

Dynamic Lanes in New Zealand

Whangaparāoa
Redoubt Road
Maioro Street



Introduction

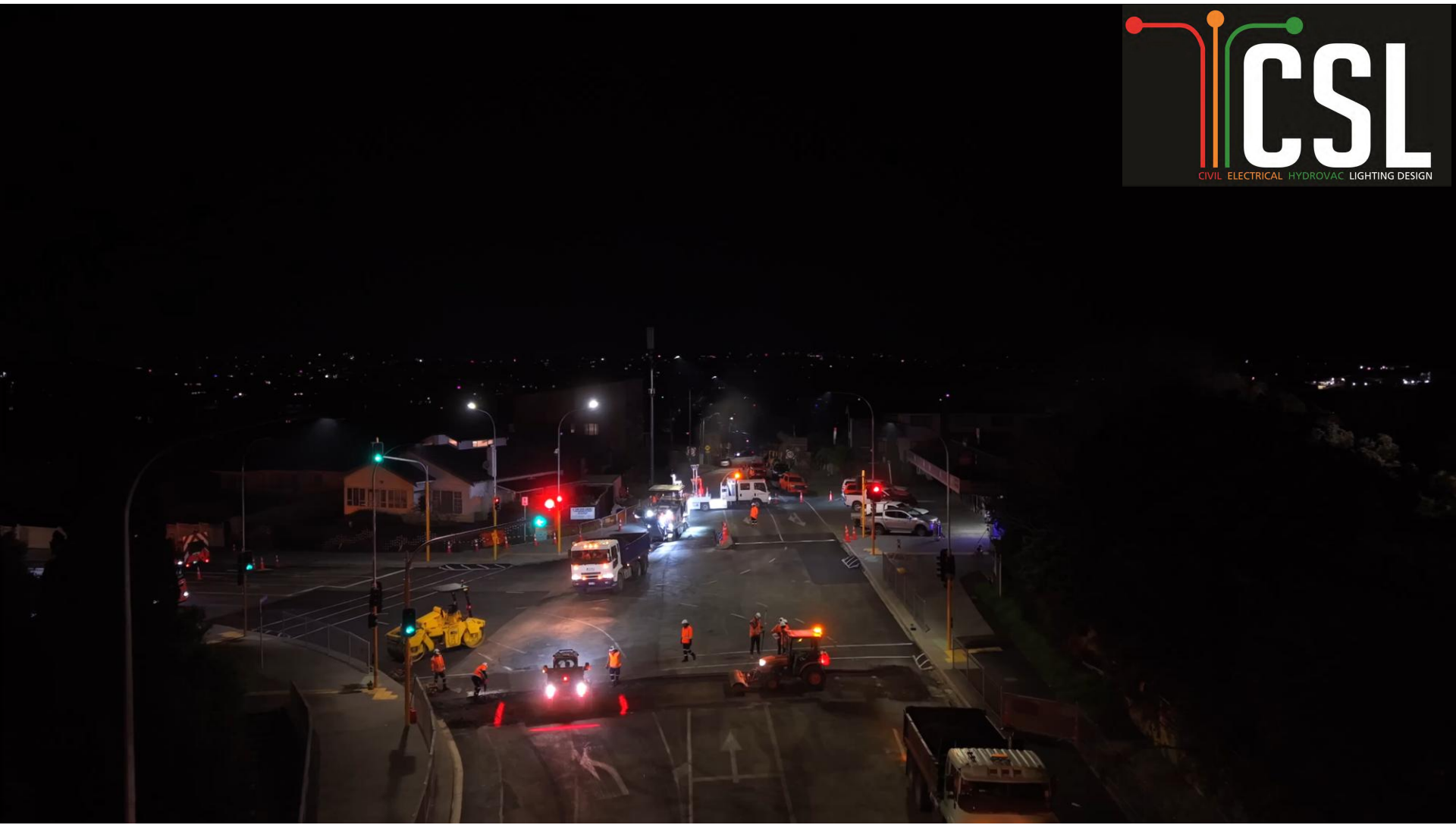


- CSL began in 2012
- In 2015, we expanded by winning the Auckland Field Service Device contracts.
- Today: 100+ strong, five branches across the North Island.
- Thought leaders in ITS and traffic signals
- Innovation

Today's Journey



- In 2017, CSL was engaged to help design the Whangaparāoa dynamic lane.
- Delivered all three dynamic lanes in New Zealand
 - Whangaparāoa,
 - Redoubt Road,
 - and Maioro Street.
- Today's journey:
 - Why dynamic lanes matter
 - Case studies
 - Lessons CSL has learned
 - Benefits
 - The Road Ahead



Why Dynamic Lanes



- Congestion
- Auckland losing M\$100's per annum
- Build wider lanes
- Dynamic lanes optimise existing roads with smart tech.

Whangaparāoa



- Problem: Single corridor, heavy tidal congestion.
- Solution: 1.4 km dynamic lane, LED studs, overhead signs.
- Benefits:
 - **Cost:** \$3m Dynamic Lanes vs \$20m widening.
 - **Cheaper:** Whangaparāoa widening ~\$20m vs dynamic lanes ~\$3m.
 - **Faster:** Months of work vs years of construction.
 - **Less disruptive:** Night works, minimal property impacts.
 - **Ongoing Savings** (per annum):
 - 83,500 hrs travel time
 - 845 tonnes CO₂ emissions
 - 267,200 litres fuel, cuts.

Redoubt Road



- Problem: Chronic eastbound congestion, limited space.
- Solution: 750m dynamic lane, overhead signals.
- Outcomes: Peak travel time savings of up to by 6 minutes - approx. 54% saving
- Annual benefit est. \$1m/annum - \$17m over life of project. (cost was \$3M)
- Able to extend operating window for even greater savings

Maioro Street



- Problem: Needed peak flow + bus priority.
- Solution: Dynamic bus + general traffic lanes.
- Outcomes: Faster buses, smoother peak flows.
- Proof of multi-modal flexibility.

Benefits of each Project



- Whangaparāoa:
 - 83,500 hours saved annually,
 - 845 tonnes of CO₂ avoided,
 - 267,200 litres of fuel saved.
- Redoubt Road:
 - Six minutes saved per trip,
 - \$1 million annual benefit.
- Maioro Street (to soon to get numbers):
 - Improved bus times,
 - better traffic flow

Lessons Learned



- Get the right contractor to own the detail.
- Engage the community.
- Make it intuitive.
- Stay flexible.
- Plan for maintenance.

Overall benefits



Ease congestion – but also:

- Cost Savings:
- Speed of Delivery:
- Environmental Gains:
- Safety Improvements:

The Road Ahead



- Wayne Brown:
 - Over \$600 million is proposed for investment in network optimisation, including dynamic lanes
- AT identified ~14 candidate corridors.

Closing



- Dynamic lanes deliver faster, cheaper, cleaner results.
- Proven: Whangaparāoa, Redoubt, Maioro.
- Smarter beats bigger
- Call CSL to get:
 - a cost effective smart system,
 - a few illuminated studs, and
 - a quicker trip home