Submission No 18

INQUIRY INTO CURRENT AND FUTURE PUBLIC TRANSPORT NEEDS IN WESTERN SYDNEY

Organisation: Infrastructure Technology Solutions Group

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Submission to Parliamentary Inquiry into Public Transport

About Us

Infrastructure Technology Solutions Group (ITSG) was formed in 2021 to service the growing global infrastructure and energy markets. In particular, ITSG provides access to leading edge technology suitable for the mass transit and energy markets. It is part of the Royale Group which consults and manages transportation and property development projects across Australia.

ITSG is currently marketing an exciting new form of medium volume public transport, sometimes referred to as a "Trackless Tram" or Digital rail Rapid Transit (DRT). We welcome the opportunity to provide this submission to the Parliamentary Inquiry into Current and Future Public Transport Needs for Western Sydney.

Partnerships

To deliver the solutions required by the market, ITSG has formed relationships with a number of the world's leading firms operating in the Infrastructure sector:

- Shanghai Electric – delivering world leading guidance system technology
- CRRC – the world's largest rolling stock manufacturer.

Digital Rail Transit (DRT) now in commercial service in Lingang, Shanghai, China

The DRT

The DRT is a new type of low impact, intelligent medium volume mass transit vehicle, utilising digital magnetic markers or "nails" to guide a vehicle around a virtual track, replacing traditional "iron in

the road" rail. Magnetic tags embedded about one metre apart along the route are able to guide the rubber-tyred vehicles (similar to trams) around a virtual track. Construction is relatively quick, with minimal impact on communities. It is also very cost effective when compared with light rail. Importantly, the ride quality is similar to a light rail vehicle.

Key Facts & Figures

- Length – 30.5 metres
- Width – 2.5 metres
- Height – 3.6 metres
- Entrance Height – 330mm
- Low Floor Height – 350mm
- Door – Unilateral 1 pair, opening degree 1.6 metres
- Axles = 8 for a three-carriage vehicle
- Axle Load: 7 tonnes
- Max. Safe Operating Speed: 70km/hr
- Number of seats: 56
- Maximum Passenger Capacity (8 people/sq m): 302
- Hybrid-Hydrogen Powered Vehicle capability
- Bio-directional.

Advantages of the DRT

- Construction: Utilising an existing road network, a service can be realised with low cost, low impact construction and long life cycle. Vehicles can be assembled in Australia or fully imported (see image below from CRRC's factory in Nanjing)
- Efficiency: With the use of a dedicated lane (ideally), we are able to set the tidal function, providing convenient and attractive public transport, while efficiently moving large volumes of passengers. The vehicle can also move in traffic, if required
- Zero emissions: Our zero emission DRT vehicles can be powered using a hybrid-hydrogen power source or on-board super capacitor batteries, with recharging at station platforms
- Precision: The DRT can deliver high-precision positioning and guidance, to a centimetre-level control trajectory, and centimetre-level vehicle real-time positioning, maximizing the utilisation of road resources and assisting with passenger egress
- Value Capture: As a medium volume public transport option, this technology has the capability to attract commercial and residential commuters. Platforms and stations are architecturally designed so as to enhance local communities.

An exhibition of this technology, under the auspices of the Sustainable Built Environment National Research Centre and Curtin University, is planned for late 2023 in the City of Stirling, Perth, WA.

The Future

The DRT has been successfully operating for the past three years in the Chinese City of Lingang, Shanghai, with several hundred thousand passengers already using the service.

A new, zero emission trackless tram, which is being shipped to Australia later this year, has been undergoing a series of tests in China as part of a process to have it certified for use on Australian roads. The Digital rail Rapid Transit (DRT) vehicle has been built by leading rail industry manufacturer CRRC and was being trialled on a track at its factory in Nanjing.

A delegation of officials from the City of Stirling and Curtin University in Western Australia was on hand to witness some of the trials, carried out by leading Australian assessor, Tiger Spider.

Under the City of Stirling's vision, Trackless Trams would extend 7km from Glendalough Station to the iconic Scarborough Beach to offer contemporary, sustainable transport that's less disruptive and more cost effective to build while retaining the benefits of light rail.

ITSG hosted the delegation which had an opportunity to ride on the vehicle as it was taken through a series of slow speed turns and related manoeuvres. The parties then met to discuss plans to bring the vehicle to Australia later this year for further demonstrations and a major conference (in November) to discuss the emergence of this new form of mid-tier public transportation. The Study Tour had the opportunity to experience a ride on the DRT, which is now in its third year of operation, in Shanghai's satellite city of Lingang – a new area designed to be a City of the Future.

ITSG welcomes the opportunity to provide a more detailed briefing to the Inquiry, if desired.

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