

Afternoon all. I'm sure all of you have by now heard of lidar so I'm not going to bore you with what it is and how it works but rather have a look it's accuracy against known detection.

Thank You to Our Testing Partners

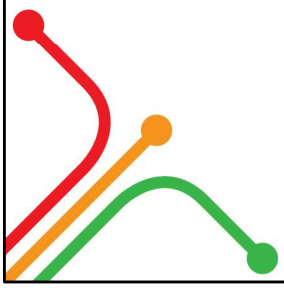
Tauranga City Council • Hamilton City Council • Auckland Transport

For the opportunity to trial and validate LiDAR technology on your live traffic infrastructure. The results in this presentation would not be possible without your support.



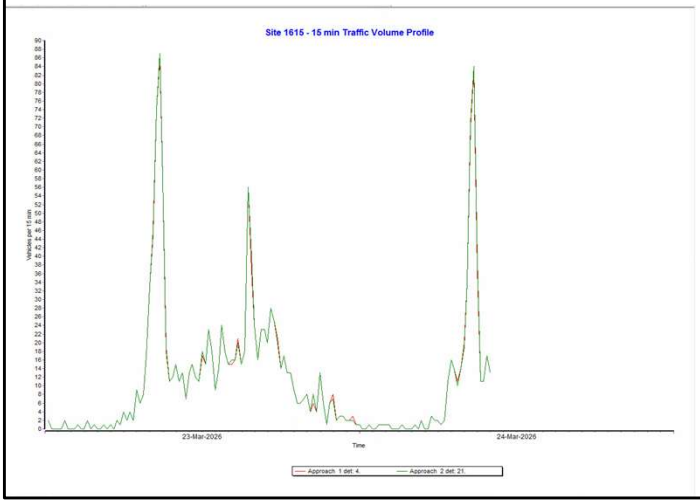
LiDAR Accuracy, Proven Against Ground Truth

Vehicle counting and degree-of-saturation results from live intersection testing — March 2026



One Question: Can We Trust LiDAR Accuracy?

24 Hr report: Single loop detector (red) vs its paired LiDAR-fed detector channel (green), This parallel logging underpins the data checks.

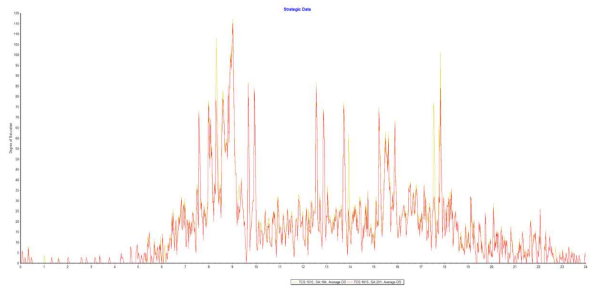


- **Vehicle counts: Counted vehicles from video footage as the ground-truth reference — not derived from any sensor being tested.**
- **2 approaches , 4 × 15-minute periods (1 hour per approach). LiDAR and SCATS ground-loop counts were logged at the same time as the video-verified truth.**
- **32 side-by-side counts in total (8 lanes × 4 time periods) — This formed the basis for the numbers on the next few slides.**
- **Degree of Saturation (DS): a full 24-hours of live SCATS data was compared to live LiDAR-derived Degree of Saturation across 4 lane/approach combinations,.**

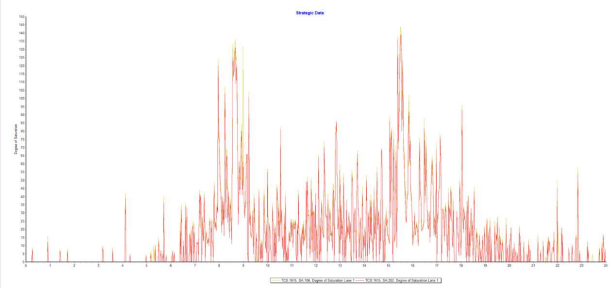
We wanted to know if the technology is accurate enough to be confidently deployed on a intersection. We set up some controls in the form of visual counts and documented data.
And I'm sure the results speak for themselves.

LiDAR Reproduces SCATS Degree of Saturation accurately, in Visual Lock-Step

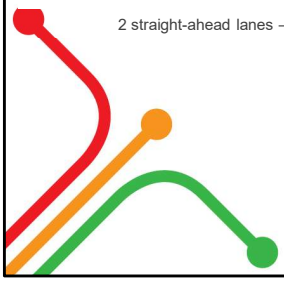
24-hour traces, same intersection — red = SCATS ground loops, yellow/green = LiDAR



2 straight-ahead lanes — average Degree of Saturation



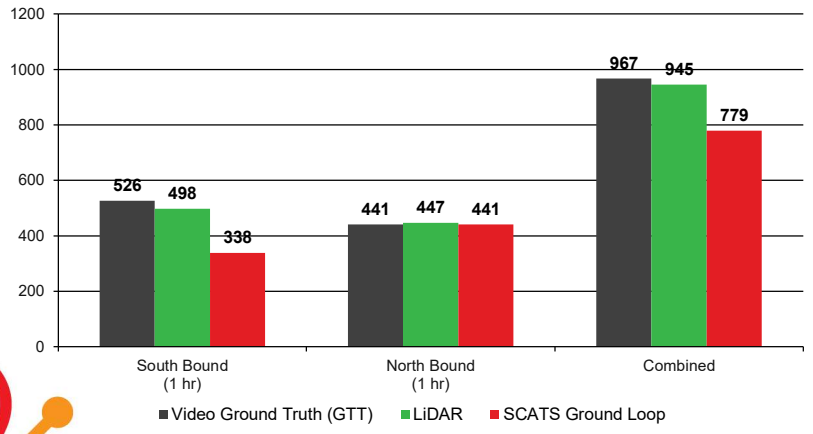
Right-turn lane — Degree of Saturation



- **Consistent across multiple test days; the client is comfortable deploying LiDAR at this location.**
- **Of Note is the LiDAR's small peaks above the loop trace in dense traffic, where it correctly separates tailgating vehicles that ground loops merge into a single count — a LiDAR advantage, not an error.**

We also ran a detailed report on the degree of saturation for lidar against loop inputs and results were outstanding.

LiDAR Vehicle Counts Match Video Ground Truth to Within 3%



On average, LiDAR's count every 15 minutes was within about 3 vehicles of what the video actually showed.

SCATS ground loops are shown for comparison — they counted far fewer vehicles overall.

LiDAR Is Proven Accurate Enough to Replace Ground Loops

97.7%

Combined vehicle-count accuracy vs video ground truth.

Lower counting error than SCATS ground loops (about 3 vehicles of error per 15 minutes, versus almost 13 for ground loops)

LiDAR-derived Degree of Saturation tracks SCATS loops in sync, confirmed on multiple days



Ready for Wider Deployment

Two independent tests, one consistent result: LiDAR matches trusted visual vehicle counts and mirrors SCATS Degree of Saturation, while cutting counting errors roughly five-fold compared with ground loops.

The technology is proven and ready to move from trial to wider rollout across further sites.



Feel free to have a chat with us at our display if you need more information.

Thank you

