



Collaboration, Innovation and Resilience: Championing a Digital Generation

Brisbane, Australia 6-10 April

## Sustainable Management of the Road Corridor

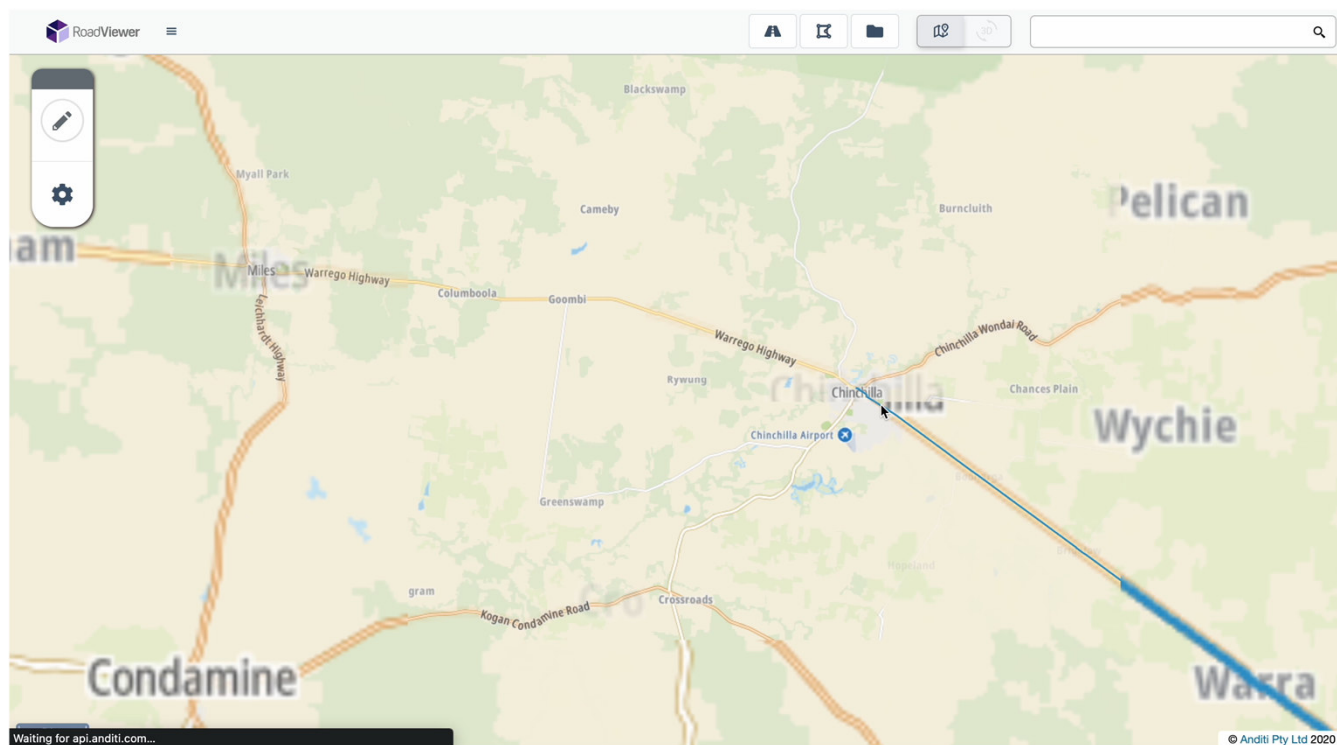
Addressing safety, assets, condition, and environment with a single mobile LiDAR and imagery survey capture



PLATINUM SPONSORS



## Road Safety (AiRAP) using LiDAR – Unrivalled Accuracy



- Main Roads Western Australia  
20,000km of roads safety rated.
- Traditionally the process has been  
done manually
- Understanding of the use of lidar &  
imagery allows safety analysis to  
be automated and give exact  
measurements, rather than best  
visual guess.
- Understanding lidar allows many  
more potential solutions.
- Accurate measurements need  
features identified.



## Assets

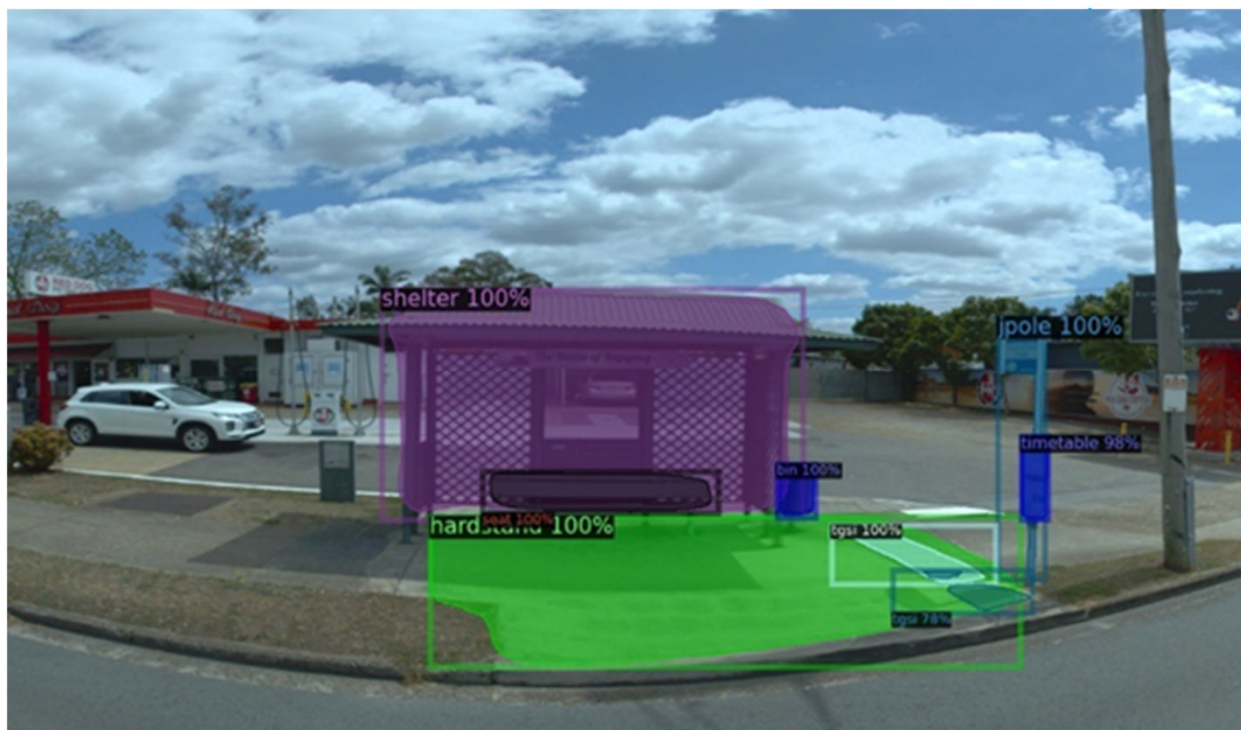
- Lane markings
- Road symbols
- Pavement Edge
- Median Types
- Barrier Types
- Poles
- Street Lights
- Street Signs
- Tree trunks
- Intersections
- Property Access Points
- Pedestrian Crossings
- Potholes
- Surface Cracking
- Slope

Important information for a  
lot of people





## Bus Stop Accessibility



- Same equipment - Automated detection of bus stop assets including shelters, signs, and TGSIs
- Calculate measurements of kerb heights, boarding point slope and dimensions
- Report on accessibility compliance for every bus stop
- Made available in web portal for additional desktop analysis

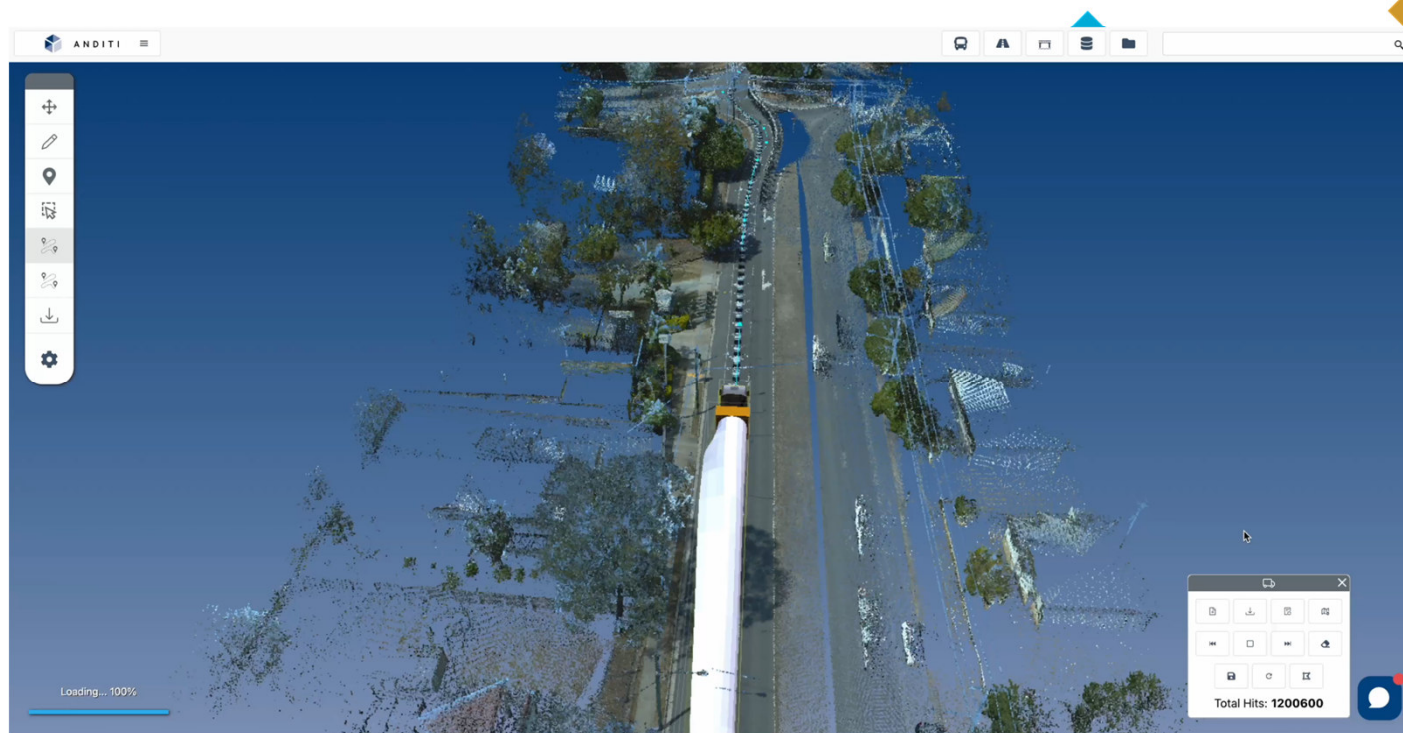
## Street Tree Planting Analysis



- Blacktown Council Urban Heat problem
- Need more trees without negatively affecting road safety
- Identify locations for roadside tree plantings
- Insert trees into point cloud
- Model impact on road shading and AiRAP Star Ratings

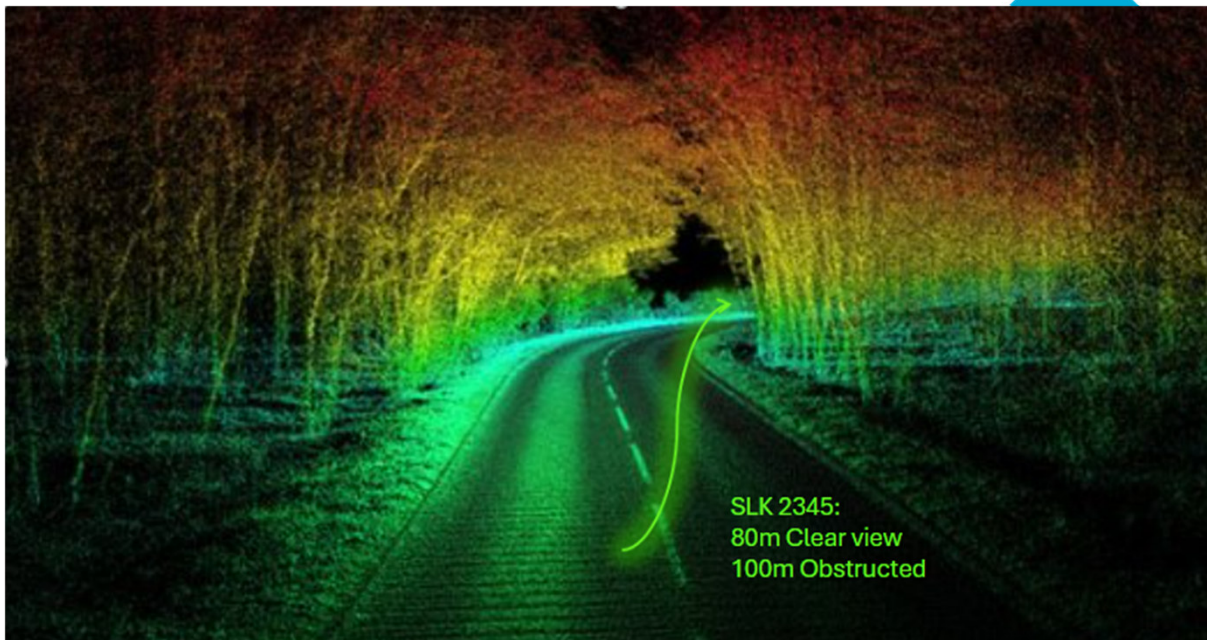


## Bridge Clearance and Route Modelling



- Ability to build vehicle model simply and drop into the point cloud – with dimensions, number of trailers, front/rear drive etc
- Create and edit journeys for oversized vehicles
- Ability to pause journey and view 360-degree imagery to examine areas of concern

## Resurfacing calculations & Sight Distance



- MRWA identified requirements early for resurfacing and driver sight distance modelling.
- Identifying pavement edge allows accurate estimation of chip seal or asphalt requirements
- Sight Distance traditionally done manually whilst driving or with design data.
- This method gives you both the accuracy of as-built road surface plus real-world integration of vegetation and structures.



## Environmental Assessment



- Identify and analyse road corridor trees and vegetation
- Base diameter, breast diameter, canopy area, structural root zone
- Biodiversity and habitat attributes, calculation of carbon storage
- Extrapolate carbon storage accurately to much larger area.



**Data is a high value resource.  
Vendors and Experts have an important role to play**

**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



1st relevant  
SDG

**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



2nd relevant  
SDG

**11** SUSTAINABLE CITIES  
AND COMMUNITIES



3rd relevant  
SDG

**SUSTAINABLE  
DEVELOPMENT GOALS**

International Federation of Surveyors supports the  
Sustainable Development Goals