Submission No 27

CRITICAL TRANSPORT INFRASTRUCTURE SUPPORTING THE WESTERN SYDNEY INTERNATIONAL AIRPORT AND WESTERN SYDNEY AEROTROPOLIS

Organisation: EcoTransit Sydney

Date Received: 31 March 2024

EcoTransit Sydney

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31 March 2024

Lynda Voltz MP
Chair
Legislative Assembly Committee on Transport and Infrastructure
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EcoTransit submission for NSW Parliament Inquiry into Critical transport infrastructure supporting the Western Sydney International Airport and Western Sydney Aerotropolis

Dear Legislative Assembly Committee on Transport and Infrastructure,

EcoTransit Sydney thanks the Legislative Assembly Committee on Transport and Infrastructure for the opportunity to participate in the Inquiry into Critical transport infrastructure supporting the Western Sydney International Airport and Western Sydney Aerotropolis.

As one of Sydney's longstanding public and active transport advocacy groups, we bring to the attention of the Inquiry the following key areas of attention for the consideration of the Committee regarding transport supporting Western Sydney Airport and the Aerotropolis:

- The highest priority of extending the Sydney Trains Network connections especially the South West Rail Link from Leppington to Western Sydney Airport (International Airport Terminal).
- The need for rail on Western Sydney Airport line to have capacity for full 8 carriage train services.
- The need for a standardised single-deck rail fleet as part of introduction of integrated Tram-Trains.
- The lack of information justifying Sydney Metro for Western Sydney Airport from St Marys and from Glenfield arising from the non-publication of the business case.

Commuters from South West Sydney (such as Fairfield, Liverpool, and Campbelltown) are in relatively close geographic proximity of the Western Sydney Airport yet have to travel indirectly via St Marys for rail services to reach the Aerotropolis precinct. The lack of any direct Sydney Trains from Leppington to Western Sydney Airport will encourage motor vehicle dependency in Western and South West Sydney.

Extending the Sydney Trains Network from Leppington to Western Sydney Airport (which also enables direct rail connections to Sydney Airport, Central Station, and other Sydney Trains stations) and the introduction of Tram-Trams in Western Sydney (providing additional direct rail connections between Parramatta/Bankstown/Liverpool and the Western Sydney Airport/Aerotropolis) is urgently needed to reduce motor vehicle dependency in Western and South West Sydney.

EcoTransit would like to request the opportunity to give evidence at an Inquiry hearing to provide more information about our transport proposals for Western Sydney Airport and the Aerotropolis.

Please contact Roydon Ng via email Doherty via email	or	or and regarding this EcoTransit submission	d Matthew on.
Yours Sincerely,			
Roydon Ng and Matthew Doherty On behalf of EcoTransit Sydney			



EcoTransit Sydney

Advocating for better public and active transport in NSW

www.EcoTransit.org.au

Submission for NSW Parliament Inquiry into Critical transport infrastructure supporting the Western Sydney International Airport and Western Sydney Aerotropolis

March 2024

Roydon Ng and Matthew Doherty

This is a joint submission of EcoTransit Sydney (ETS) and the "Fix Liverpool Transport" campaign of the Restore T2 Inner West Line (Liverpool via Regents Park) community action group. For more information about the Fix Liverpool Transport campaign, please visit www.liverpooltransport.info

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EcoTransit holds the view that the business case for Sydney Metro – Western Sydney Airport line project Stage 1 (from St Marys to Western Sydney Airport) and Stage 2 (from Glenfield to Aerotropolis) is NOT justified.

EcoTransit supports rail for Western Sydney Airport and Aerotropolis to be delivered through an expansion of the Sydney Trains Network with capacity upgrades achievable for a fraction of the cost of Sydney Metro projects.

What is EcoTransit?



EcoTransit is transport that supports a sustainable economy and environment. The less resources used by the transport sector, the more efficient our economy is, and the less damage is done to the environment.

Public transport, walking and cycling fit these criteria. Urban freeway development that entrenches prolific car use does not support **EcoTransit** based economies and cities.

EcoTransit is a public transport advocacy group operating out of Sydney, but with a focus on all regional and rural parts of NSW that need better public transport. EcoTransit is a not-for-profit organisation made up of volunteers dedicated to the promotion of EcoTransit development.

EcoTransit advocates improving the local environment of towns, suburbs, and cities in NSW, by shifting transport from invasive modes like the private motor car that produce high levels of air, noise, and water pollution to the less polluting public transport modes.

EcoTransit is dedicated to the preservation of NSW's natural environment and heritage areas.

EcoTransit members are transport planning consultants, academics, trainspotters, bus drivers, commuters, cyclists, engineers, pedestrians, and combinations of all of the above.

EcoTransit has most recently submitted and has given evidence at the NSW Legislative Council Inquiry into the Current and future public transport needs in Western Sydney (Portfolio Committee 6 – Transport and the Arts) in 2023.

The **EcoTransit** submission for the Inquiry into Current and future public transport needs in Western Sydney and additional information tendered to the Inquiry is published at:

https://www.parliament.nsw.gov.au/lcdocs/submissions/82000/0048%20EcoTransit%20Sydney.pdf https://www.parliament.nsw.gov.au/lcdocs/other/18819/Additional%20information%20to%20the%20committee,%20EcoTransit,%20tendered%20by%20Mr%20Colin%20Schroeder.pdf

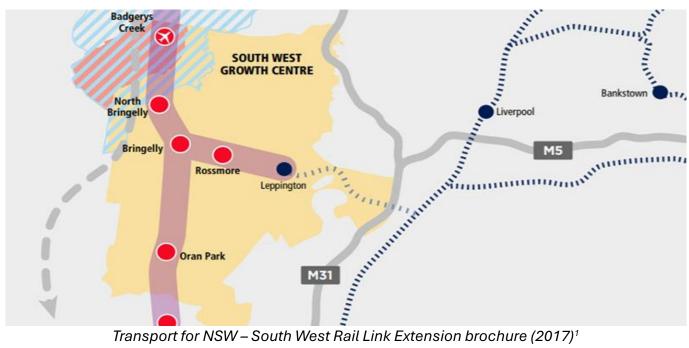
The Legislative Assembly Committee on Transport and Infrastructure is invited to visit the **EcoTransit** website (www.ecotransit.org.au) for further details and information about our public transport and active transport proposals, advocacy, and position papers.

Extend the South West Rail Link from Leppington to Western Sydney Airport

EcoTransit supports the Australian and NSW Government commitment to provide rail access to the Western Sydney International (Nancy-Bird Walton) Airport in Badgerys Creek on its opening day in 2026. The Western Parkland City is an important growth centre, and its development is hindered by a lack of holistic public transport connections with Greater Sydney.

EcoTransit supports the extension of the existing South West Rail Link (from Leppington) to Western Sydney International (Nancy-Bird Walton) Airport as part of the Sydney Trains Network (heavy rail) as the highest priority, and least cost-intensive (fiscally and environmentally), option for providing public transport into the Western Parkland City.

EcoTransit supports future expansion of heavy rail in the Western Parkland City from Western Sydney International (Nancy-Bird Walton) Airport to destinations including St Marys, Penrith, Parramatta, Narellan, and the South Coast via Maldon-Dombarton.



Transport for NSW – South West Rail Link Extension brochure (2017)¹

EcoTransit notes the longstanding design intention of the South West Rail Link (from Leppington) as being future-proofed for an extension to Western Sydney International (Nancy-Bird Walton) Airport and for operations at Glenfield to allow direct connections with Sydney Airport (Kingsford Smith International Airport).

It should be noted that, as part of the Rail Clearways Project, the quadruplicated lines between Revesby and Turrella allow for trips between Glenfield and Wolli Creek of as little as 21 minutes on the existing heavy rail line in peak hour.

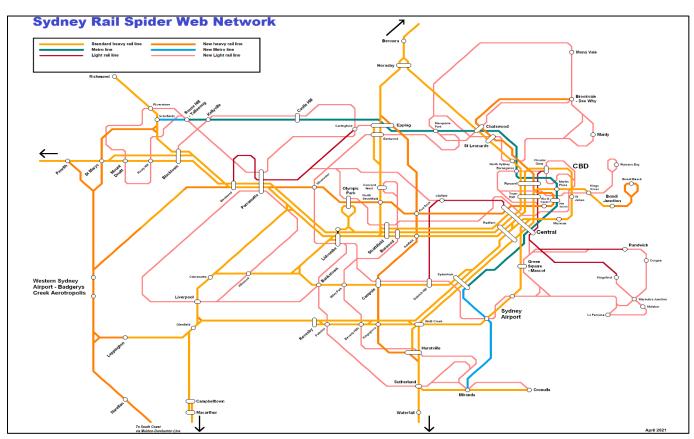
Converting the South West Rail Link into Sydney Metro is a downgrade to Sydney's rail network.

¹ https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/swrl-extension-brochure.pdf

EcoTransit notes the Transport for NSW North South Rail Line and South West Rail Link Extension project FAQ (June 2020)² notes that: "The South West Rail Link Extension will lengthen the existing passenger rail line from Leppington Station to North Bringelly so it connects with the North-South Rail Line. This will provide a direct link to the Western Sydney Aerotropolis and surrounding business area".

EcoTransit notes that the Sydney Metro – Western Sydney Airport line (Stage 1) has been subject to problematic design processes including issues which have been raised at the NSW Legislative Council Inquiry into Acquisition of land in relation to major transport projects (2021)³, in addition to the Infrastructure Australia evaluation of the project's Business Case which has been found the benefits of the line to be "overestimated"⁴, and a growing number of transport officials warning about the project being delayed due to budgetary issues⁵.

EcoTransit is concerned about the proposed conversion of the entire South West Rail Link into Sydney Metro – Western Sydney Airport line (Stage 2) including from Glenfield to Leppington, and also believes that calls for future Metro conversion of Glenfield to Liverpool (and link to Bankstown) are meritless attempts to justify the Sydney Metro Southwest project which has been deemed by the NSW Legislative Council Inquiry into Sydenham to Bankstown line conversion (2019)⁶ as lacking critical justification.



EcoTransit's proposed Sydney Rail Spider Web Network (April 2021). Map by Maurice G. EcoTransit supports extension of Sydney Metro Northwest to Schofields and proposes a diversion of Sydney Metro between Sydenham and Bankstown for a new corridor from Sydenham to Miranda.

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² https://www.transport.nsw.gov.au/system/files/media/documents/2021/North%20South%20Rail%20Line%20FAQs.pdf

³ https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2698

⁴ https://www.infrastructureaustralia.gov.au/sites/default/files/2021-03/SMWSA%20Evaluation%20Summary.pdf

⁵ https://www.smh.com.au/national/nsw/promised-transport-links-to-new-sydney-airport-delayed-due-to-funding-gap-20220926-p5bl4e.html

⁶ https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2551

As referred to earlier, Sydney Trains is already providing express services on the T8 Airport and South Line (via East Hills) that a Metro service would not significantly enhance. Only about 10km of new track needs to be built to connect from Leppington to Western Sydney Airport at Badgerys Creek.

The Sydney Trains Network with double-deck (heavy rail) trains could then deliver passengers from Western Sydney Airport to Sydney Airport in less than 1 hour, even on a stopping train, running every 15 minutes or more.

Current Sydney Trains fleet of Oscar, Millennium, and Waratah design double-deck carriages could be used for the service to Western Sydney Airport, without having to commission more expensive Sydney Metro units from overseas. Both ends of each double-deck carriage could be easily, and cheaply modified for bulky travellers' luggage.

EcoTransit is concerned about the continued downgrading of the Sydney Trains Network and believes the most cost-effective opportunity to provide (heavy) rail access to Western Sydney Airport is through an extension of the existing South West Rail Link from Leppington — Rossmore – Bringelly – Western Sydney Airport (Bradfield) – Aerotropolis (Bradfield).

EcoTransit is concerned about the lack of commitment from all levels of government to extending the South West Rail Link (heavy rail) and believes without an urgent joint commitment to expanding the Sydney Trains Network, that the Western Sydney Airport and Western Parkland City will succumb to traffic congestion and be forced to rely on road transport (e.g. private vehicles) to Liverpool.

Extending the South West Rail Link from Leppington to the Western Sydney Airport (Bradfield) would cost approximately \$3-4 billion dollars including up to 5 stations west of Leppington (e.g. Rossmore, Bringelly, Aerotropolis South, Aerotropolis Core, Western Sydney Airport Terminal). This calculation is based on \$1.8 billion cost of the Glenfield to Leppington extension in 2015, the 2022 cost for the Leppington to Western Sydney Airport extension is estimated at around \$3 billion dollars.

Recommendation: Western Sydney Airport station and (both) Aerotropolis stations should be redesigned for 4 rail tracks (2 Sydney Metro from St Marys & 2 Sydney Trains to Leppington).

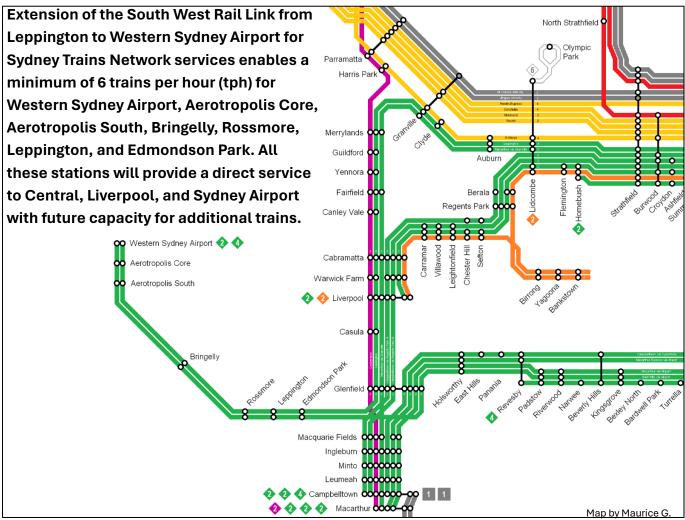
The proposed SMART Rapid Bus corridor⁷ from Liverpool to Western Sydney Airport via Fifteenth Avenue is no more than an expensive Bus T-Way, and not an adequate mass transit option for Western Sydney Airport. This would not be the most desirable option for public transport users of the new Western Sydney Airport or Aerotropolis to connect with Liverpool.

EcoTransit also supports improvements for Liverpool area commuters including express trains to City Circle via Granville to be restored (including additional limited stops pattern bypassing lower patronage stations), and signalling upgrades across the Sydney Trains Network to further increase capacity.

The T2 Inner West Line should be restored as a permanent City to Liverpool via Regents Park service, T5 Cumberland Line should be restored to include Campbelltown to Parramatta/Richmond services with alternate stopping patterns, and a Y-Link constructed approaching Glenfield for Liverpool to City via East Hills services (utilising some of the area already designated for the Moorebank intermodal facility).

⁷ https://www.liverpool.nsw.gov.au/development/major-projects/fifteenth-avenue-smart-transit-fast-corridor

Proposed Sydney Trains Network to Western Sydney Airport

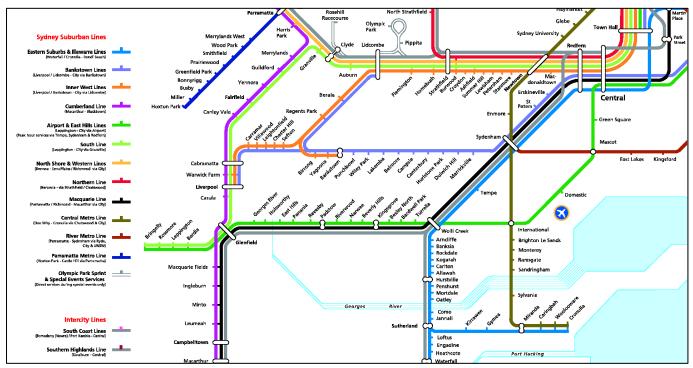


Proposed South West Sydney Map of Sydney Trains in AM Peak. City Circle via Town Hall on 16tph and City Circle via Museum on 14tph, with capacity for additional services on T2, T3, T8 for future growth.

Sydney Trains lines (and stopping patterns for South West Sydney/number of Trains Per Hour):

- T1 Western Line (including express trains re-instated for Lidcombe and Granville)
- T5 Cumberland Line (Macarthur to Richmond)
- T3 Bankstown Line (Liverpool to Bankstown)
- T3 Bankstown Line (Bankstown to City via Regents Park)
- T2 Leppington Line (Western Sydney Airport to City via Granville) at least 4tph
- T2 South Line (Macarthur to City via Granville)
- T2 South Line (Campbelltown to City via Regents Park A & B)
- T2 Inner West Line (Liverpool to City via Regents Park)
- T8 Airport Line (Campbelltown to City via Sydenham)
- T8 Airport Line (Macarthur Express to City via Airport)
- T8 Airport Line (Macarthur to City via Airport)
- T8 Airport Line (Western Sydney Airport to City via Sydney Airport stations) at least 2tph
- T8 Airport Line (Revesby to City via Airport)

Recommendation: Western Sydney Airport to have Sydney Trains to City via Granville/East Hills.



Christie Report (2001) Chapter 5. Beyond 2010 (Figure 5.9)

EcoTransit notes that the South West Rail Link was not only always designed to extend beyond the west of Leppington but also to be integrated with the wider Sydney Trains Network.

The "Long Term Strategic Plan for Rail" (2001) aka. Christie Report⁸ written by Ron Christie, Coordinator General for Rail has recommended that the South West Rail Link have direct Sydney Trains services to City Circle via Liverpool and Granville, and also City Circle via East Hills and Sydney Airport.



Transport for NSW animation (2014) for South West Rail Link showing an indicator board for a direct train to Central via Sydney Airport (T8 Line) on the Sydney Trains Network

⁸ http://exigent.aptnsw.org.au/christie/christie.pdf

Better options for Rail West of Bankstown and Liverpool

EcoTransit supports the Sydney Trains Network and expresses disappointment at the Commonwealth Government and NSW Government proposals for the expansion of rail in South Western Sydney.

The NSW Legislative Council Inquiry into Sydenham to Bankstown line conversion (2019-20) found that the business case for Sydney Metro City & Southwest has not been justified⁹, yet Transport for NSW remains in favour of a conversion of the line from Glenfield to Leppington into Sydney Metro as part of an extension of Metro Southwest from Bankstown to Western Sydney Airport via Liverpool/Glenfield.

It is extremely disappointing that both the Commonwealth Government and NSW Government are continually ignoring the warnings of 4 former Sydney rail executives (John Brew, Ron Christie, Bob O'Loughlin, and Dick Day) that converting Sydenham to Bankstown into Sydney Metro would cause gridlock among the entire Sydney Trains Network¹⁰.

As a witness at the NSW Legislative Council Inquiry into Sydenham to Bankstown line conversion (2019-20), **EcoTransit** presented evidence regarding the ability to increase capacity and frequency on the existing Sydney Trains Network (running heavy rail double-deck trains) through signalling upgrades (at a fraction of the cost to Sydney Metro).

Transport for NSW's plan to extend Metro Southwest from Bankstown to Western Sydney Airport is contrary to the Transport for NSW Greater Liverpool to Bankstown Needs Study (2022)¹¹ and expert research¹² indicating that buses would serve disadvantaged communities better than Metro¹³ (especially in new corridor via Bankstown Airport).

EcoTransit opposes the wasteful government spending on the conversion of the existing Sydney Trains Network including between Liverpool and Leppington via Glenfield into Sydney Metro, as the most cost-effective connection to Western Sydney Airport is an extension of heavy rail for double-deck trains.

EcoTransit supports the NSW Labor proposal for rapid buses in the Greater Liverpool area instead of extending Metro Southwest from Bankstown to Glenfield, but **EcoTransit** cannot support any proposal to extend Metro from Bankstown to Regents Park via Yagoona/Birrong¹⁴.

The solution to Yagoona and Birrong Station being without a direct train to Central Station (once Metro Southwest opens to Bankstown in 2025) is to restore the Bankstown to City Circle via Regents Park service on the T2 Inner West Line and the completion of a project (abandoned in 2014 in favour of WestConnex)¹⁵ for 2 additional Sydney Trains tracks between Lidcombe and Homebush Station (which ultimately delivers enhanced network wide operational benefits).

⁹ https://www.parliament.nsw.gov.au/lcdocs/inquiries/2551/Report%20No%2011 PC%206 Sydenham-Bankstown%20line%20conversion.pdf

¹⁰ https://www.smh.com.au/national/nsw/gridlocked-and-unworkable-dire-warning-for-sydneys-trains-from-former-top-execs-20171213-h03omz.html

¹¹ https://restoreinnerwestline.org.au/wp-content/uploads/2022/11/Greater-Liverpool-to-Bankstown-Needs-Study.pdf

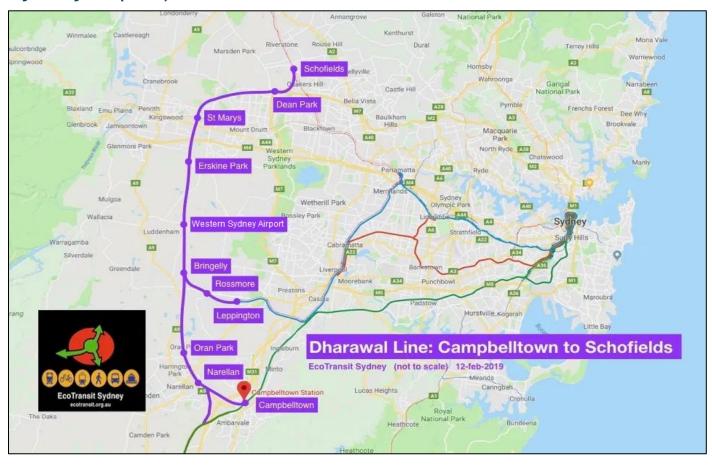
¹² https://ses.library.usyd.edu.au/handle/2123/27096

¹³ https://www.theguardian.com/australia-news/2023/feb/03/more-buses-in-underprivileged-areas-better-bang-for-buck-than-new-transport-projects-australian-research-finds

¹⁴ https://www.youtube.com/shorts/tS9tiuflx5E

¹⁵ https://restoreinnerwestline.org.au/western-line-upgrade-abandoned-to-increase-westconnex-tolls/

The "Dharawal Line" (Schofields to Campbelltown via Western Sydney Airport)



EcoTransit notes the lack of a strong business or operations case for introducing Sydney Metro generally, especially at the expense of upgrades and expansions to the Sydney Trains Network.

Construct the new Western Sydney Airport line (**EcoTransit's proposed "Dharawal Line"**) as a Sydney Trains heavy-rail link for double-deck passenger services and freight trains from Schofields – St Marys – Western Sydney Airport – Leppington and Campbelltown.

With **EcoTransit's proposed "Dharawal Line"** and Sydney Trains timetabling with Leppington to T8 Airport Line via East Hills services, Western Sydney Airport passengers will have a fast direct rail link (with storage for baggage and larger items), without changing trains, to Sydney International and Domestic Airport, and Central Station in under 1 hour.

Construction of the "Dharawal Line" to Sydney Trains (heavy rail) standards also enables such rail infrastructure to serve as a Western Sydney Freight Rail Bypass to the South Coast (via completion of the Maldon – Dombarton rail link) enabling the removal of freight services east of St Marys that share capacity with existing suburban Sydney Trains passenger services.

Recommendation: The Inquiry investigates the rationale for the Western Sydney Airport line's selection for Sydney Metro instead of construction to Sydney Trains & freight network standards.

Sydney Trains Network Expansion better than Sydney Metro

Metro rail is not suited to long distances or lines with sparsely located stations (beyond 800m apart) where passengers get on and off frequently. It is unfortunately too late to stop the false metro the government has built in the North West, but **EcoTransit** believes that no more existing rail lines, currently using Sydney's famous double-deck trains, are converted (and thus downgraded) into Metro.

It would be useful to have another look at Bradfield's original plans in light of the massive expansion of the Sydney metropolitan, rail development and options in recent years. **EcoTransit** is concerned that Public Transport design might be decided by which way an area votes in state or federal elections. What follows obviously could not be built overnight but without a comprehensive plan, nothing will happen.

The various heavy rail and light rail proposals will need to be prioritised and constructed accordingly. However, without all these proposals being built within the next 15 to 20 years Sydney will be severely disadvantaged economically and the population's mobility will be increasingly curtailed with the necessity to dramatically reduce greenhouse gases.

Naturally, many people will say these proposals are unaffordable. However, if prioritised and completed over many years this is not necessarily true. **EcoTransit** would suggest that the government should establish and sell dedicated public transport treasury bonds to finance these projects.

Options to Improve Heavy Rail Routes for Western and South West Sydney

- Provide a triangle at Glenfield so that trains no longer have to terminate at Revesby, East Hills, or Liverpool. Instead, they would complete a circular route in both directions.
- Extend the T2 Leppington Line through to Western Sydney Airport and onto St Marys including a triangular junction with the T1 Western Line.
- Extend the line from Western Sydney Airport to St Marys then Schofields to connect with the T1 Richmond Line, at Schofields (to also meet with a future extension of Sydney Metro Northwest from Tallawong).

Consideration should be given to a triangular junction at Schofields so that trains could alternatively travel onto Richmond or Central.

- The T1 Richmond Line should be duplicated to achieve wider network benefits, and a level crossing removal project introduced as patronage demand increases over the coming decades.
- A triangular junction at Leppington would provide a new line to Narellan and Camden and re-join the Main Southern Line again with a triangular junction) just south of Macarthur.
 - This would allow freight trains from the Blue Mountains and the west to avoid the suburban lines east of St Marys to access a completed Maldon-Dombarton line and use Port Kembla as a port, also south to Bomaderry.
- The Main Western Line (T1) from St Marys to Penrith should be quadruplicated to allow more frequent services, and to provide backup capacity in the corridor for Blue Mountains trains.

Local residents support the expansion of Sydney Trains Network

Research undertaken by the "Fix Liverpool Transport" community campaign¹⁶ in February and March 2024 finds that a majority of residents from existing South West Rail Link stations prefer an extension of the Sydney Trains Network (from Leppington to Western Sydney Airport) as opposed to Sydney Metro from Glenfield to Western Sydney Airport.

The "Fix Liverpool Transport" community campaign engaged with a combined total of 1,200 households in an 800m radius around Leppington and Edmondson Park railway stations. An invitation was extended for residents to share their views on future rail services towards Western Sydney Airport.

From the 265 survey respondents who provided their names and contact details, the key results are:

- An overwhelming majority of South West Rail Link commuters travel to Central Station.
- All commuters support a direct train from the South West Rail Link to Western Sydney Airport.
- Excluding Central Station, a majority of South West Rail Link commuters indicated that the first priority for Western Sydney Airport rail connections was with Sydney Airport and the second priority was to Liverpool Station.
- Parramatta was ranked fourth and Strathfield was ranked fifth in the preferred important direct train connections needed from Western Sydney Airport via South West Rail Link.

While many commuters currently do interchange at Glenfield between T5/T2 Line and T8 Line services to Central, these results as a sample survey of existing South West Rail Link residents demonstrate that preference is for a single-seat train journey towards Sydney CBD.

Preliminary findings from local research and engagement would also suggest that a new Leppington interchange (similar to Bankstown) between existing Sydney Trains and future Sydney Metro to Western Sydney Airport would not be supported. A Leppington metro/train interchange would result in airline passengers travelling between Western Sydney Airport and Sydney Airport to have to up to 4 separate trains (Western Sydney Airport to Aerotropolis [metro], Aerotropolis to Leppington [metro], Leppington to Glenfield [train], Glenfield to Sydney Airport [train]).

Most residents also questioned the need to be replacing existing Sydney Trains on the South West Rail Link (Glenfield to Leppington) with new Sydney Metro as current service frequencies and routes were regarded as largely adequate with the option to travel directly to City Circle via Liverpool and Granville, or interchange at Glenfield for an express train to City Circle via Sydney Airport.

From such findings affirming the long-standing general community sentiment in support of extending the South West Rail Link to Western Sydney Airport Terminal, both the Commonwealth Government and NSW Government is urged to properly examine the feasibility of expansion of the Sydney Trains Network to Western Sydney Airport from Leppington.

Recommendation: The business case for Sydney Metro – Western Sydney Airport line Stage 1 & 2 (Glenfield to Western Sydney Airport) be published in full (and is to include a cost/benefit analysis of expansion of the existing Sydney Trains Network from Leppington to Western Sydney Airport in comparison with Sydney Metro from St Marys and Glenfield to Western Sydney Airport).

¹⁶ https://liverpooltransport.info/

Sydney Trains' higher capacity than Sydney Metro for WSA

EcoTransit draws attention to the significantly lower capacity of Sydney Metro carriages compared to Sydney Trains carriages generally and especially for the Western Sydney Airport line. Transport economist Neil Douglas, who has conducted research¹⁷ for the NSW Government, puts the practical capacity at 1,400 for double-deckers (Sydney Trains) and 1,120 for single-deckers (Sydney Metro)¹⁸.

The Sydney Metro – Western Sydney Airport line Environmental Impact Statement (October 2020) notes that "The project would initially operate up to three carriages per train with a service frequency of up to 12 trains per hour in the peak" and "the design for the ultimate service caters for up to four carriages per train and a frequency of 20 trains per hour" 19.

EcoTransit notes that all Sydney Trains services on the T2 Inner West & Leppington Line, and T8 Airport & South Line are 8 carriage services with current capacity of 20 trains per hour.

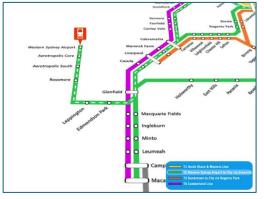
Therefore, even if Sydney Metro – Western Sydney Airport line were to operate at maximum capacity (4 Metro carriages x 20 trains per hour), were the project be designed as completely Sydney Trains standards (8 Train carriages x 20 trains per hour), overall rail capacity of Sydney Trains would be at least double that of Sydney Metro for Western Sydney Airport.

Double-deck v single-deck train capacity, peak load per hour			
	Existing signalling	Enhanced signalling	
Double-deck	20 trains, 28,000 passengers	24 trains, 33,600 passengers	
Single-deck	22 trains, 25,000 passengers	26 trains, 29,200 passengers	
Source: Douglas Economics			

Recommendation: All Sydney Metro – Western Sydney Airport line stations be constructed to full eight carriage lengths for future proofing (e.g. conversion into Sydney Trains or Tram-Trains).

South West Rail Link Extension Maps (Sydney Trains Network)

T2 Western Sydney Airport to City Circle via Liverpool and Granville



T8 Western Sydney Airport to City Circle via East Hills and Sydney Airport



¹⁷ https://web.archive.org/web/20140423013548/http://images.smh.com.au/file/2013/09/23/4770519/trains.pdf

¹⁸ https://www.abc.net.au/news/2014-04-11/barry-ofarrell-sydney-trains-claim-doubtful/5371446

¹⁹ https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-10051%2120201019T004445.472%20GMT

Future of T5 Cumberland Line & Merrylands/Harris Park Y-Link

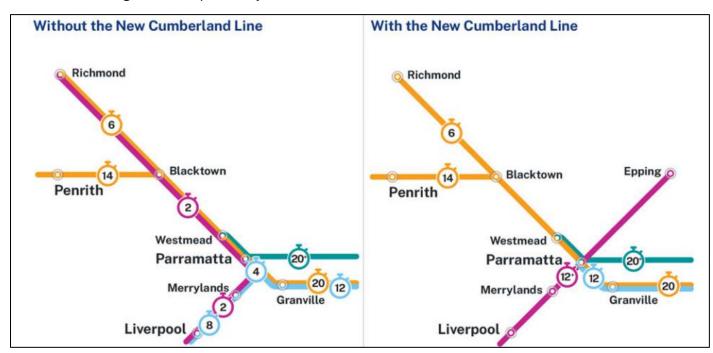
Internal Transport for NSW documents reveal preliminary planning has commenced to convert the existing T5 Cumberland Line into Sydney Metro and for a future extension of T5 metro from Glenfield to Merrylands and then beyond to Epping via new rail tunnels under Parramatta.

New T5 Cumberland Line: Western Sydney Airport (Bradfield/Aerotropolis) to Epping via Glenfield and Parramatta. Completed by 2056 or 2061 as part of the NSW Future Transport Strategy.

• T5 Metro Stage 1: Conversion of Glenfield to Leppington into Sydney Metro, and extension of South West Rail Link from Leppington to Western Sydney Airport as Sydney Metro WSA Line – Stage 2.

Timing subject to the current business case (co-funded by NSW and Commonwealth Government) to extend the Sydney Metro – Western Sydney Airport Line from the Western Sydney Aerotropolis to Glenfield via Leppington.

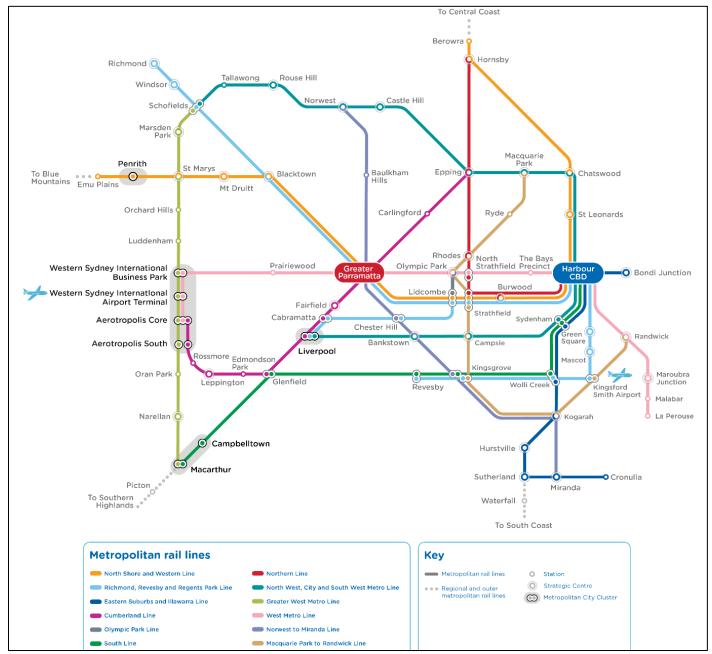
- T5 Metro Stage 2: Conversion of Glenfield to Merrylands into Sydney Metro. Completed by 2036?
- T5 Metro Stage 3: New Sydney Metro Tunnels from Merrylands to Parramatta Metro Station (future Parramatta Transport Hub). Completed by 2041?
- T5 Metro Stage 4: Parramatta to Epping with a new Sydney Metro station potentially at Rydalmere and/or Carlingford. Completed by 2056.



Route outline of new Cumberland Line. Transport for NSW Greater Liverpool Area Needs Study (2022)²⁰

EcoTransit is disappointed that the T6 Carlingford Line was replaced with Light Rail instead of being duplicated as part of the Parramatta to Epping/Chatswood Rail Link.

²⁰ https://restoreinnerwestline.org.au/wp-content/uploads/2022/11/Greater-Liverpool-to-Bankstown-Needs-Study.pdf



NSW Future Transport Strategy 2056 – Indicative Sydney Rail Network (released November 2020) Note that the T5 Cumberland Line (metro from Glenfield does NOT service Western Sydney Airport Terminal but terminates at Aerotropolis (which is 1 station south of the Airport Terminal).

EcoTransit has previously made submissions to the NSW Government and expressed disappointment at the decision to convert the Epping to Chatswood Rail Link into Sydney Metro along with the decision to construct the North West Rail Link as Sydney Metro (instead of to Sydney Trains standards).

EcoTransit is a supporter of a Second Harbour Rail Crossing and believes that 2 additional Sydney Trains tracks across Sydney Harbour (Bridge) would have increased capacity by 50% across the entire Sydney Trains Network²¹.

²¹ https://ecotransit.org.au/wp/policy-priorities/priority-projects/two-more-tracks/

Impacts of new T5 Cumberland Line and Metro conversion

- The South West Rail Link was designed on the Sydney Trains Network to be (and should be) extended beyond Leppington as Sydney Trains heavy rail with baggage capacity (e.g. Oscar carriages) to Western Sydney Airport and is advantageous due to its short distance.
- The South West Rail Link has the capacity for direct Sydney Trains Network connections through Glenfield to Liverpool, Parramatta, Blacktown, Richmond, Granville, Strathfield, Redfern, East Hills, Wolli Creek, Sydney Domestic Airport, Sydney International Airport, Central, and City Circle.
- The New Cumberland Line will have 12 trains per hour between Western Sydney Airport and Epping which is 2 more than currently provided by a combination of the T2 Leppington Line (City via Granville) and T5 Cumberland Line.

Capacity exists on the current Sydney Trains Network to increase T5 Cumberland Line services by 2 trains per hour to Leppington south of Parramatta or a further point west such as Blacktown or Schofields.

Increasing the level of service on the existing T5 Cumberland Line and maintaining T2 Leppington Line services allows for greater travel options and flexibility on the Sydney Trains Network in contrast to converting the line into Sydney Metro.

 Converting the T5 Cumberland Line into Sydney Metro replaces a functional rail link and will have minimal journey time savings (if any) to Glenfield, Liverpool, Parramatta (as the number of intermediary stations remains the same minus Harris Park), Sydney Domestic Airport, Sydney International Airport, Central, and City Circle.

Given the substantial cost and impacts of converting the T5 Cumberland Line into Sydney Metro including the overall loss of direct connections on the Sydney Trains Network, a significant number of commuters will have increased journey times due to the need to interchange at Parramatta to reach the current destinations on the Sydney Trains Network.

The Sydney Trains Network timetable should enable direct trains from Central/Sydney Domestic Airport to Glenfield (currently 39 minutes) and then all stations to Western Sydney Airport via Leppington (approximately 10 minutes). The entire journey to Western Sydney Airport would be achievable in approximately 50 – 55 minutes utilising existing the Kingsgrove to Revesby Quadruplication.

Approximately a third of New Cumberland Line commuters are forecasted to interchange at Parramatta with the majority travelling to Sydney CBD (Hunter Street) using Sydney Metro West.

The current T5 Cumberland Line from Leppington to Parramatta is approximately 45 minutes (or New Cumberland Line potentially 40 minutes with Sydney Metro and minus Harris Park Station). Sydney Metro West from Parramatta to Sydney CBD (Hunter Street) is approximately 20 minutes.

Sydney Metro (New Cumberland Line and Sydney Metro West) will not reduce journey times to Central or City Circle for commuters from Leppington, Edmondson Park, Glenfield, Liverpool, Fairfield, and other stations on the current T5 Cumberland Line.

 The New Cumberland Line as Sydney Metro to Epping (after the initial conversion of Glenfield to Leppington with Metro extension to Western Sydney Airport) will remove the capacity for Sydney Trains heavy rail running between Merrylands and Glenfield.

Trains relying on the Old Main South Line (via Granville) and New Main South Line (via Regents Park) will be rerouted to operate on the T8 Airport and East Lines to Central, which will severely limit flexibility on the Sydney Trains Network especially during trackwork and special events.

- The New Cumberland Line as Sydney Metro to Epping (after the initial conversion of Glenfield to Leppington with Metro extension to Western Sydney Airport) will remove the current T2 Leppington Line from the Sydney Trains Network leaving only the T2 Inner West Line terminating at Parramatta.
- The New Cumberland Line as Sydney Metro to Epping (after the initial conversion of Glenfield to Leppington with Metro extension to Western Sydney Airport) will remove the T2 Liverpool via Regents Park line (to be restored in 2024) from the Sydney Trains Network as Cabramatta, Warwick Farm, and Liverpool will only be serviced by Sydney Metro.

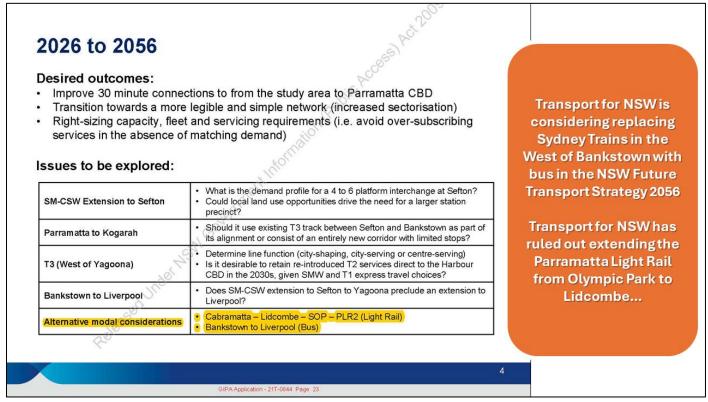
Regarding the T2 Line (from City via Granville or Regents Park), a Cabramatta turnback for Sydney Trains has been ruled out by Transport for NSW in 2020. Transport for NSW also has current plans to consider the removal of the re-instated T2 Inner West Line: City Circle to Liverpool via Regents Park service in 2030.

2026 to 2056 Desired outcomes: Improve 30 minute connections to from the study area to Parramatta CBD Transition towards a more legible and simple network (increased sectorisation) Transport for NSW is Right-sizing capacity, fleet and servicing requirements (i.e. avoid over-subscribing considering to AGAIN services in the absence of matching demand) REMOVE the direct train from West of Bankstown Issues to be explored: (T2 Inner West Line) What is the demand profile for a 4 to 6 platform interchange at Sefton? SM-CSW Extension to Sefton Could local land use opportunities drive the need for a larger station precinct? Transport for NSW will Should it use existing T3 track between Sefton and Bankstown as part of Parramatta to Kogarah restore the T2 Liverpool its alignment or consist of an entirely new corridor with limited stops? to City via Regents Park Determine line function (city-shaping, city-serving or centre-serving) T3 (West of Yagoona) Is it desirable to retain re-introduced T2 services direct to the Harbour direct train in mid-2024 CBD in the 2030s, given SMW and T1 express travel choices? but only until 2030... Does SM-CSW extension to Sefton to Yagoona preclude an extension to Bankstown to Liverpool Liverpool? Cabramatta - Lidcombe - SOP - PLR2 (Light Rail) Alternative modal considerations Bankstown to Liverpool (Bus)

2026 to 2056 Issues to be explored:

"Is it desirable to retain re-introduced T2 services direct to Harbour CBD in the 2030s...?"

Source: Transport for NSW (GIPA 21T-0844)



2026 to 2056 Issues to be explored:

Alternative modal considerations. Bankstown to Liverpool bus.

Source: Transport for NSW (GIPA 21T-0844)

Additionally, T3 Liverpool to Bankstown line services will be removed in 2024 when Sydney Metro Southwest (Sydenham to Bankstown) opens. Therefore, the no Sydney Trains trains will operate between Cabramatta and Sefton/Bankstown as well as Lidcombe via Regents Park. As Transport for NSW has ruled out (in 2023) extending Parramatta Light Rail from Olympic Park to Lidcombe, the train stations in the West of Bankstown will be replaced by bus stops.

Transport for NSW is currently planning for rapid buses as part of the Greater Liverpool Area Needs Study (2022)²².

 Merrylands, Guildford, Yennora, Fairfield, Canley Vale, Cabramatta, Warwick Farm, Casula, Edmondson Park, and Leppington will lose direct trains to stations such as Harris Park, Blacktown, Richmond, Granville, Lidcombe, Strathfield, Redfern, Central, City Circle and be forced to interchange at Parramatta Metro Station (separate to current Parramatta Station on the Sydney Trains Network).

Current T5 Cumberland Line commuters from Richmond and Blacktown will also have to interchange at Parramatta for the New Cumberland Line towards Leppington.

 The Cumberland Line Y-Link between Merrylands to Harris Park will be disconnected with Sydney Metro entering into new tunnels north of Merrylands Station to Parramatta Metro Station bypassing Harris Park.

²² https://restoreinnerwestline.org.au/wp-content/uploads/2022/11/Greater-Liverpool-to-Bankstown-Needs-Study.pdf

 The New Cumberland Line as Sydney Metro to Epping may impede Parramatta from being part of Fast Rail to Newcastle and the Central Coast. The smaller Sydney Metro sized tunnels are not compatible with Sydney Trains or NSW TrainLink heavy rail services which eliminate a connection at Epping with the T9 Northern Line / Newcastle and Central Coast Line (Main North Line).

The current T5 Cumberland Line should remain on its current route to Schofields and Richmond.

The future East West Rail Link (Westmead to Western Sydney Airport / Metro West Extension) should be replaced with heavy rail from Western Sydney Airport to Parramatta, then continuing to Epping with a connection with the T9 Northern Line / Newcastle and Central Coast Line (Main North Line).

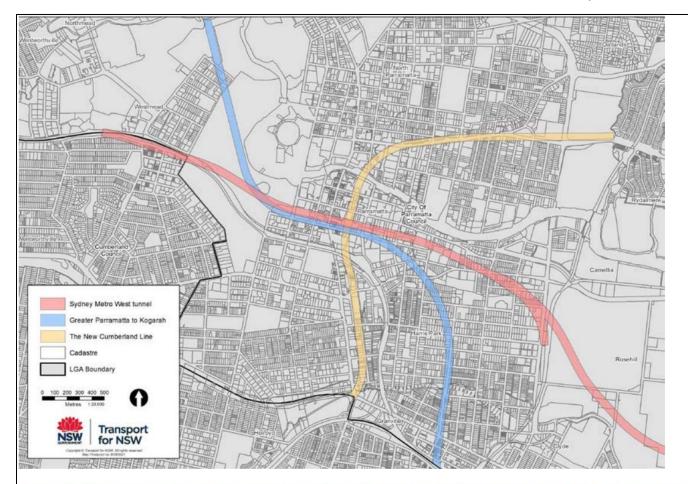


Figure 3 Preferred corridors for Greater Parramatta to Kogarah and The New Cumberland Line within Greater Parramatta

Recommendation: An Independent Review of the NSW Future Transport Strategy to increase and optimise capacity on the Sydney Trains Network.

²³The new T5 Cumberland Line (metro) would leave the existing rail corridor near Crescent Street, Holroyd to proceed in new tunnel (bypassing the Y-Link and Harris Park) to Parramatta then Epping.

Extract of Ministerial Briefing for Minister for Transport and Roads Andrew Constance (2021)²⁴

²³ https://restoreinnerwestline.org.au/wp-content/uploads/2022/11/Attachment-A-Greater-Parramatta-Future-Transport-Hubs-Proposed-Tunnel-Alignments.pdf

²⁴ https://restoreinnerwestline.org.au/wp-content/uploads/2022/11/Interim-corridor-protection-for-two-new-north-south-lines-through-Greater-Parramatta-Briefing-for-Minister-for-Transport-and-Roads-24-September-2021.pdf

Sydney Metro WSA Stage 2 does NOT connect to Airport Terminal

Planning for a metro extension linking Glenfield to the Western Sydney Aerotropolis underway

21.06.2022



Work will start immediately on a business case to extend the Sydney Metro – Western Sydney Airport Line from the Western Sydney Aerotropolis to Glenfield, via Leppington.

The extension will provide an additional transport option for one of Sydney's fastest-growing regions and connect the area to the new Western Sydney International (Nancy-Bird Walton) Airport.

The business case is the first step in bringing metro services to more communities in Greater Western Sydney. It will provide the design, economic assessment, and cost estimation to inform an investment decision for the construction of the extension.

As part of the Future Transport Strategy 2056, a metro line between the Western Sydney Aerotropolis and Leppington was identified as an initiative for investigation. In June 2020, Transport for NSW protected transport corridors in the Western Parkland City to enable this connection.

The extension will continue the 23-kilometre Western Airport Line linking St Marys to the Aerotropolis. Work on the first stage has commenced, with tunnelling to start by 2023.

The Final Business Case is expected to be completed in 2024 and its contents will determine how the extension will proceed.

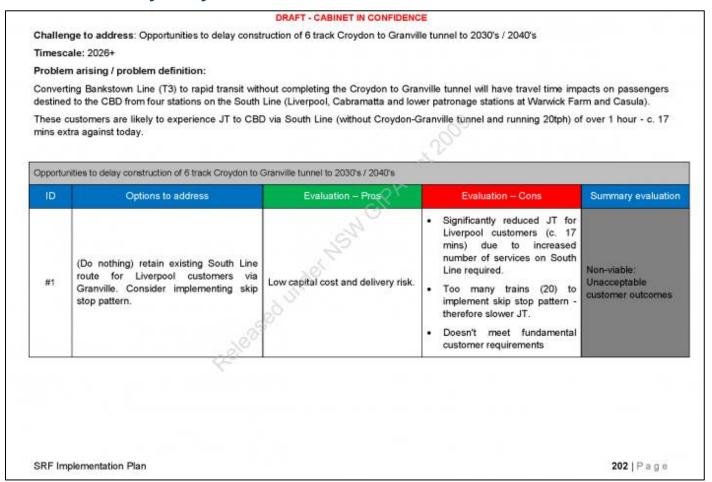
Sydney Metro – Western Sydney Airport project is jointly funded by the Australian and NSW governments.

A closer reading of the Sydney Metro announcement²⁵ for metro from Glenfield reveals that Stage 2 of the Western Sydney Airport line will not connect to the actual International Airport Terminal, but only to Aerotropolis (which is 1 station south of the Western Sydney Airport Terminal).

Under the current proposal by the Commonwealth Government and NSW Government in the NSW Future Transport Strategy 2056, passengers travelling from Western Sydney International Airport Terminal would need to interchange at Aerotropolis Station and again at Glenfield Station to reach existing Sydney Trains Network stations (such as Central, Sydney Airport, Liverpool, Strathfield, Parramatta, Revesby).

²⁵ https://www.sydneymetro.info/article/planning-metro-extension-linking-glenfield-western-sydney-aerotropolisunderway

Cancellation Croydon to Granville new rail tunnel impacting South West Sydney commuters



Internal Transport for NSW planning documents such as the "Sydney's Rail Future Implementation Plan – SRF" (2013) highlight the need to improve Sydney Trains services' journey times in South West Sydney.

It is noted that conversion of the T3 Bankstown Line into rapid transit (Sydney Metro Southwest) will increase journey times for South West Sydney commuters by over 17 minutes to be in excess of 1 hour to Sydney CBD via T2 Granville.

Upgrading the rail corridor with additional tracks from Croydon to Granville is essential for Liverpool, Warwick Farm, Cabramatta, and Casula commuters. However, in 2014, the government redesigned Flemington station without allowing for the inclusion of additional tracks for even the smaller upgrade to sextuplicate the line between Homebush and Lidcombe.

Tolls were also re-introduced onto the M4 Motorway (WestConnex Stage 1) just months before the 2017 Sydney Trains timetable change which resulted in the loss of express trains from Liverpool to City on the T2 Leppington via Granville Line. Transport for NSW has ruled out building additional tracks from Croydon to Granville as construction of the Sydney Metro West project has commenced.

NSW Government investment in toll-roads and metro has been at the expense of optimising the Sydney Trains Network through signalling upgrades and new infrastructure to enhance capacity.

Tram-Trains for Western Sydney

EcoTransit advocates for the conversion of all single-deck rail rolling stock such as Sydney Light Rail and Sydney Metro into an Australian-made standardised tram-train. The new tram-trains will be compatible with the existing Sydney Light Rail, Parramatta Light Rail, Sydney Metro, and the Sydney Trains Network (all running on standard gauge of 1,435 mm (4 ft 8+1/2 in)).

EcoTransit has previously advocated for the construction of a new Western Line (similar to the current Sydney Metro West project) using Sydney Trains Network (heavy rail) standards, however, this proposal, to allow Blue Mountains, Richmond, Emu Plains/Penrith services on the T1 Western Line to divert east of Westmead into new tunnels to Parramatta and then as an express to Sydney CBD, has been ignored by successive NSW Governments.

The extension of Sydney Metro from Westmead to Western Sydney Airport (East-West Rail Link) does not provide Greater Western Sydney with fast and convenient environmentally sustainable transport which **EcoTransit** believes should be the criterion for Sydney's future transport system.

EcoTransit does support new rail from Parramatta/Westmead to Western Sydney Airport and proposes such to take place through the standardisation of all single-deck rail fleets (such as light rail and metro) into Australian made Tram-Trains and the extension of Parramatta Light Rail (as Tram-Trains) to Western Sydney International Airport Terminal, and eventually becoming the main form of regionalised public transport throughout the Western Sydney Aerotropolis/Western Sydney Parkland City (Bradfield).

Tram-trains as in use around the world (including in Karlsrue in Germany and more recently Sheffield in the United Kingdom) are often at grade constructions with shared or dedicated on-street running without major tunnelling. Stations are located in semi-close proximity to each other with platforms capable of servicing 8 carriage tram-trains.

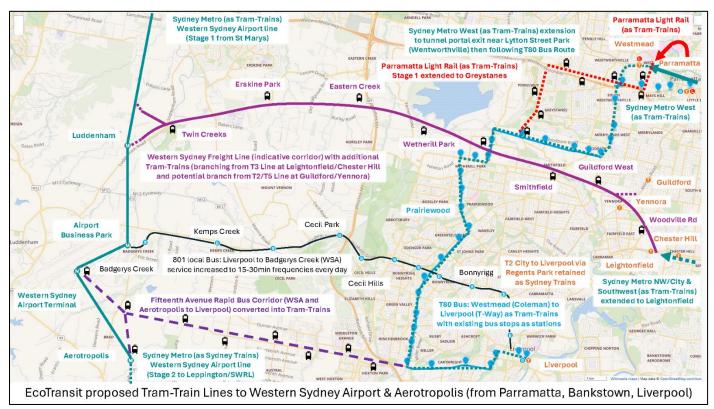
EcoTransit notes the extension of rail connections from Parramatta/Westmead to Western Sydney Airport would enhance public transport through the LGAs of Cumberland Council²⁶ and Fairfield Council²⁷, and the Local Strategic Planning Statement of both Councils supporting a new link to Western Sydney Airport is noted. Fairfield Council has also recognised the need for increased transport to Prairiewood and Cecil Park.

Cumberland Council has advocated for the extension of Parramatta Light Rail from Westmead Station to Wentworthville via Hawkesbury Road and the Great Western Highway median; as well as for the Western Sydney Freight Line intersecting with the T2 Leppington Line/T5 Cumberland Line near Yennora to include passenger services to Western Sydney Airport.

EcoTransit also notes the Parramatta to Liverpool T-Way (T80 Bus Route) was originally designed to be part of a Western Sydney Light Rail Network, hence **EcoTransit** would also support the introduction of tram-trains replacing the T80 Bus.

 $^{27}\,https://www.fairfieldcity.nsw.gov.au/files/assets/public/v/1/documents/business/adopted-fairfield-city-local-strategic-planning-statment-2040-30.03.20.pdf$

 $^{^{26} \, \}underline{\text{https://www.fairfieldcity.nsw.gov.au/files/assets/public/v/1/documents/business/adopted-fairfield-city-local-strategic-planning-statment-2040-30.03.20.pdf}$



Tram-Train stop locations are indicative. Tram-Train passenger/line and mode interchanges at: South Wentworthville, Greystanes/Woodpark, Wetherhill Park, Bonnyrigg, Miller/Hoxton Park

With all Sydney Metro lines, all Light Rail (e.g. Parramatta Light Rail), rapid bus corridors (e.g. T80 Bus between Parramatta/Westmead and Liverpool; proposed Fifteenth Avenue Smart Transit (FAST) link between Liverpool and Western Sydney Airport), and the proposed Western Sydney Freight Line converted/upgraded to support the operation of Tram-Trains (standard gauge compatible with Sydney Trains), significant new rail connections across Western Sydney can be achieved.

In conclusion, **EcoTransit** believes greater flexibility will come about in future rail planning if all single-deck stock in Sydney trams (light rail) is converted to an Australian tram-train design. These would be able to work in the Metro tunnels as single-deck trains and on tram lines along the surface (replacing and/or complementing buses) as well as on heavy rail tracks (Sydney Trains Network).

This will reduce the need for duplication in the future, as such tram-trains would enable the reversal of the estrangement of Sydney Metro lines/tunnels from the Sydney Trains and wider rail network and allow trams (light rail) to perform more than standalone and street-based operations.

EcoTransit's proposed Tram-Train Routes in Western and South West Sydney include:

- Parramatta to Western Sydney Airport (former Parramatta Light Rail) via Greystanes then T80 route then Western Sydney Freight Line and/or Fifteenth Avenue.
- Parramatta to Western Sydney Airport (former Metro West) via South Wentworthville on T80 route then Western Sydney Freight Line and/or Fifteenth Avenue.
- Bankstown to Western Sydney Airport via Western Sydney Freight Line.
- Liverpool to Western Sydney Airport and Aerotropolis via T80 route then Fifteenth Avenue.



Key Recommendations

- Western Sydney Airport station and (both) Aerotropolis stations should be redesigned for 4 rail tracks (2 Sydney Metro from St Marys & 2 Sydney Trains to Leppington) as part of future-proofing the benefits of extending the South West Rail Link as Sydney Trains (heavy rail) and thus enhancing network operational flexibility.
- 2. Western Sydney Airport to have direct Sydney Trains services to City Circle via T2 Liverpool and Granville, and direct Sydney Trains services to City Circle via T8 East Hills and Sydney Airport.
- 3. The Inquiry into Critical transport infrastructure supporting the Western Sydney International Airport and Western Sydney Aerotropolis investigates the rationale for the Western Sydney Airport line's selection/conversion for Sydney Metro standards (Stage 1: St Marys to WSA and Stage 2: WSA to Glenfield) instead construction to Sydney Trains and freight network standards.
- 4. The business case for Sydney Metro Western Sydney Airport line (Stage 1 & 2) be published in full (and include a cost/benefit analysis of the expansion of the existing Sydney Trains Network from Leppington to Western Sydney Airport in comparison with Sydney Metro from St Marys and Glenfield to Western Sydney Airport).
- 5. All Sydney Metro Western Sydney Airport line stations (Stage 1 & 2) be constructed to full eight carriage lengths for future proofing (e.g. conversion into Sydney Trains and/or potential Tram-Trains).
- 6. An independent review of the NSW Future Transport Strategy (with public consultation) to increase capacity on the Sydney Trains Network, especially for the T2 Inner West (Parramatta), and Liverpool via Regents Park) and Leppington/WSA Line, T3 Bankstown Line (Lidcombe to Bankstown, and Liverpool to Bankstown), T5 Cumberland Line, and T8 Sydney Airport/WSA and South Line.
- 7. A feasibility study be undertaken into the conversion of all Sydney single-deck rail fleets and operations into Australian made tram-trains in lieu of new rail extensions from Parramatta, Bankstown, and Liverpool to Western Sydney Airport/Aerotropolis.
- 8. If Sydney Metro Western Sydney Airport line Stage 2 from Glenfield is adopted, the line reaches the Western Sydney Airport Terminal (and does not terminate at a prior station such as Aerotropolis).