

South Australia Update

SCATS Management User Group (SMUG)
Conference 2026



Government of South Australia
Department for Infrastructure
and Transport

Build.
Move.
Connect.

Build. Move. Connect.

by Jaylene Ware

Wirangu, Kokatha and Antakirinja
Matu-Yankunytjatjara Artist

We acknowledge the

Gadigal

peoples as the Traditional Custodians of the land we meet on today and recognise their continuing connection to land and waters.

We pay our respects to the diversity of cultures, significance of contributions and to Elders past, present and emerging.



Government of South Australia

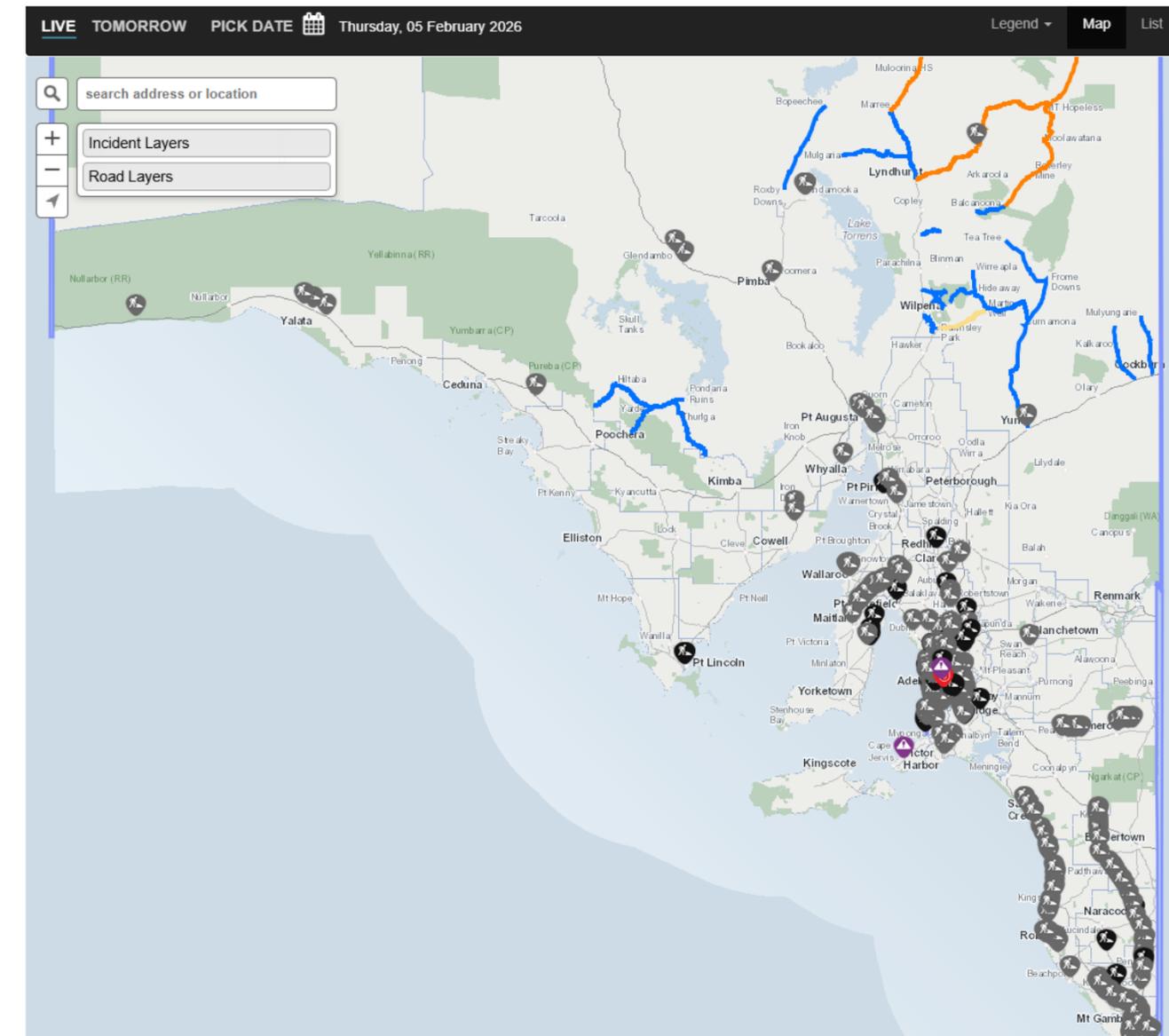
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Overview

- The current state of Adelaide & South Australia
 - Key infrastructure projects in South Australia
- Current pain points
- Innovations being working on

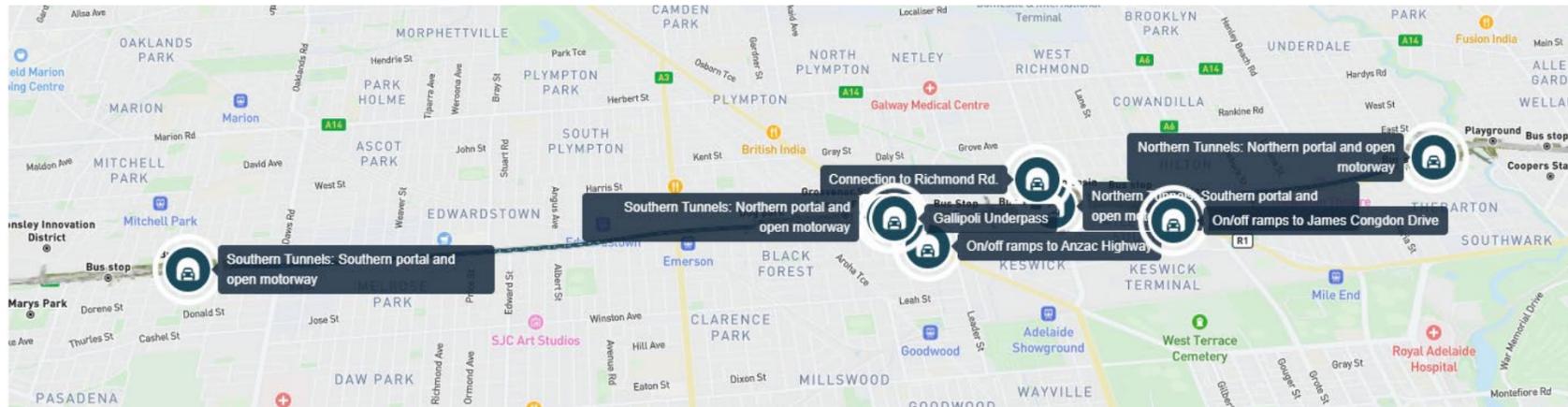


The current state of Adelaide & South Australia

- SCATS overview:
 - 988 SCATS sites (Intersections & PACs)
 - Exploring SCATS Cornerstone as a replacement for existing SCATS Graphics
- Personality:
 - Deliver ~100 personalities each year
 - ~30 new sites added last year (50% of new sites were PACs/BPACs)
- Traffic Systems Team: 5 staff members, covering
 - SCATS Operations,
 - Personality
 - STREAMS configurations,
 - Traffic signal design review
 - Stakeholder support
 - Correspondence

Key infrastructure projects in South Australia

- T2D Motorway: Central motorway with surface roads both sides
 - Extra-wide intersection (~130m conflicting area) & motorway interchange interface



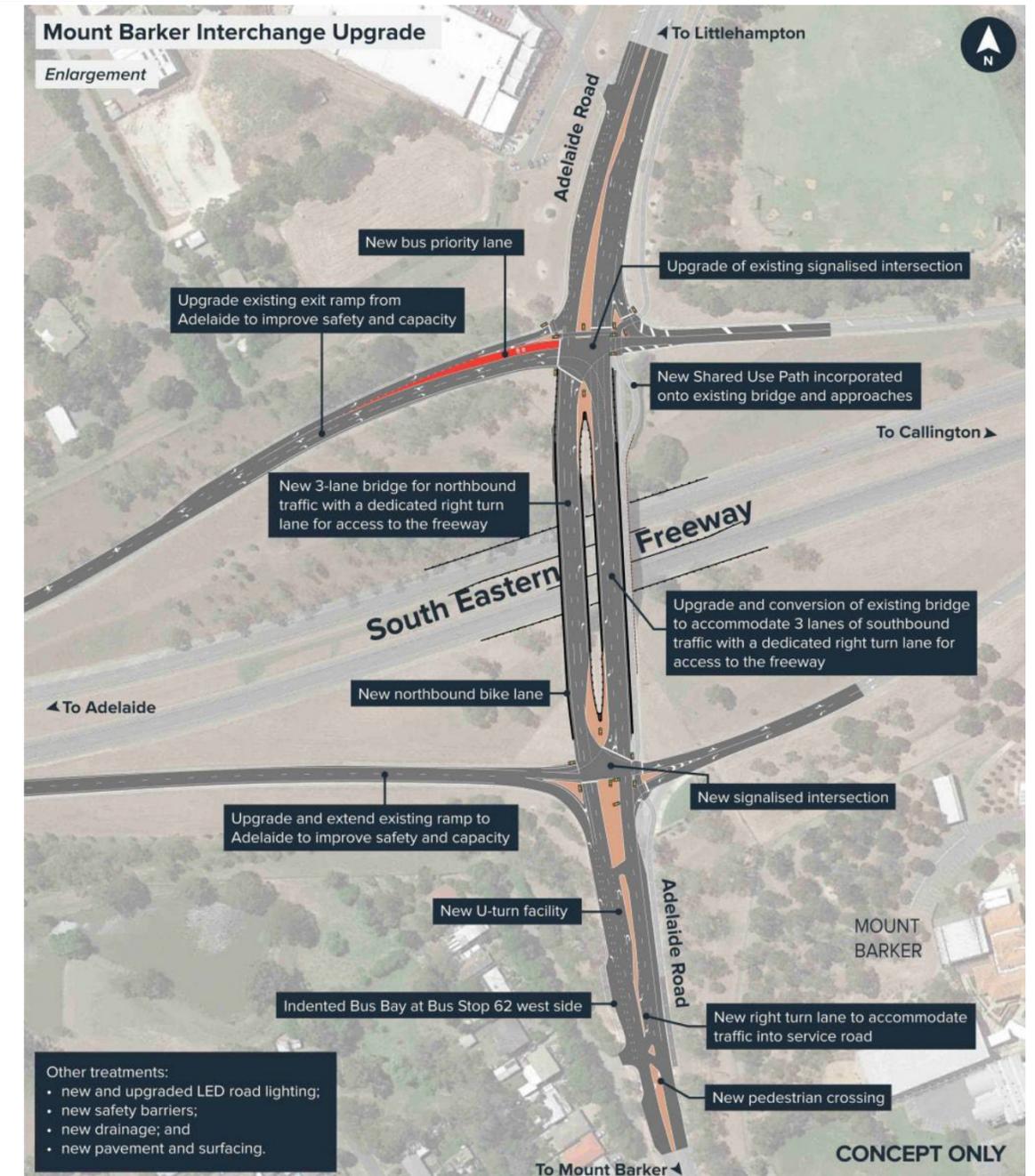
Key infrastructure projects in South Australia

- Tram grade separation: traffic signal integration with tram signal at the depot
 - Control both road traffic signals and tram T lights
 - Requires handshake with the tram signal controller



Key infrastructure projects in South Australia

- Freeway interchange upgrade
 - Ultra-wide intersection beyond the reach of a single controller
 - Designed as 2 intersections to maintain signal control coverage

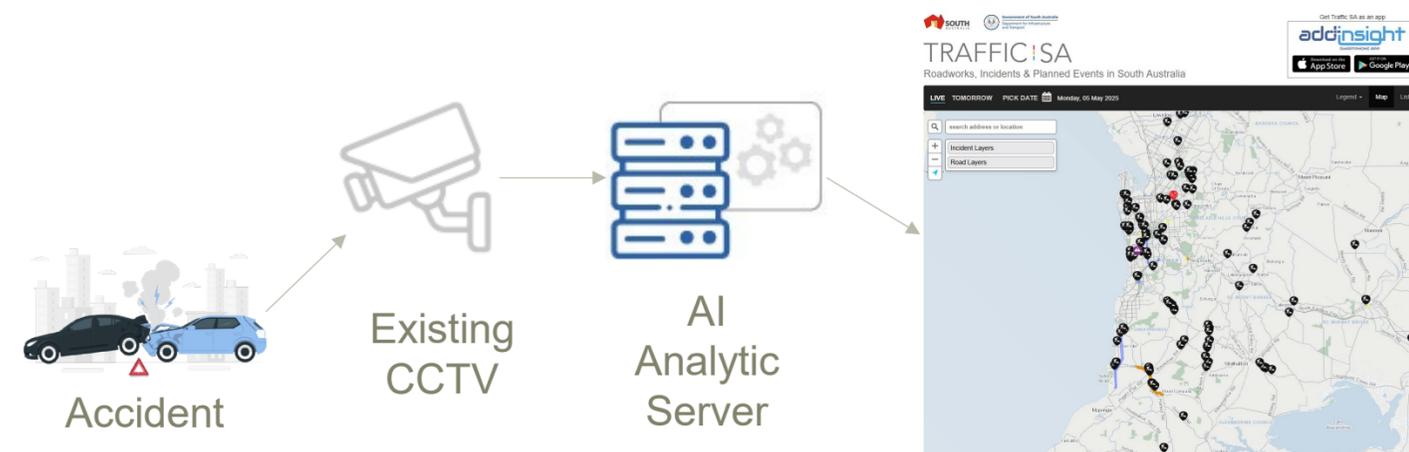


Current pain points

- Operations at capacity – Key challenges:
 - Extended delays due to high demand
 - Turn-lane overflows during peak periods
 - Increasing request for fully-controlled right-turn phases
 - Queue spillback causing intersection blockages
 - Illegal U-turn occurring at the intersection
- Active Transport – Key challenges:
 - Inadequate walk time for high pedestrian numbers
 - Cyclist seeking shorter wait times (targeting 30-45s on major arterials or freight routes)
 - Pedestrians and cyclists triggering a phase but leaving, resulting in wasted green walk time
 - Increasing requests for fully protected pedestrian phases at intersections

Innovations being working on

- Adaptive green walk signals for a large group
- Intersection clearance & green time reallocation
- Right Turn Bay Overflow Detection & Intervention
- Cyclist Detection & Advanced Demand



Innovation: Adaptive green walk signals for a large group

- Issues
 - Inadequate crossing time for large groups of pedestrians cause illegal movements and increasing accident risks
 - Inefficient flow for both vehicle and pedestrian traffic
- Solutions
 - Deploy AI based detector to quantify pedestrian group size in real time
 - Integrate with traffic signal controller to automatically extend the walk signals



Adaptive green walk
based on no. of
pedestrians



Innovation: Intersection clearance & green time reallocation

- Issues
 - Wasted green time on the blocked approach
 - Greater risk of secondary collision and driver frustration
 - Increased congestion and travel time
- Solutions
 - Deploy AI based detector to identify queue spillbacks on exit legs
 - Integrate with traffic signal controller to reallocate green time to unblocked approaches

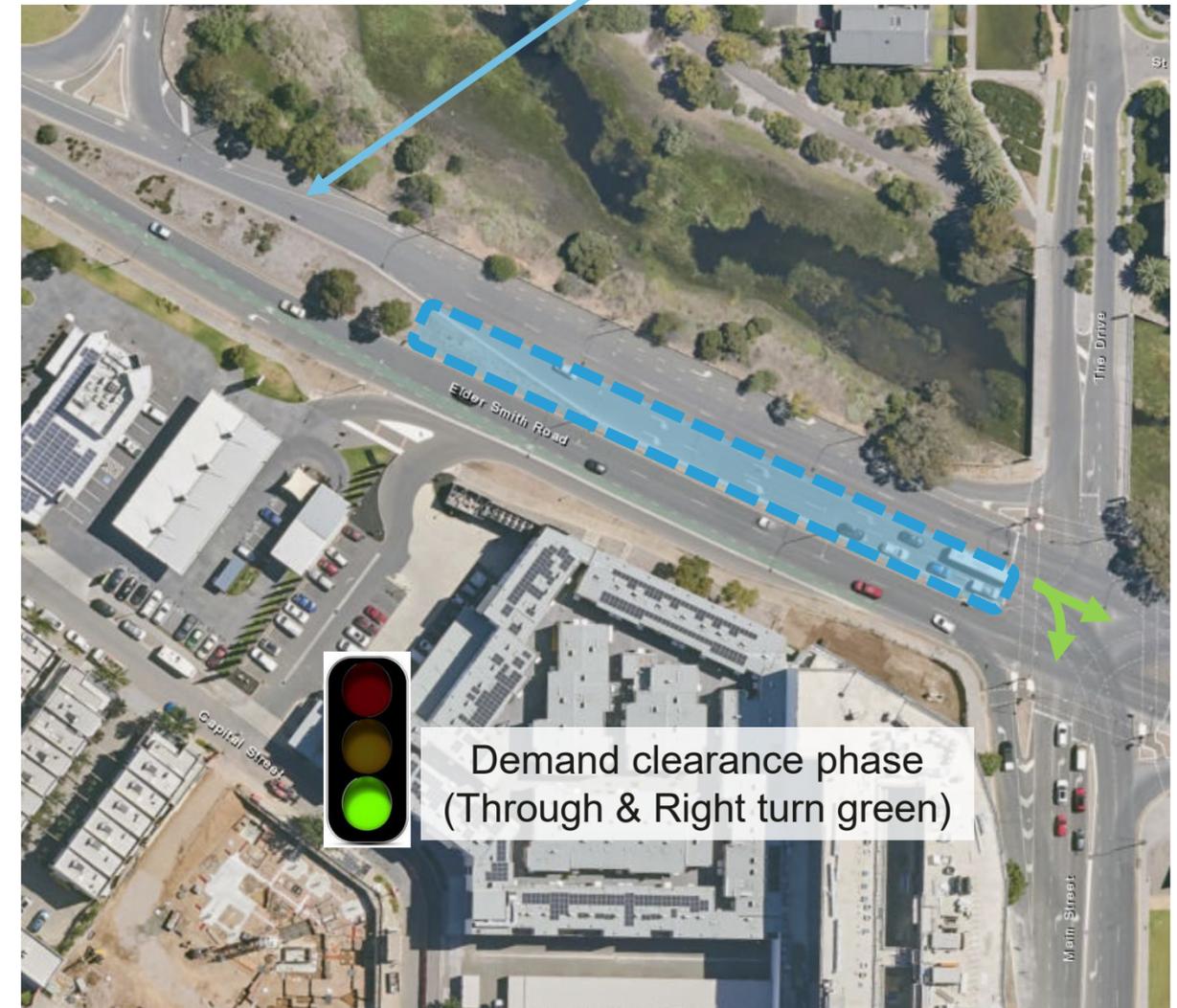


Innovation: Right Turn Bay Overflow Detection & Intervention

- Issues
 - Insufficient right turn storage causing queue spillbacks to the through lane
 - High risk of rear end collisions & reduced intersection capacity
- Solutions
 - Deploy AI based detector to detect right turn queue overflow
 - Integrate with traffic signal controller to trigger a clearance phase when overflow is detected

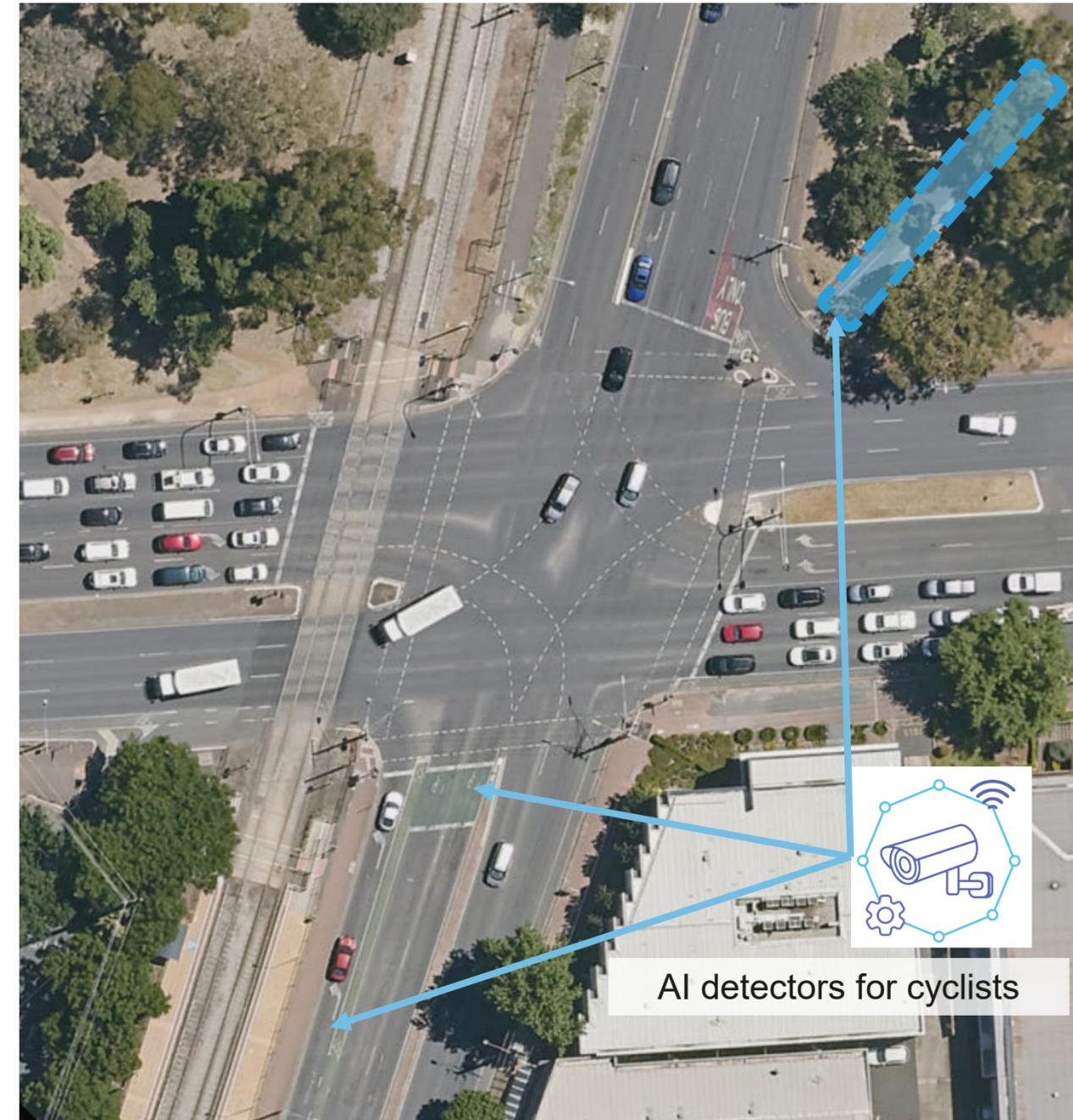


AI detectors on the right turn bay overflow blocking the single lane



Innovation: Cyclist Detection & Advanced Demand

- Issues
 - Delayed or missed signal phases for cyclists.
 - Increased likelihood of red light running or unsafe crossings.
 - Reduced cycling comfort and network attractiveness.
- Solutions
 - Deploy AI based camera to detect cyclists and classify their intended direction of travel and /or their presence/absence after the demand is registered.
 - Integrate with traffic signal controller to extend or trigger cyclist phases before the cyclist reaches the intersection.



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