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## **UDIA Submission on the Sydney Metro – Western Sydney Airport October 2020 Environmental Impact Statement**

Dear Mr Gorgioski,

The Urban Development Institute of Australia NSW (UDIA NSW) is the leading industry body representing the interests of the urban development sector and has over 500 member companies in NSW. UDIA advocates for the creation of liveable, affordable, and connected smart cities.

UDIA is pleased to make a submission on the *Sydney Metro – Western Sydney Airport October 2020 Environmental Impact Statement* (the EIS) prepared by Sydney Metro, which is currently being assessed by the NSW Department of Planning, Industry and Environment (DPIE).

Western Sydney has suffered with a lack of public transport and is 21% more car dependant than the rest of Sydney. For the next 20 years Western Sydney is expected to have 55% more population growth and we must see intergenerational investment in rail and rapid bus transit to rival other globally competitive cities like Singapore, Hong Kong, London, and San Francisco.

UDIA is a strong advocate for major city-shaping transport infrastructure to support the Western Parkland City, which will become the third major city in Greater Sydney with up to 184,500 new homes and 200,000 new jobs by 2036. The Western Sydney Airport Metro (WSAM) from the Western Sydney International Airport (WSIA), which are both due to open in 2026, will provide the foundation to deliver a globally competitive third city, if it delivers integrated urban planning and optimises 30-minute connections for existing centres and for the future city. This requires +100 year vision and an inter-generational investment philosophy (as retrofitting is a very expensive option) to maximise the city shaping potential. UDIA has developed the *Urban AI* pilot project focussed on the WSAM with an ambition to explore how machine learning twinned with computational design modelling can contribute to better strategic transport and land-use decision making and future city communication. UDIA has been working on our 3D city modelling platform - Urban Pinboard with data from leading research institutions and collaboration partners and we would encourage you to use this technology to consider the evidence for more stations on WSAM.

The UDIA initiative for Western Sydney “NextGen West” recognises the need for the WSAM. We therefore advocate for strong industry involvement to ensure an efficient planning process to deliver the key town centres, housing precincts and social infrastructure to make Western Sydney a great place to live, work and enjoy. Increased consultation will also ensure industry confidence to invest in this area and achieve the planning visions established by government.

We commend the vision and commitment by all levels of government to plan for the Western Parkland City and future WSIA by providing a connecting north-south metro rail line to connect the west with the west.

Our eight (8) keys recommendations for the WSAM project are presented below:

- 1) Provision for additional rail stations on the proposed WSAM to support the Western Parkland City and Greater Western Sydney.
- 2) Provide a more cohesive TOD-based strategy which places the stations within a connected grid of road networks and achieve 30-minute cities
- 3) Prioritise enabling infrastructure to service key centres to build the Western Parkland City around a TOD based 30-minute city urban hierarchy.
- 4) Involve the development industry in the future planning and delivery of the Orchard Hills Town Centre and Station Precincts leading up to the opening of the rail line to achieve a more integrated land use and transport planning outcome.
- 5) Sydney Metro to nominate a responsible delivery agency to focus on achieving development outcomes for the Orchard Hills Town Centre and Station Precincts leading up to the opening of the rail line.
- 6) Sydney Metro (and/or nominated coordination agency) to work with UDIA to develop market-tested precincts plans based on Urban AI for the Orchard Hills Town Centre and Station Precinct.
- 7) Sydney Metro to involve the development industry in the future planning and delivery of the WSAM to ensure developer buy in.
- 8) Sydney Metro to work with industry on opportunities to reduce costs with delivery of the future rail corridor at the southern portion of WSAM once urban development occurs in the release precincts.

UDIA believes that Sydney Metro can further improve the value of the WSAM by addressing the following issues on this and subsequent pages.

## **1. The need for additional stations on the Western Sydney Airport Metro**

The WSAM is a key long-term infrastructure investment in Western Sydney, to allow for new transit oriented development (TOD) around station centres. Based on a ‘String of Pearls’ approach, there is an opportunity to provide additional stations and achieve greater integrated and land use planning outcomes.

The WSAM is the Western Parkland City’s ‘Harbour Bridge’ opportunity and holds a key to structuring sustainable and productive urban development across the city. This foundational urban rail line provides the ‘iron spine’ to connect the West with the West, from Tallawong in the North West Growth Centre, to the Aerotropolis and WSIA and to Macarthur in the South West, together with the connection to Leppington which will link our two Sydney airports. This essential transport infrastructure is what will accelerate growth in the Western Parkland City and requires an intergenerational investment vision as the basis for the next 100 years of growth in Western Sydney.

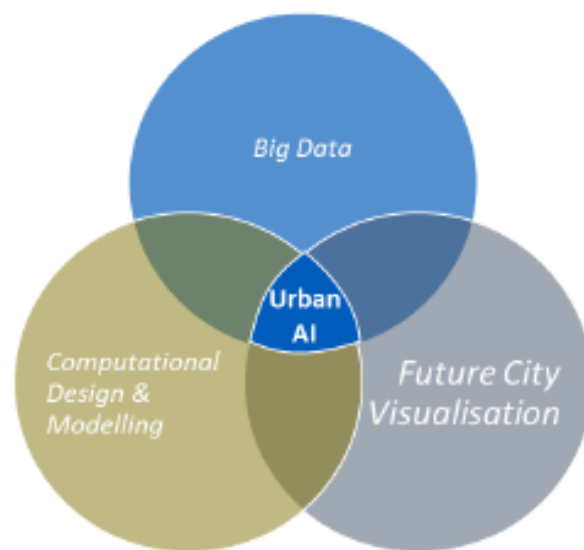
In addition to rail, the rapid bus network will be critical to providing the connectivity for the Aerotropolis, to achieve the vision to connect the west to the west to key centres such as Liverpool and Campbelltown. We cannot rely on “build and they will come” – we must make a 21st Century Smart 30-minute city that is bounding with opportunity and is too good to miss out on. With integrated rail, rapid bus corridors and urban planning, the TOD centres down the ‘iron spine’ will improve equity outcomes in the West by creating the opportunity to connect homes and jobs with fast metro to the WSIA and Aerotropolis.

UDIA believes the current plan for only six metro stations in Stage 1 is insufficient to support the kind of growth expected in the Western Parkland City and cannot be easily retrofitted later.

## The Urban AI pilot project

In 2018 UDIA launched the *Urban AI* pilot project focussed on the WSAM with an ambition to explore how machine learning twinned with computational design modelling could contribute to better strategic transport and land-use decision making and future city communication. UDIA has been working on our 3D city modelling platform - Urban Pinboard with data from leading research institutions and collaboration partners, including ground truthing work with over 30 government and landowner stakeholders.

The Urban AI project has used computational design to create a synthetic urban cadastre for the undeveloped parts of Western Sydney. The model is then linked to an AI Algorithm based on 3 million residential property sales, to provide a valuation assessment and a synthetic city visualisation of the 15 TOD centres and the new 'String of Pearls' for the Western Parkland City (Refer to **Error! Reference**



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Figure 1 – UDIA – urban AI future city model

Using this data, the Urban AI model has more than 26,000 buildings forecast in TOD centres along the complete stretch of North-South rail corridor out to 2056, and showcases the strategic merit for up to three more stations in Stage 1 of the Metro project: a station at Western Sydney University's (WSU) joint campus with TAFE at Werrington, a second station at Orchard Hills and an employment hub station at Badgerys Creek North.

Securing the right station locations for the Metro is imperative to the success of this project and positive catalytic transformation of the region. A station at WSUs Werrington Campus would deliver the vision for 25,000 jobs, 15,000 dwellings and 28,000 students that are forecast within the Penrith Quarter and offers a critical opportunity to provide a source of highly skilled, quality jobs in the education and health sector. The decision for a no station alignment fails to maximise benefits in relation to addressing the deficiency in highly skilled jobs in Western Sydney, reducing residents and workers travel time and providing access to social infrastructure by public transport. We are advised that WSU would make a very substantial financial contribution towards this outcome.

The Urban AI project has modelled 9 station locations across Stage 1 (inclusive of St Marys) in addition to a further 7 in the southern extension to Macarthur and the spur connection between Bringelly and Leppington to connect with the South West Extension line (Refer to Figure 2).

The core objective of the Urban AI project has been to predict and visualise in 3D the urban morphology of the future city based on four base scenarios:

1. No WSAM
2. Full WSAM connection (Tallawong to Macarthur)
3. Stage One WSAM Only (St Marys to Aero Core) – limited stations
4. Stage One WSAM Only (St Marys to Aero Core) – maximum stations

This Urban AI model provides the evidence that UDIA needed to determine the optimal long-term city shaping investment for the Western Parkland city. Our position for Western Sydney is that this metro line is a once in a generation opportunity to provide a core piece of city shaping infrastructure with additional stations and town centres line (Refer to **Figure 2**).

The driving advocacy message is that by not delivering expeditiously on the full WSAM a car dependant, low job density 'suburban carpet' morphology is likely to materialise; therefore delivering an inefficient and non-30 minute city with poor connectivity and retarding the economic potential, affordability and accessibility of the Western Parkland City.

Based on a joint assessment undertaken by *City Futures, Ethos Urban, UNSW, and UDIA*, it predicted that by 2056, up to 78,000 dwellings (detached houses, townhouses and apartments) and up to 70,000 jobs could be created based on TOD approach at 18 proposed stations at full development on the WSAM (Refer to **Attachment No.1**).

We would welcome the opportunity to demonstrate our Urban AI project, together with the Penrith Quarter Werrington masterplan we have prepared with WSU on our future city platform Urban Pinboard.

## NORTH SOUTH RAIL LINK - POSSIBLE STATIONS

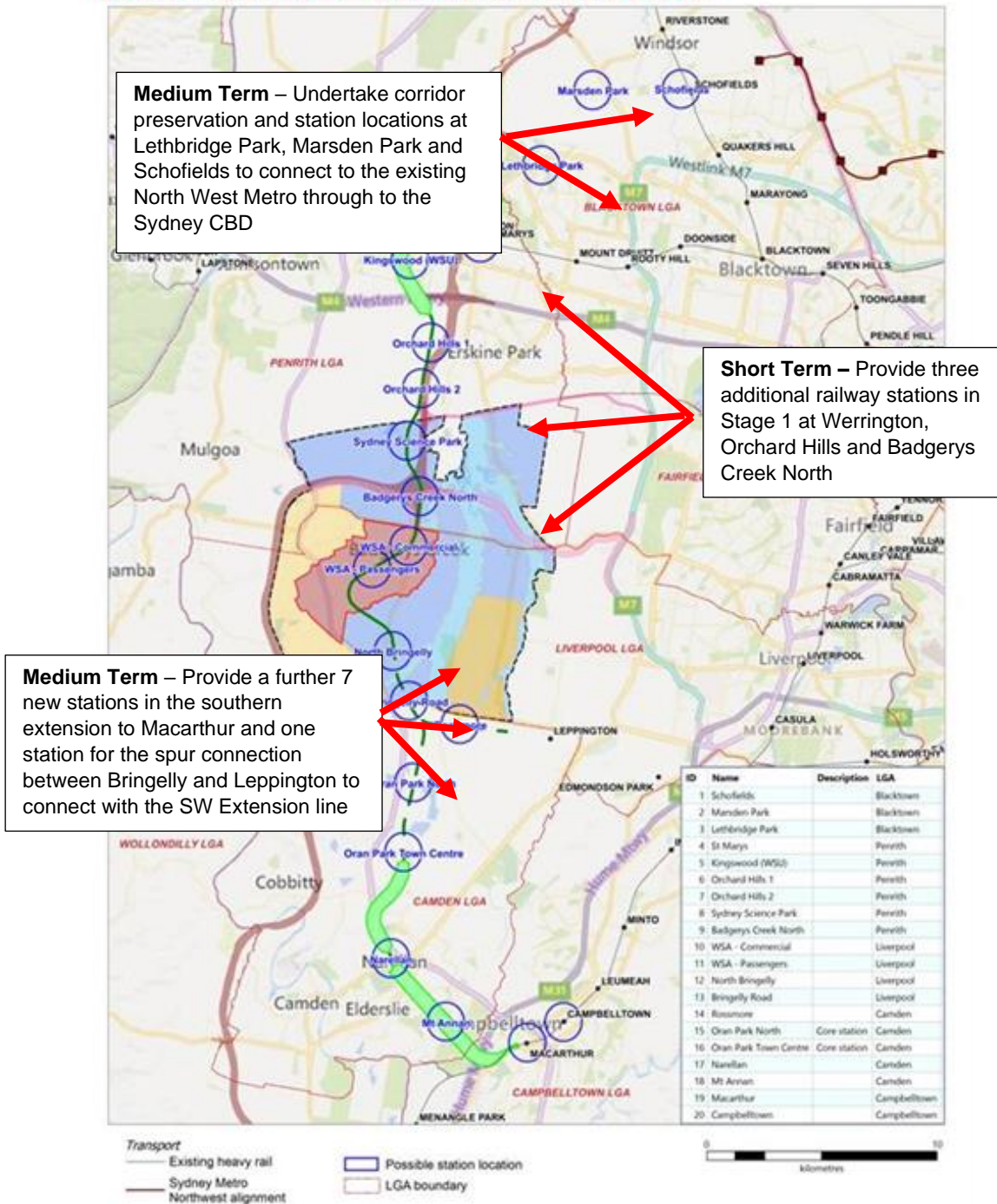


Figure 2 – Urban AI North-South Rail Line

**Recommendation 1.** Provision for additional rail stations on the proposed WSAM to support the Western Parkland City and Greater Western Sydney.

**Recommendation 2.** Provide a more cohesive TOD-based strategy which places the stations within a connected grid of road networks and achieve 30-minute cities.

**Recommendation 3.** Prioritise enabling infrastructure to service key centres to build the Western Parkland City around a TOD based 30-minute city urban hierarchy.

## 2. Precinct Planning of the Orchard Hills Town Centre

UDIA is concerned that there has been little precinct planning work on the proposed mixed-use Orchard Hills Town Centre and Station Precinct to give industry confidence as to how this centre will be delivered. For Orchard Hills, the following is presented in the EIS:

*The suburb has potential for future development and uplift through higher density residential within the catchment as part of the Greater Penrith to Eastern Creek Growth Investigation Area. Detailed planning for future land uses within Orchard Hills is still underway.*

The EIS does not confirm which agency will be responsible for the development of the Orchard Hills Town Centre and Station Precinct leading up to and once the rail line becomes operational.

UDIA understands that there is a lot of investment by government to develop a town centre that has an engaged community, provides a place of good design and appeal and is a location where people feel safe to live, work and play.

It requires significant cross-government coordination between key State and local agencies to develop the appropriate planning provisions that firstly attracts developers and then initiates place making outcomes that builds a community.

Experience suggests that without market tested town centre precinct plans, there is potential that development will not occur, and the planning vision will be undermined. Identified environmental constraints (flooding etc.) can also impact development momentum and cause long delays.

The proposed Leppington Town Centre provides a stark example of significant development delays and failure to provide an integrated land use and transport outcome for an area which has had access to Leppington Rail Station since 2015. The Green Square Town Centre is another example of where a 12-year development delay occurred from when the Green Square rail station was opened in 2000. This was mostly due to flooding issues, which were only resolved when the State Government funded trunk drainage infrastructure to “unblock” the development potential of this important area in Inner Sydney.

The *Northern Gateway Precinct Plan* (DPIE, 2020) provides the finer grain details for the Luddenham Town Centre and Station Precinct with no precinct plan covering Orchard Hills. The EIS is not definitive on the proposed mixed uses including commercial (offices, retail etc.) and residential (apartments, townhouses & detached dwellings). There is also limited commentary on the proposed community facilities needed to service a future population.

UDIA is concerned that without a market-tested precinct plan, no industry support and no committed coordination agency, there is a high potential that this town centre will suffer development inertia and experience a similar fate to the Leppington and Green Square town centres.

The EIS is also short on the detail for how the precinct will transform from a rural based area to a mixed used town centre with a supporting road and transport network. The EIS states:

*The roads in Orchard Hills, Luddenham, Badgerys Creek and Bringelly are predominantly characterised by unsealed road shoulders, with poor pedestrian and cycle facilities. It is however expected that these facilities would be improved in the long term, as urban development occurs with the Western Sydney Aerotropolis precincts.*

Again, there is no strategy for how the key road and service infrastructure will be provided to support the Orchard Hills Town Centre and Station Precinct.

UDIA is keen to assist government in the planning and delivery for this precinct. Our Urban AI is the computational method that can allow for a visualisation of market tested land use outcomes and yield planning provisions that could attract developer interest. This could allow an integrated outcome to be achieved and the timely development of the town centre with the opening of the rail line.

**Recommendation 4.** Involve the development industry in the future planning and delivery of the Orchard Hills Town Centre and Station Precincts leading up to the opening of the rail line to achieve a more integrated land use and transport planning outcome.

**Recommendation 5.** Sydney Metro to nominate a responsible delivery agency to focus on achieving development outcomes for the Orchard Hills Town Centre and Station Precincts leading up to the opening of the rail line.

**Recommendation 6.** Sydney Metro (and/or nominated coordination agency) to work with UDIA to develop market-tested precincts plans based on Urban AI for the Orchard Hills Town Centre and Station Precinct.

### **3. EIS Process and justification of proposed scope**

UDIA is deeply concerned by the lack of consultation for the huge strategic outlay of the WSAM. UDIA would like to represent the development industry in a more consultative method and transparent business case in developing the EIS.

UDIA is pleased to be able to respond to the EIS, however this one-in-a-hundred-year project takes extensive consultation with our members, many of whom consult to government and would provide insightful analysis and recommendations to government.

We believe the discussion around possible alternate routes would have been appropriate and welcomed by industry, as well as a robust business case which reflects the possible issues and benefits of multiple routes and options. The route assessment provided in the EIS is limited and does not provide convincing arguments for the single route provided nor with the justification of the location and number of proposed stations.

In creating a city, the size and scope of the Western Parkland City, industry and government need to come together to build a united and feasible vision for the West. The success of the WSAM line lies not in its ability to shuttle people from the airport, but it's ability to provide a place where people can live and work, attracting global talent to our Western Parkland City. It's success, as extolled by the Minister, is in the nearly 150,000 future residents and 200,000 future employees.

To realise this vision, the West *must* have mobility and it must have access to transport *where the people will live*. The Government will be well aware from other case studies, like Leppington, that it is not a matter of "build and they will come" as stations must be built and planned in consultation with industry's ability to deliver projects within the required timeframe.

There needs to be earlier and more meaningful engagement with landowners, which would assist Government in mitigating the investment risk. This level and degree of consultation would provide a better understanding of landowner capacity and ability to drive patronage on the metro line.

**Recommendation 7.** Sydney Metro to involve the development industry in the future planning and delivery of the WSAM to ensure developer buy in.

#### **4. Staying responsive and open-minded to new opportunities to achieve interface with future rail infrastructure and land release in the South West Growth Area**

Planning for WASM's southern portion is less advanced than its northern portion. However, the area south of the Aerotropolis is currently the focus of much of south-western Sydney's growth, with existing release areas approaching full development and new release areas under planning. The WSAM's southern portion passes through some of the release areas that are currently being planned.

There is potential that urban development in release areas will occur adjacent to the proposed corridor in the next five years. This will need careful planning and coordination to protect the future corridor, but equally it may present opportunities for innovative ideas to come forward from the development industry (e.g.) as new release areas develop adjoining the rail reservation, excavating parts of the corridor and constructing bridge crossings of the corridor in a "greenfields" environment. These could avoid additional cost inducing works being conducted later in a "developed" environment.

If these works were conducted by developers/landowners and complied with Sydney Metro specifications, it could reduce project costs and maybe considered as a SIC offset.

UDIA NSW recommends that Sydney Metro to work with industry on possible opportunities to reduce costs evolving from the provision of the future rail corridor and urban development as land release occurs.

**Recommendation 8.** Sydney Metro to work with industry on opportunities to reduce costs with delivery of the future rail corridor at the southern portion of WSAM once urban development occurs in the release precincts.

#### **Conclusion**

UDIA commends government for the delivery of this important piece of City building infrastructure to help grow the Western Parkland City, the future WSIA and Aerotropolis.

The project aligns with the UDIA's vision for Western Sydney Region to link the Aerotropolis with Greater Sydney and to support up to 184,500 new homes and 200,000 new jobs by 2036. We therefore strongly advocate for additional stations to provide a more compact and accessible city of TOD based stations rather than a sprawling carpet of low density across the Western Sydney.

To further support town centre development at Orchard Hills, UDIA strongly advises that government needs to heed the lessons of what occurred at Green Square and Leppington and not rely on the "build it they will come" approach. There is a lot of investment and time needed to build a town centre at Orchard Hills for mixed uses, especially in its current state as a largely rural fringe suburb. The role of a motivated coordination agency is crucial at the onset to bring together key government agencies, landowners, utility providers and industry working together to achieving planning outcomes.

UDIA advises that land use integration must be carefully managed to achieve the planning vision of the Western Parkland City and to provide for maximum efficiency in the delivery process for the WSAM and adjoining land release precincts.

UDIA especially supports greater consultation and collaboration between Sydney Metro and broader government with the development industry, especially since the rail line is a very long-term investment for a region that will experience significant change and growth.



The NSW Government needs to deliver a rail line for Western Sydney that supports job generation in the region beyond the construction phase. Without reconsideration of the station options, the Metro will have a more limited long-term economic benefit and will create commuter suburbs that support workers leaving Western Sydney for jobs in the east.

UDIA requests the NSW Government adopts the eight (8) recommendations contained in this submission to create a better opportunity to achieve liveable, affordable, and connected smart cities.

We would welcome the opportunity to demonstrate our Urban AI project, together with the Penrith Quarter Werrington masterplan we have prepared with WSU on our future city platform Urban Pinboard.

Please contact Mr Kit Hale on 02 9262 1214 or [khale@udiansw.com.au](mailto:khale@udiansw.com.au) to arrange a meeting to discuss any further matter related to the Western Sydney Airport Metro, Environmental Impact Statement, October 2020.

Yours sincerely,

A handwritten signature in black ink that reads "Steve Mann". The signature is fluid and cursive, with a long horizontal stroke at the end.

Steve Mann  
**Chief Executive**  
**UDIA**