!**

TreePlotter Software →

- Upload data; prioritize inspections and work tasks
- Hybrid approach called TreeD inventories
- Re-scan to assess inventory data changes and trends

Climate & Environment →

- Tree inventories are GHG emission heavy (flights, rental cars, etc.)
- By maximizing data collection remotely, we are aiming to cut our Field Services Team's emissions in half by 2027.



PlanIT Geo's Strategic Partner: Jakarta

Jakarta is a leading provider of high-def street-level imagery, 3D mobile mapping, and analytics for urban planning

75,000+

miles covered

150

cities mapped

3 million

geocoded assets

JAKARTA

AI-driven Digital Twin and Asset Inventory



***TreeD** utilizes the highest resolution 360° cameras and LiDAR sensors on the market for maximum precision of tree inventory analytics.*



TreeD Inventory: a flexible, hybrid workflow



Steps 1 & 2 below

Steps 3 & 4 below



Step 1: Data Capture

360-Degree Imagery for...

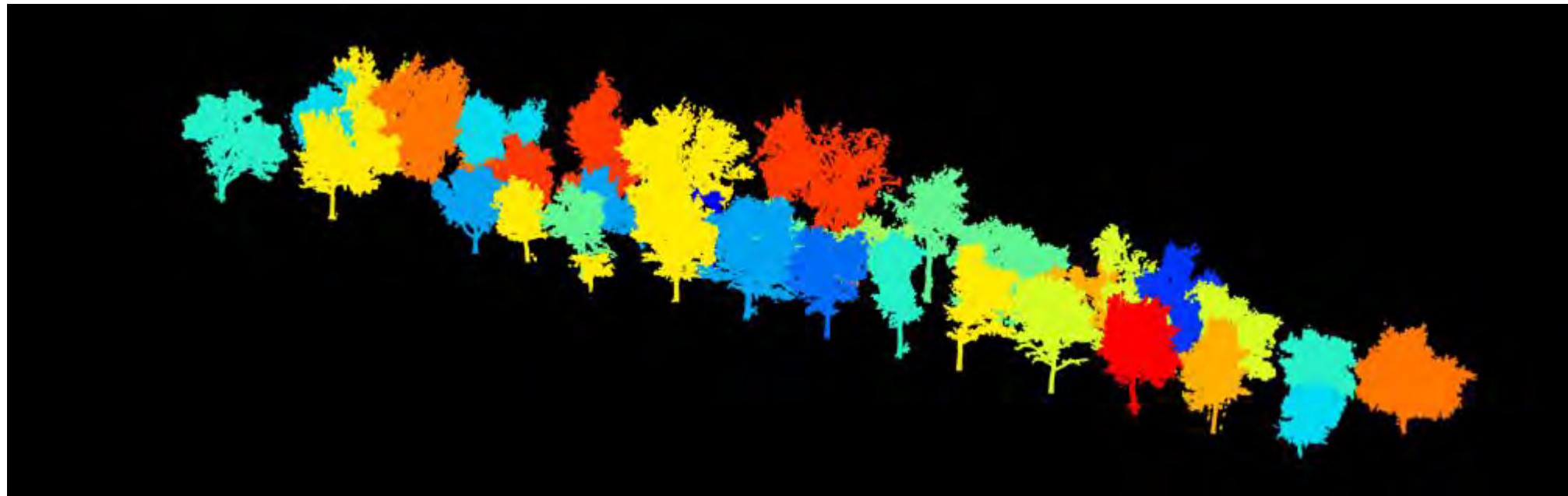
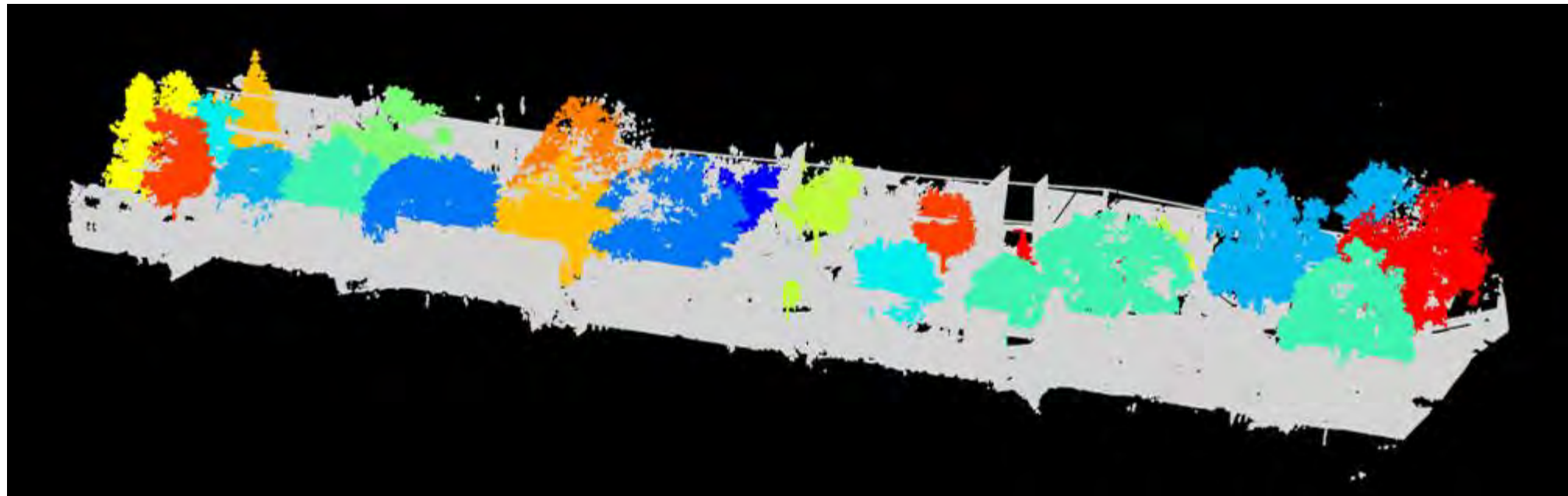
- Species ID, plantable area, immersive viewing, and more

LiDAR Point Cloud for...

- Automating tree locations and measurements



LiDAR Point Cloud Classification Examples



LiDAR can be “classified” or color-coded by:

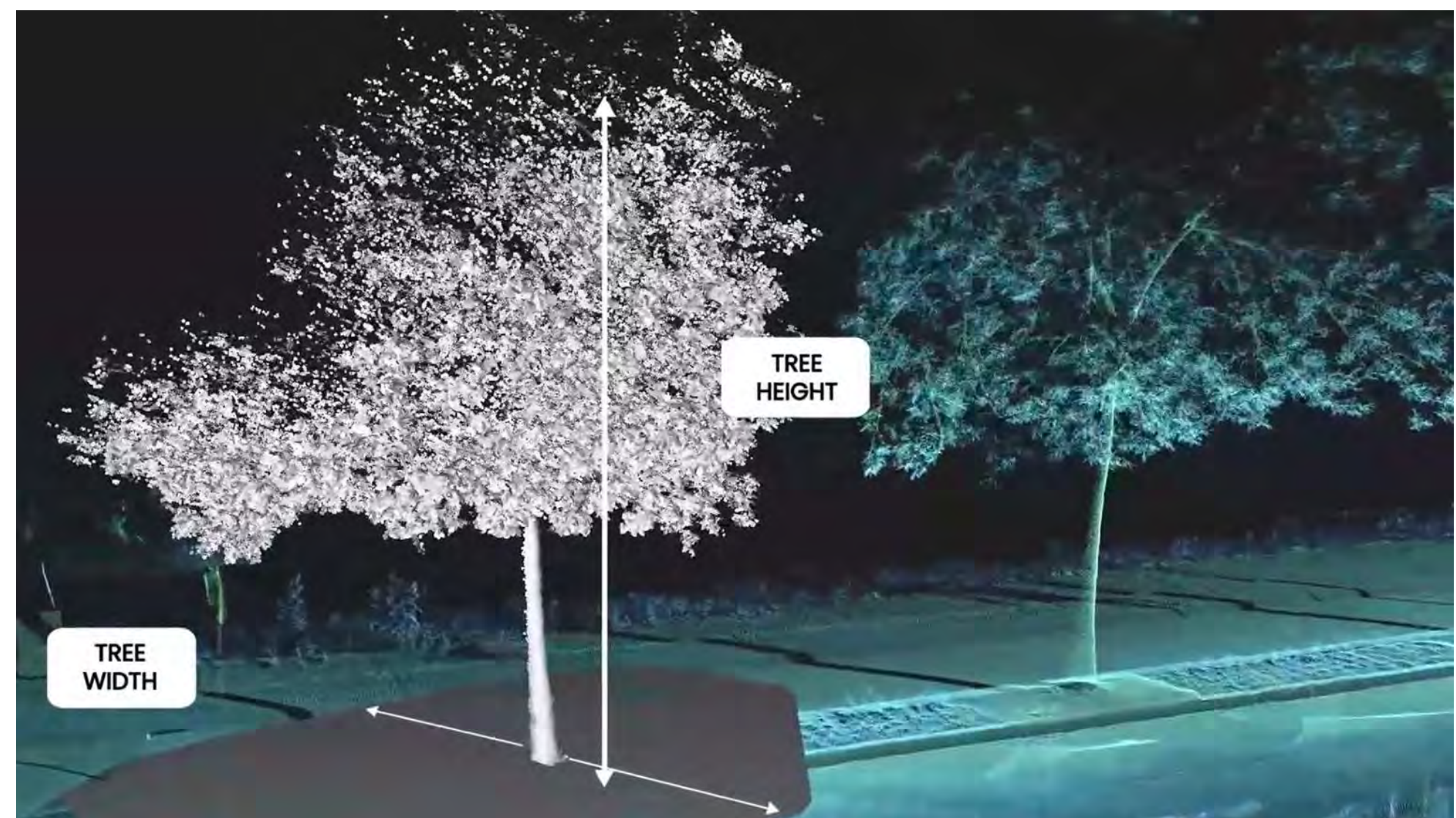
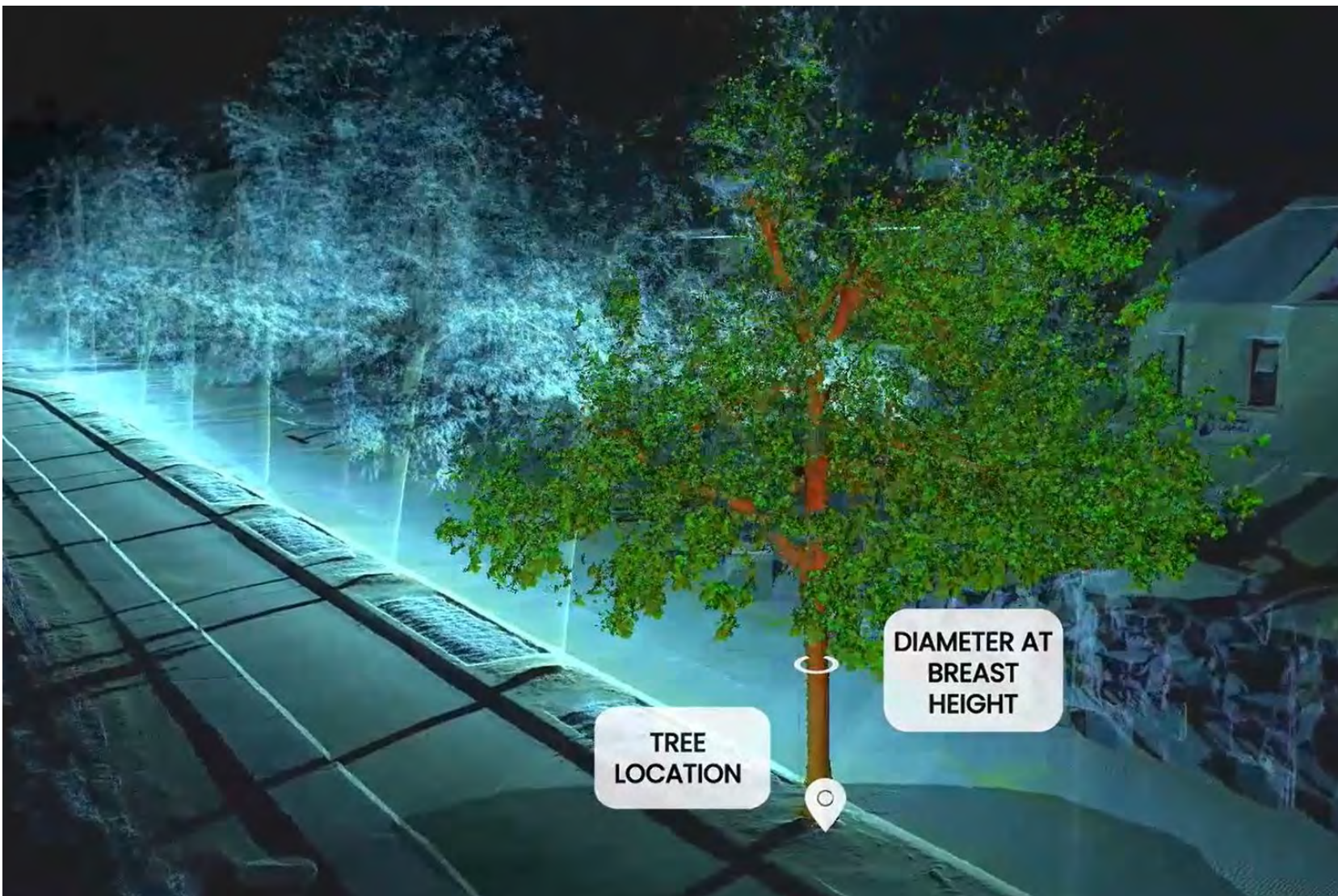
- Elevation (ex: tree height)
- Intensity (ex: wood vs canopy)
- Feature type (ex: tree, powerlines, building, etc.)
- Object (ex: tree segmentation)

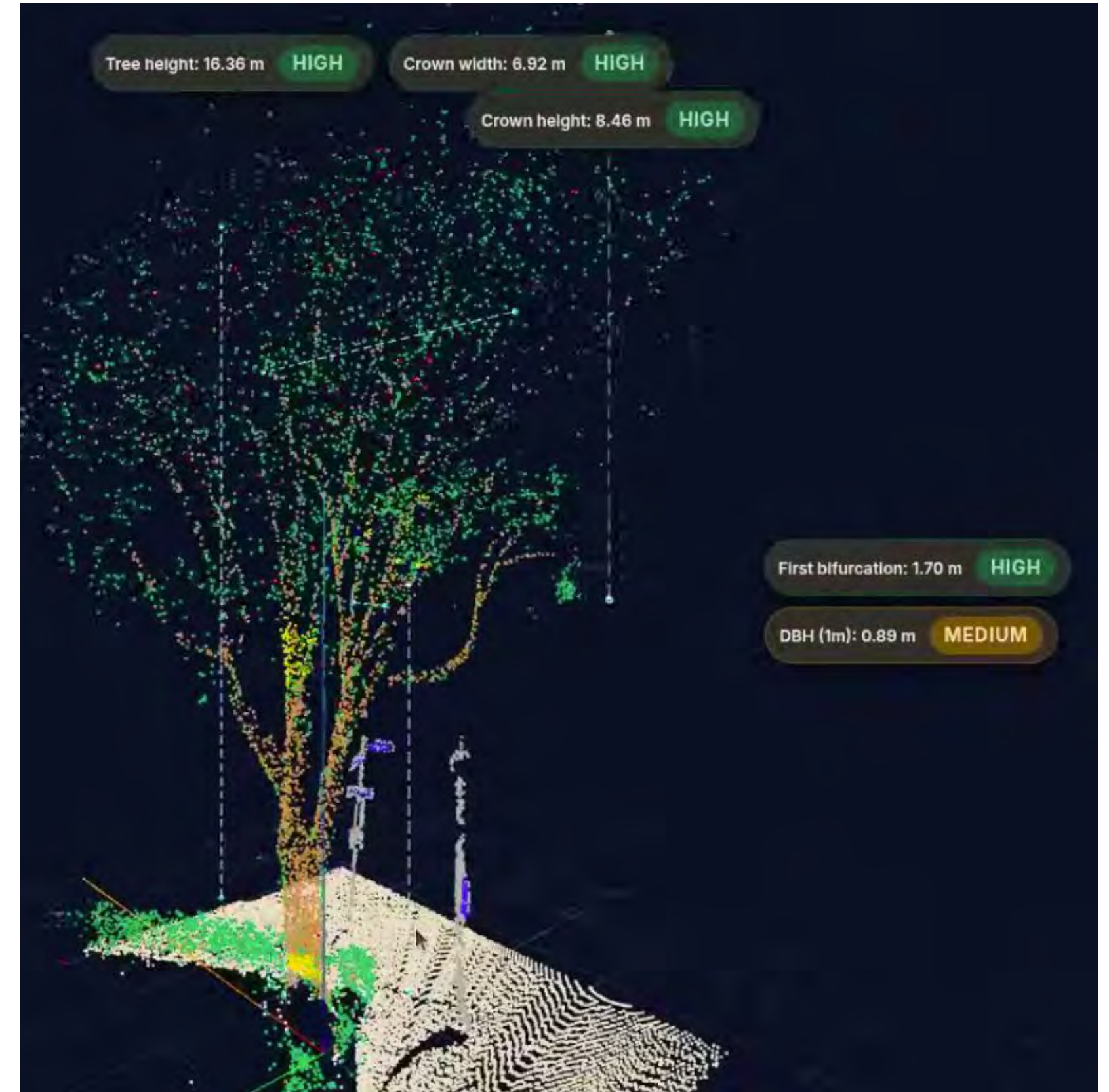
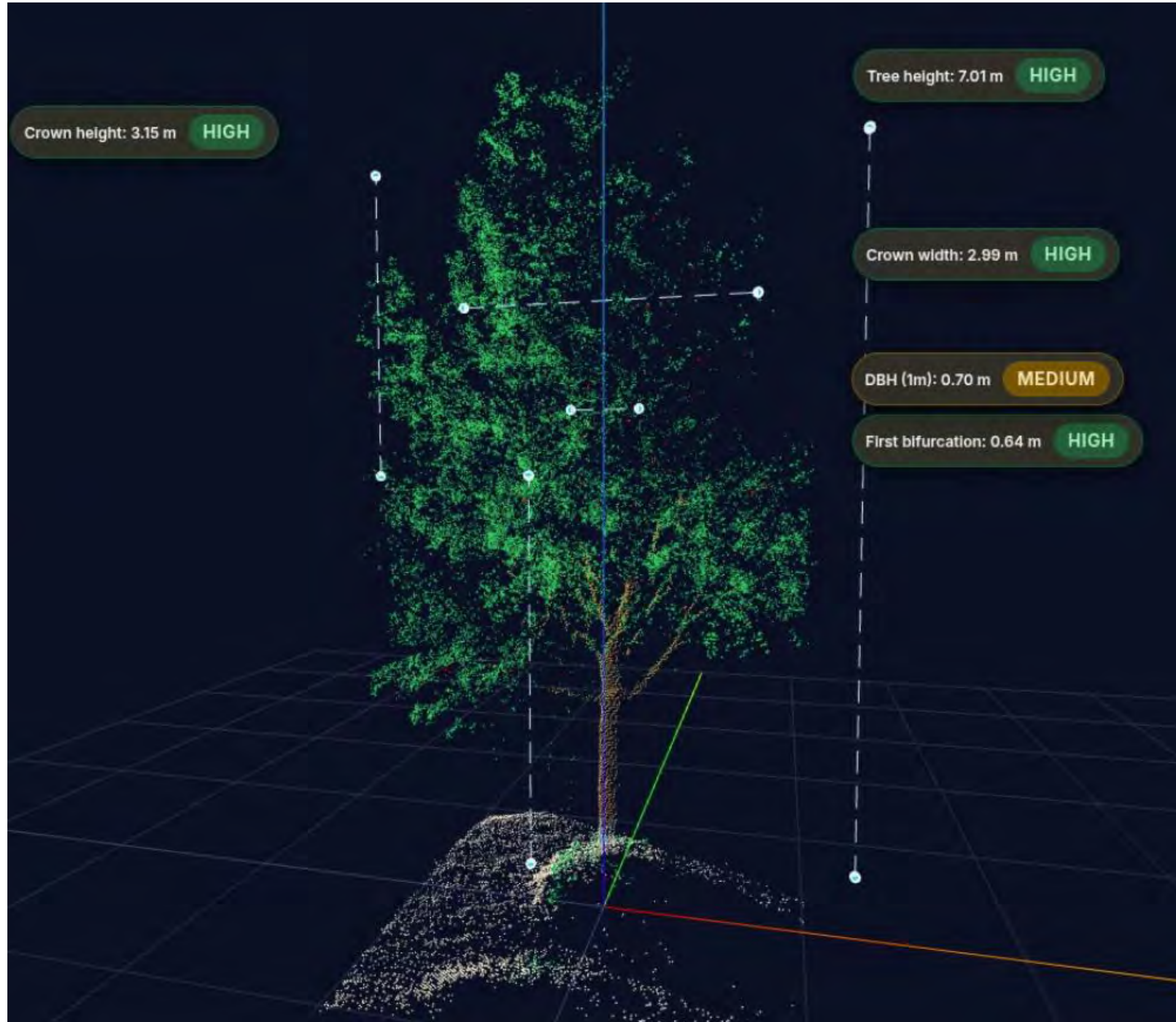
The next slides give examples.



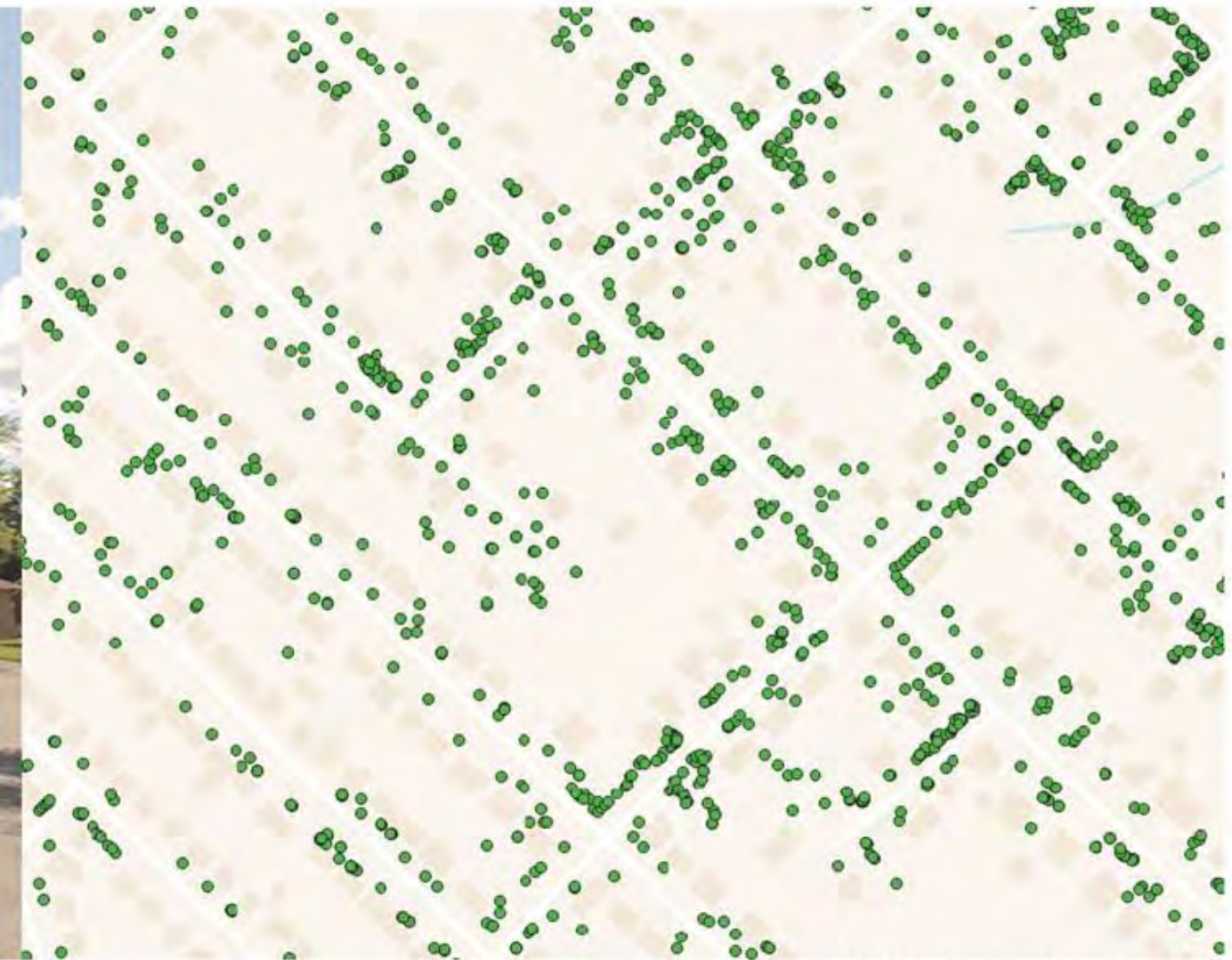
Step 2: Automated Initial Inventory

Analysis of LiDAR point cloud to extract tree location with physical attributes and tree crown area (polygons), and imagery analysis to create possible planting areas (polygons).





Individual trees and physical measurements are automatically extracted from the LiDAR point cloud into a GIS format and go through a rigorous QA process.



Map image of tree points

Description

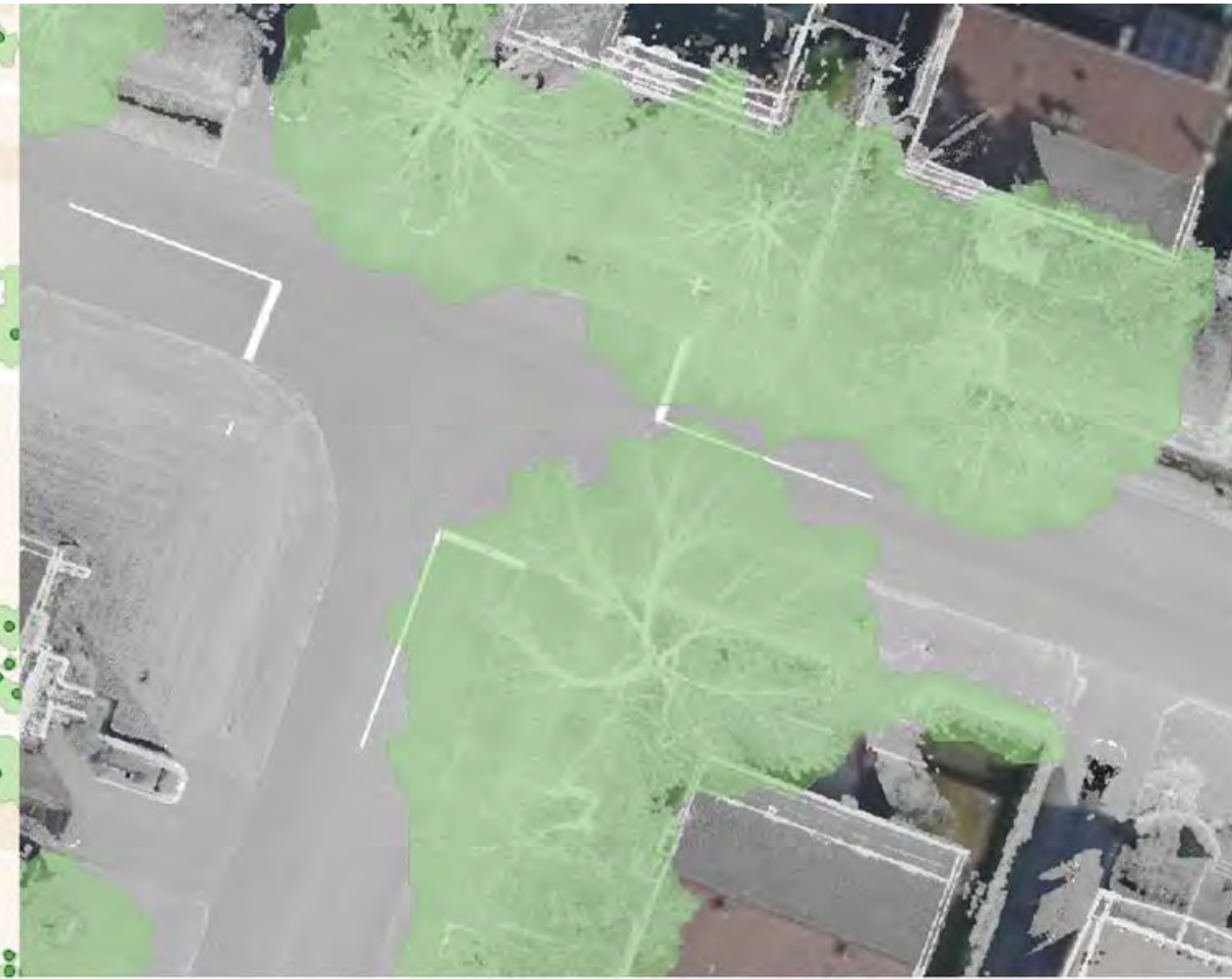
- Tree unique identifier
- Tree position
- Trunk diameter in meters
- Trunk diameter standard deviation
- Trunk diameter measurement method
- Trunk identifier
- Tree height in meters
- Height of the lowest branch in meters
- Projected crown area in square meters
- The three most likely tree genera
- The three probabilities associated with each genera
- Reference to unique identifier of canopy associated with tree
- Link to view the location in Jakartowns
- Scan date



Individual tree crowns (GIS polygons) are automatically segmented from the LiDAR point cloud in addition to tree points. Growth and decline is mapped over time.



Map image of canopy projection with tree inventory



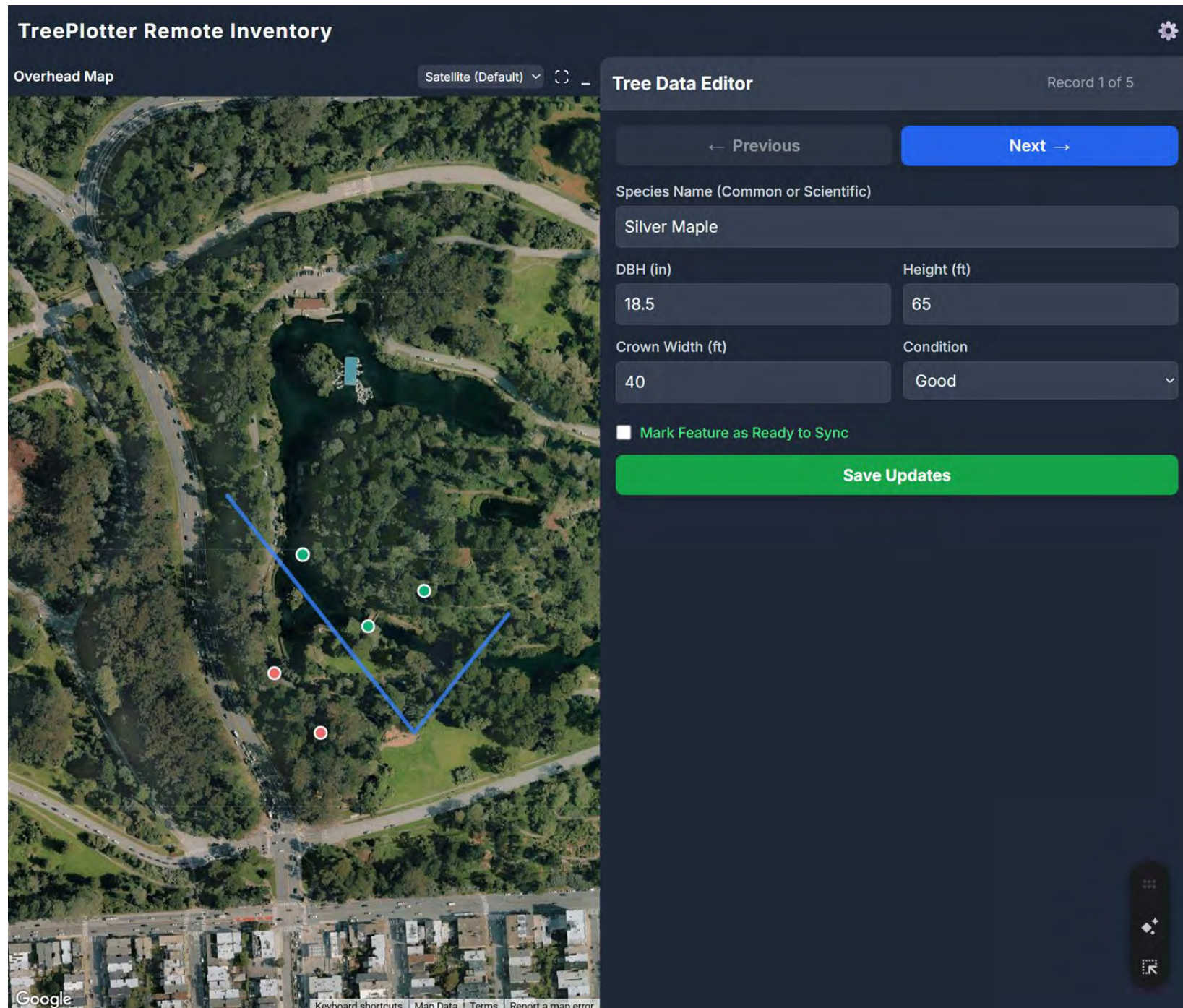
Map image of canopy projection with raster tiles

Description

- Canopy unique identifier
- Canopy projection on the ground
- Maximum height of the canopy in meters
- Canopy area in square meters
- Wooded area
- Link to view the location in Jakartowns
- Scan date



Step 3: Data Enrichment by Arborists



Remotely, our ISA Certified Arborists add more data to the initial inventory using the 360° imagery within custom TreePlotter tools:

- Genus and Species, % Crown Dieback, and Land Use
- Possible Planting Sites
- Maintenance Priority: low/medium/high within specific tree work category, including "further inspection needed"



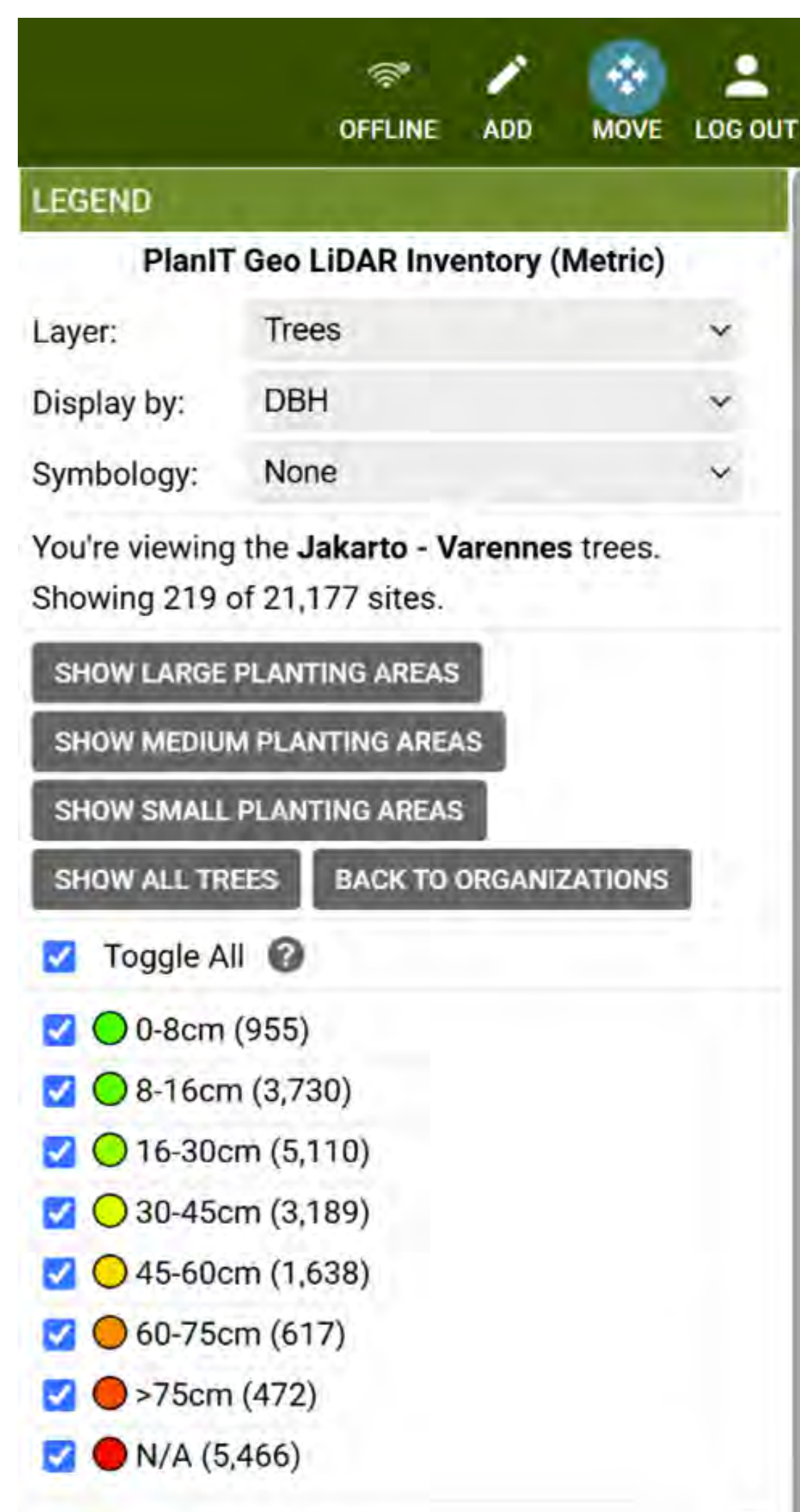


Step 3: Arborist Expertise

Our hybrid approach leverages the best from mobile mapping with the unmatched eyes of ISA Certified Arborists in-the-field to provide:

- Full 360° information on trees
- Health, decay, and risk assessments
- Detailed observations, defects, clearance requirements, growing space, maintenance recommendations
- High resolution photos, and more





OFFLINE ADD MOVE LOG OUT

LEGEND

PlanIT Geo LiDAR Inventory (Metric)

Layer: Trees

Display by: DBH

Symbology: None

You're viewing the **Jakarta - Varennes** trees.
Showing 219 of 21,177 sites.

SHOW LARGE PLANTING AREAS

SHOW MEDIUM PLANTING AREAS

SHOW SMALL PLANTING AREAS

SHOW ALL TREES BACK TO ORGANIZATIONS

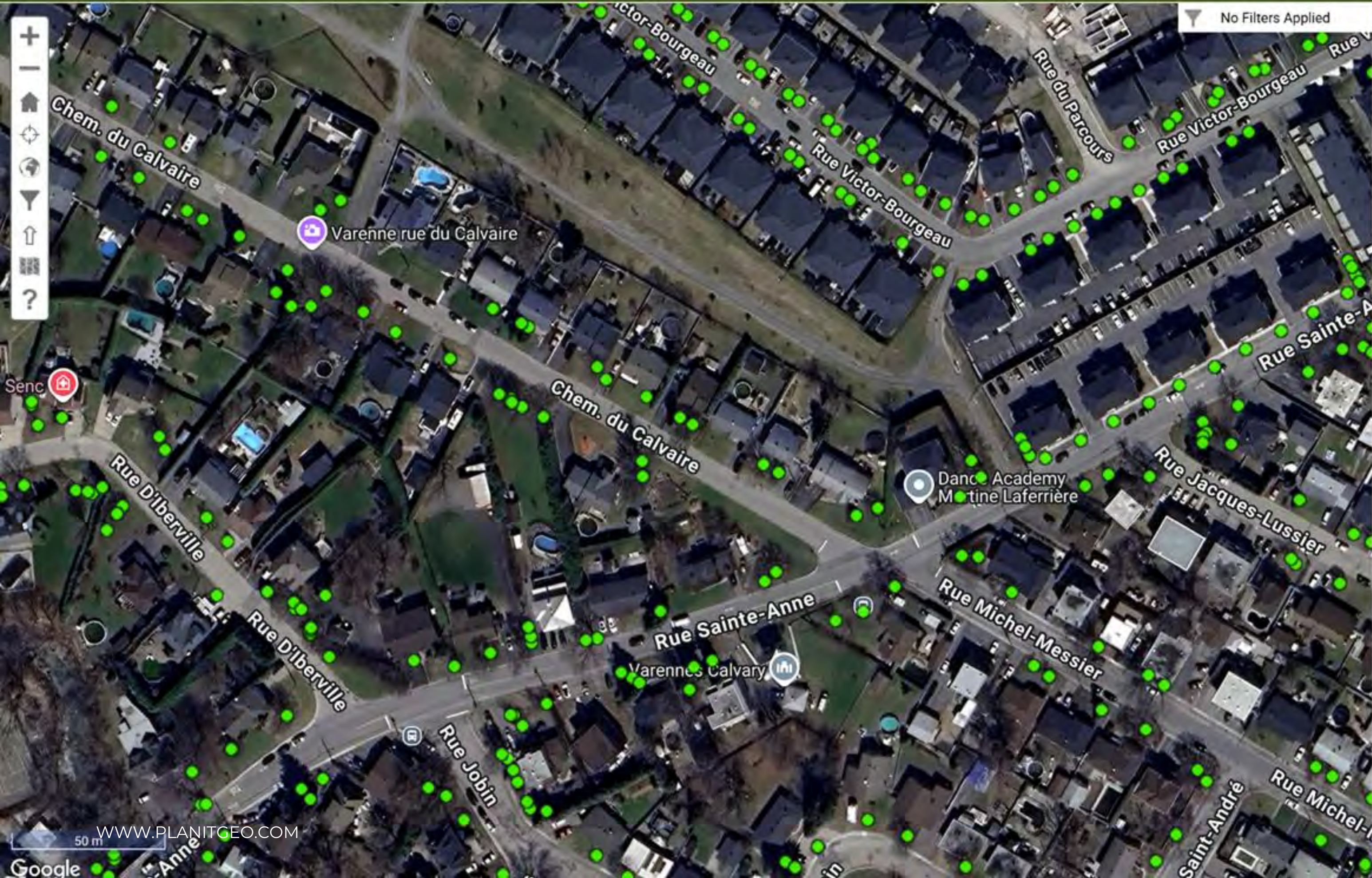
Toggle All ?

- 0-8cm (955)
- 8-16cm (3,730)
- 16-30cm (5,110)
- 30-45cm (3,189)
- 45-60cm (1,638)
- 60-75cm (617)
- >75cm (472)
- N/A (5,466)

Step 4: TreePlotter Integration

- Automated Initial Inventory + Arborist Expertise
- Data is uploaded into TreePlotter for “data enrichment”
 - Updates to existing inventories are also available
- Our Professional Services team provides configuration, add-on modules, TreeD viewer, training, and ongoing support
- Customer success account representative is assigned





No Filters Applied

LEGEND

PlanIT Geo LiDAR Inventory (Me

- Layer: Trees
- Display by: Status
- Symbology: None

Showing 254 of 21,177 sites.

BACK TO ORGANIZATIONS

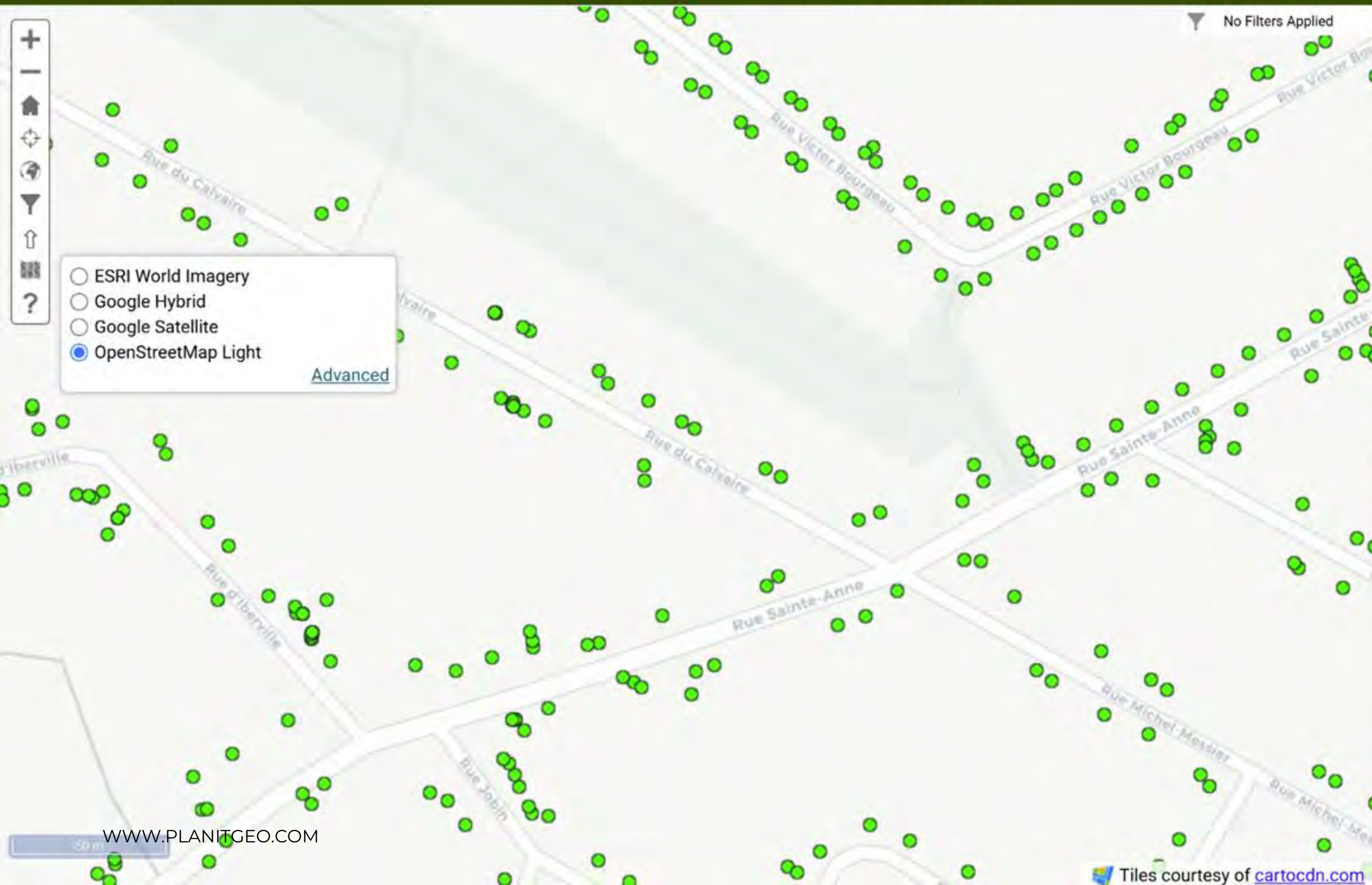
- Toggle All ?
- Alive (21,177)

Charts

Layers

- Trees
- ● Medium Planting Areas





ESRI World Imagery
 Google Hybrid
 Google Satellite
 OpenStreetMap Light

[Advanced](#)

No Filters Applied

LEGEND

PlanIT Geo LiDAR Inventory (Metric)

Layer:

Display by:

Symbology:

Showing 254 of 21,177 sites.

[BACK TO ORGANIZATIONS](#)

- Toggle All ?
- Alive (21,177)

Charts

Layers

- Trees
- Medium Planting Areas





No Filters Applied

- ESRI World Imagery
 - Google Hybrid
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 - OpenStreetMap Light
- [Advanced](#)

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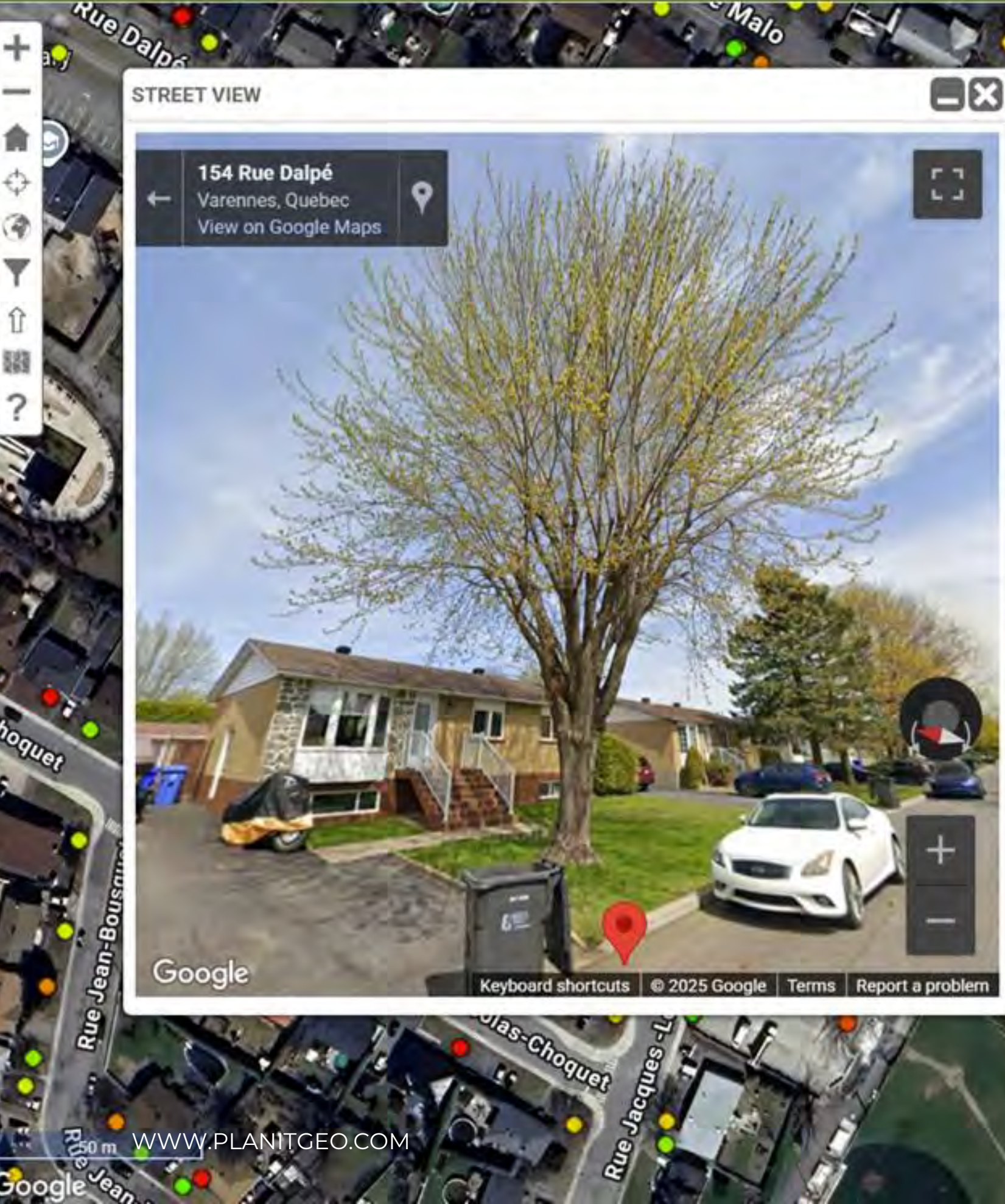
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Charts

Layers

- Trees
- ● Medium Planting Areas





STREET VIEW

154 Rue Dalpé
Varenes, Quebec
View on Google Maps

Google
Keyboard shortcuts © 2025 Google Terms Report a problem

Tree 8827

Tree	
Condition	Good
Risk Rating	Low
DBH [cm]	66.2275420581173
Address	163 Rue Dalpé
Common Name	Silver Maple

DETAILS INSPECT WRS
DATA TABLE STREET VIEW REPORT
SHARE

LEGEND

PlanIT Geo LiDAR Inventory (Metric)

Layer: Trees

Display by: DBH

Symbology: None

You're viewing the **Jakarta - Varenes** trees.
Showing 219 of 21,177 sites.

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 - 45-60cm (1,638)
 - 60-75cm (617)
 - >75cm (472)
 - N/A (5,466)

Charts

Layers



JAKAR TOWNS

15 30 45 60 75 90 105
32° NE

Cloud, Home, Location, Share, Location, Add

Filters Applied

Tree 8827

Tree	
Condition	Good
Risk Rating	Low
DBH [cm]	66.2275420581173
Address	163 Rue Dalpé
Common Name	Silver Maple

DETAILS INSPECT WRS

DATA TABLE STREET VIEW REPORT

SHARE

Parc du Pré-Vert

LEGEND

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- N/A (5,466)



Breaking Down the Urban Forestry Silo



Multi-Asset
(green + grey)

vs.

Green-Asset

Better management decisions

Incomplete insights hinder management

Budgetary efficiency

Urban Forestry department shoulders full cost

Better advocacy for green assets and their benefits

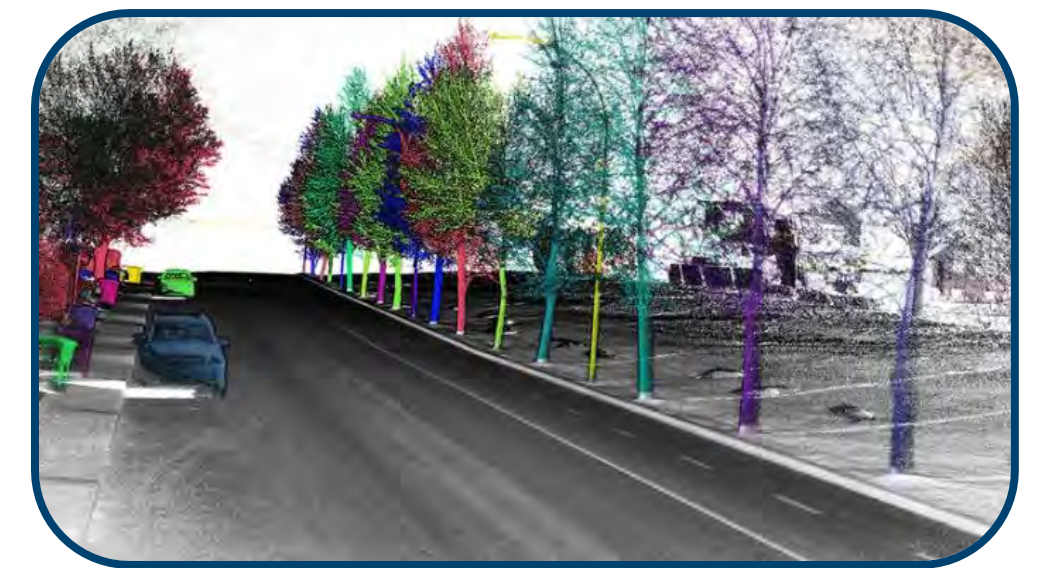
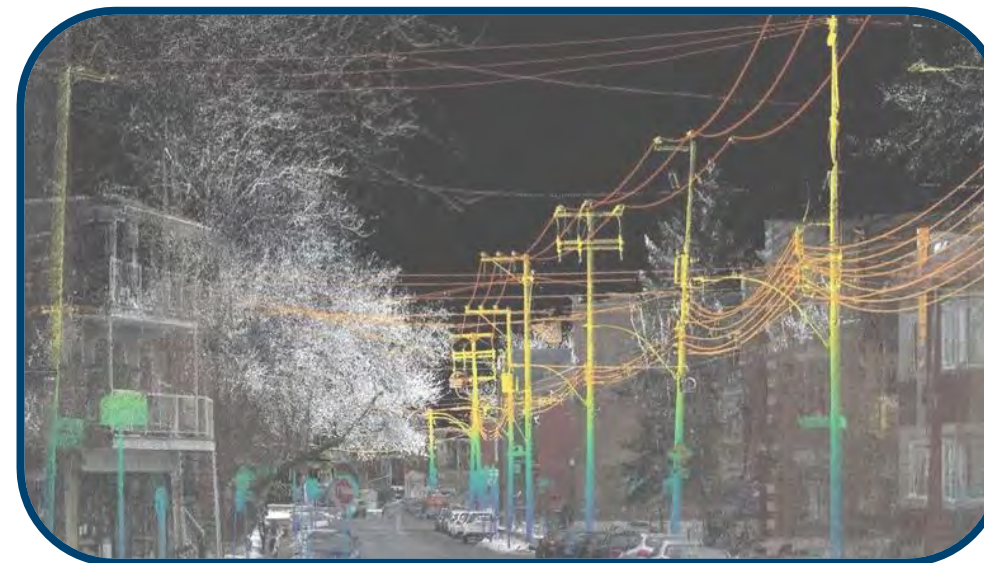
Green assets more often misunderstood by other depts as nuisance

More cross-city collaboration

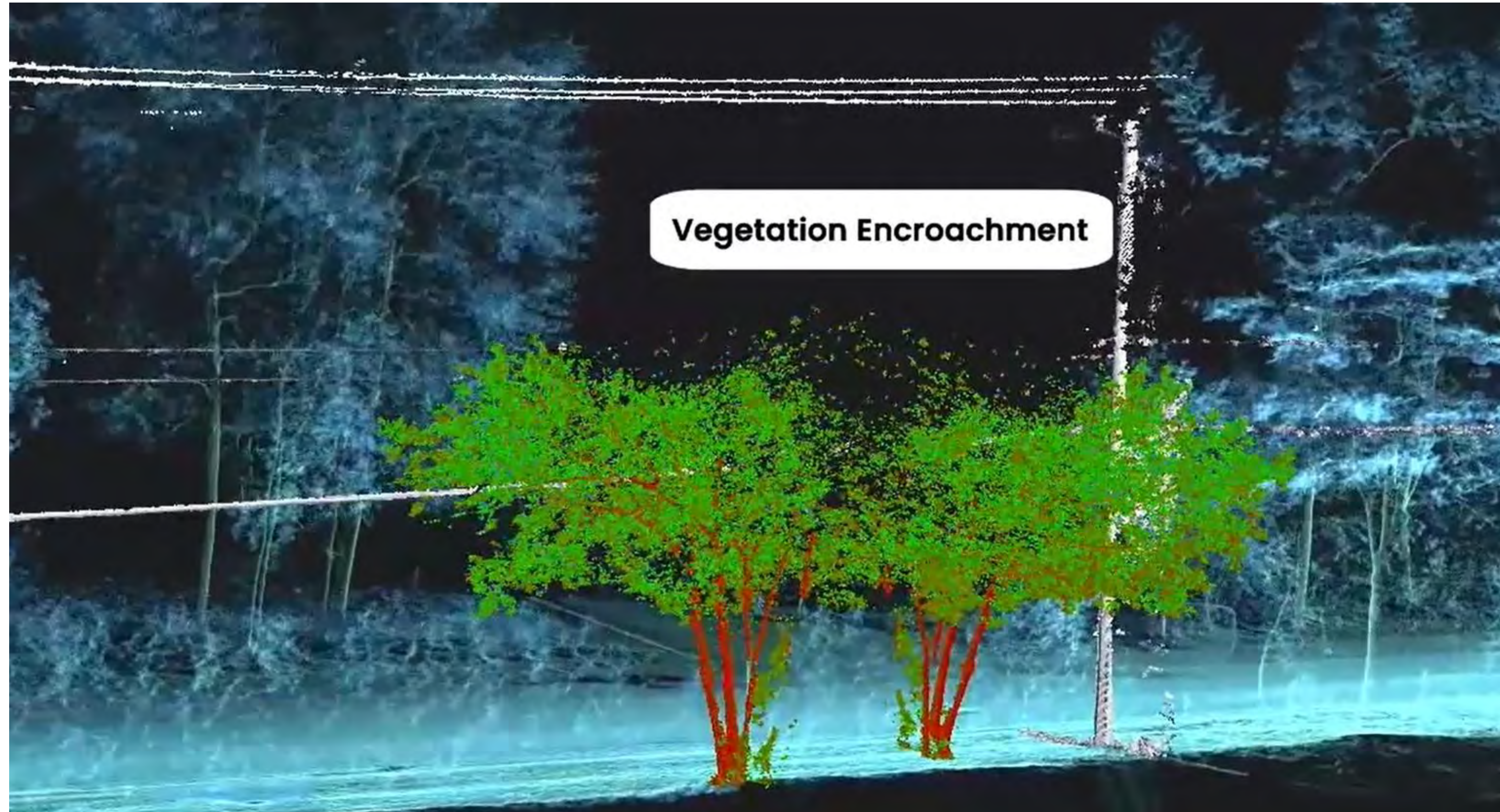
More siloed efforts

Our multi-asset model to mobile mapping unifies urban forestry with all city infrastructure.

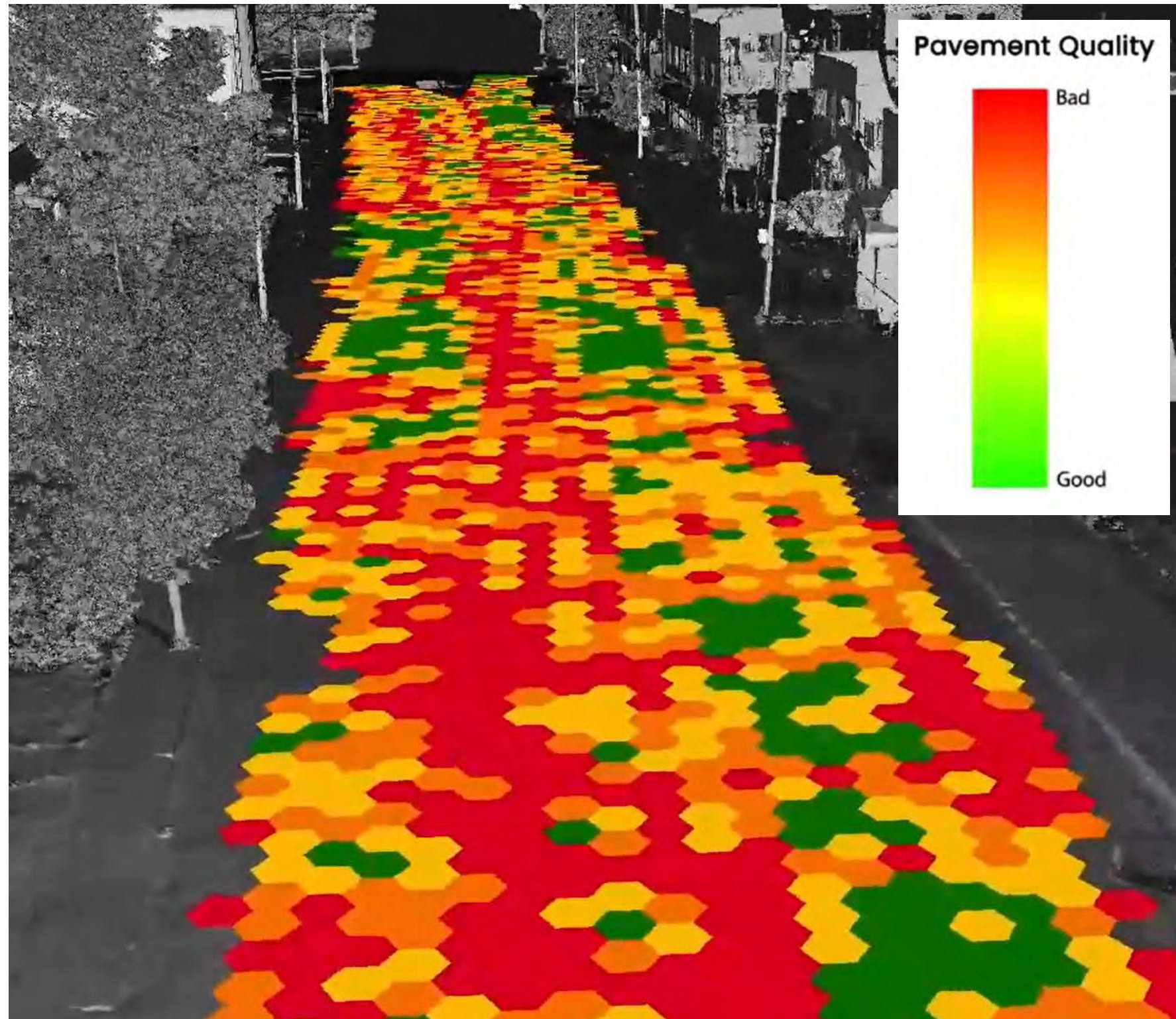
We offer the precision and analytics to collect detailed digital twins of cities across **both green and gray infrastructure** – all at once.



Utility Vegetation Management (UVM)



Multiple Uses: Cost Share Opportunities



Pavement Condition Assessment

- Paved surface quality
- Automate location of cracks, potholes, etc. and
- Re-scan as needed



Limitations

→ What do we know, and not know, is possible?

Known Unknowns

- Automated genus and species ID by region, size/age of tree, etc.
 - How about with smaller, newly planted trees?
- Remote (at your PC):
 - Genus and species ID
 - Acceptable health or condition ratings and maintenance recommendations
- Impact of dense stands, seasonality, and lighting conditions on machine learning
- Street-level imaging can't see through parked cars (obstructions) or the backside of trees
- Reliability of AI predicted tree risk, branch failure, decay, defects, and maintenance recommendations. It will improve, but we're not there today.



Conclusion: The Opportunity of Mobile LiDAR

Making smarter, faster urban forestry decisions - guiding deployment of expert arborists



Streamline Green Asset Management & Risk

Access high-resolution 360° imagery and 3D insights to remotely inspect tree health, canopy coverage, and risk zones



Reduce Field Time, Increase Impact

Cut down on manual site visits and redirect your team's time toward planning, policy, and proactive interventions



Keep Your Urban Forest Resilient

Monitor changes over time, assess storm or disease impact quickly, and prioritize maintenance based on real data



Engage Stakeholders with Clarity

Share accurate, visual records with councils, contractors, departments and the public to support funding, collaboration and, trust





PlanIT GeoTM
developers of TreePlotter

Thank you!



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866.256.1787



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alejandroespinosa@planitgeo.co
m



Website
www.PlanITGeo.com

