



Memo: 30th October 2014

To: Urban Growth % NPC
Att: Craig Kelly
Re: **Response to M2 Site SSDA Submissions – Traffic & Transport Issues**

Dear Craig,

Further to our discussions, and receipt of submissions relating to the recent M2 Site State Significant Development Application (**SSDA**), ARC Traffic + Transport (**ARC**) has reviewed those submissions relating to the access, traffic and parking characteristics of the SSDA. A response in regard to each submission is provided below.

Section 1 below examines the RMS Submission; **Section 2** the Pirasta Submission; **Section 3** the City of Ryde Council Submission; and **Section 4** the SITA Submission.

As always, please do not hesitate to contact us with any further questions or comments.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Anton Reisch'.

Anton Reisch
Director, ARC Traffic + Transport

1 Roads & Maritime Service Submission

1.1 Wicks Road

1.1.1 **Wicks Road Queue Length Increases**

The TMAP Review examines a '*potential*' revised land-use mix (from that assessed in the TMAP) for the M2 Site (and indeed the broader North Ryde Urban Activation Precinct – **NRUAP**) with the overall objective of ensuring that [potential] future land-use mix revisions would not generate higher levels of traffic or result in greater traffic impacts than those determined in the TMAP, which remains the impact '*benchmark*'.

In this regard, the SSDA revised land-use mix considered in the TMAP Review clearly generates fewer trips, results in reduced impacts throughout the adjacent road network, and - as per the conclusions of the TMAP Review - would generally result in a requirement for fewer upgrades within the road network without exceeding the benchmark impacts identified in the TMAP.

Notwithstanding, in the forecast year 2031 the TMAP Review identifies an AM queue length of 345m south bound in Wicks Road to Epping Road, a longer queue length than that identified in the TMAP (219m). The TMAP Review also identifies an increase in the PM queue length from 105m (TMAP) to 182m (TMAP Review) for this same approach.

As detailed in the TMAP Review, this queue length increase arises further to a revised upgrade proposal/potential for the Wicks Road southbound approach to Epping Road, and specifically the removal of the TMAP recommended 45m right turn lane from Wicks Road southbound to Epping Road westbound. These queue increases are acknowledged in the TMAP Review: -

...at the intersection of Epping Road and Wicks Road...the extent of the proposed intersection upgrade has been reduced to reduce its impact on the surrounding land (requiring less acquisition). This change is expected to improve the feasibility and reduce the cost of the upgrade. The consequence is increased queues on Wicks Road. However, these can be managed by adjusting the green time given to the Wicks Road northbound and Wicks Road southbound signal phases.

As stated above, it is the conclusion of the TMAP Review that the length of the southbound queue in Wicks Road could be reduced by altering the green time provided to the Wicks Road southbound and northbound approaches; importantly, and specifically to address the Issue raised by the RMS – the TMAP Review does not propose a reduced cycle time for the major movements at the intersection – i.e. eastbound and westbound in Epping Road – but rather a reallocation of the existing cycle time provided to the [minor] Wicks Road northbound and southbound approaches.

Again, **this is a potential solution** to reduce the identified queue length increases based on the forecast 2031 traffic flows.

Notwithstanding, the Urban Growth contribution commitment of some \$10.4m for upgrade works external to the Site was specifically based on the upgrades recommended in the TMAP with reference to a higher trip generating North Ryde Urban Activation Precinct (**NRUAP**) land-use mix. This contribution was determined in a report for the [then] Department of Planning & Infrastructure in July 2013 (the **Contribution Report**) which specifically examined the TMAP upgrade recommendations, and then a proportional assignment of upgrade costs.

In regard to the upgrade of the Epping Road & Wicks Road intersection, the Urban Growth contribution specifically covers the [2013] estimated **total** cost of the TMAP recommended upgrades of Wicks Road north, i.e. the cost of providing both the 60m left turn lane **and** the 45m right turn lane. This contribution component was provided even though the Contribution Report identified the M2 Site being 'responsible' for only 50% of this upgrade based on a proportional assessment of 2031 traffic flows.

The Urban Growth \$10.4m contribution – including the \$2M estimated cost for the full upgrade of Wicks Road north in line with the TMAP recommendations - remains unchanged, even though the TMAP Review clearly indicates the potential for a revised scope of external upgrades, and even though the SSDA revised land-use mix generates a lower [proportional] level of total traffic at the intersection in 2031.

It therefore remains the responsibility of TNSW – in consultation with the RMS - to prioritise upgrade projects for which the Urban Growth contribution will be used, and as such it may be determined that the upgrade of the Wicks Road southbound approach to Epping Road includes an additional 60m left turn lane **and** the 45m right turn lane as original recommended in the TMAP, and as provided for by the Urban Growth contribution.

1.1.2 Future “New Road” to Wicks Road between Spine Road and Epping Road

The RMS notes the potential for a future road intersecting [the eastern side of] Wicks Road between Spine Road and Epping Road, as shown in Figure 4.5.05 of Ryde DCP 2014.

Urban Growth has no detailed information in regard to this [potential] future link road. The SSDA road network makes specific provision for a future road connection west from the Spine Road (through Lot 109) but the future design and operation of that road, and its interface with Wicks Road, is unknown at this time, and has not been considered (in regard to potential traffic generation or distribution) as part of the SSDA. The operation of any new road(s) and/or connection(s) to the external road network would necessarily be detailed as part of a future application of the adjacent area.

1.2 Delhi Road Shared Bridge

1.2.1 General Design Issues

- The bridge will be designed and constructed in accordance with all (Australian, AustRoads, RMS and other relevant) design standards.

- A community engagement plan for the construction of the bridge will be prepared in accordance with RMS requirements.
- Ownership and maintenance arrangements shall be determined further to consultation with key agencies
- All road, bridge and traffic control facility works associated with the bridge shall be undertaken by a suitably qualified contractor.
- A Construction Traffic Management Plan (**CTMP**) will be prepared prior to any construction works, and to the requirements of the RMS.

1.2.2 Works Authorisation Deed

Urban Growth will enter into a Works Authorisation Deed (**WAD**) with respect to: -

- The design approval and certification process
- All appropriate RMS fees
- Easement requirements for the future maintenance of the bridge

1.2.3 Air Rights

It is acknowledged that Urban Growth is required to discuss air rights (relating to the bridge over the M2 Motorway) with both the RMS and the motorway operators. The invitation of the RMS to facilitate such discussions is appreciated and accepted.

1.3 Wicks Road & Waterloo Road & Spine Road

The design of the signalised intersection of Wicks Road & Waterloo Road & Spine Road will be finalised with reference to relevant standards, including but not limited to: -

- RMS Road Design Guide
- RMS Traffic Signal Design Manual
- AustRoads Guide to Road Design

The design will also incorporate the recommendations of a detailed **Road Safety Audit** prepared by GTA Consultants in regard to the Concept Design for the intersection. Ultimately, certified copies of the signal design plans – to be prepared by a suitably qualified practitioner – will necessarily be provided to the RMS for approval prior to any construction work commencing.

Further to consultation with the RMS, the design and construction of the signalised intersection may also be completed further to a WAD.

1.4 Left in Lane Epping Road to Spine Road

The left turn only lane in Epping Road has been amended in response to SSDA land-use revisions within the Mixed-Use Precinct, and to Ryde Council submissions relating to the movement of heavy vehicles through the Site.

The proposed Epping Road entry [left] lane will be designed as an extension of the existing **service lane** adjacent to the Epping Road commercial developments (Officeworks, Domayne and Harvey Normal) which currently extends east to the Epping Road pedestrian overpass. This lane is delineated with a concrete (white) dish drain, providing visual and spatial separation from the adjacent traffic lane (left turn only at Delhi Road).

This same design profile will be extended through to the Site, and provide two ingress only access points, the first being to Spine Road, and then to Lot 104; the Lot 104 access would provide service vehicle entry only.

The design of the extended service/access lane, and thence entry points to the Spine Road and to Lot 104, will be prepared in accordance with relevant standards, including but not limited to: -

- AustRoads [Guide to Road Design](#)
- RMS [Guide to Road Design Supplements](#)

The design will also incorporate the recommendations of the Road Safety Audit, and certified copies of the design plans – to be prepared by a suitably qualified practitioner – will be provided to the RMS for approval prior to any construction work commencing.

Further to consultation with the RMS, the design and construction of the signalised intersection may also be completed further to a WAD.

1.5 Standard Comments/Conditions

1.5.1 **General**

- It is acknowledged that the financial contribution associated with the SSDA will be provided to TNSW, not the RMS
- It is acknowledged that the disbursement of that contribution would be overseen by TNSW, not the RMS
- It is acknowledged that the TNSW will be the lead agency in regard to Delhi Road widening, not the RMS; and that upgrades are primarily proposed on local roads (on approaches to State Roads) and therefore Ryde City Council will be the lead agency, not the RMS.

1.5.2 **M2 Direct Access**

- No access is proposed to the M2 direct from the M2 Site.

1.5.3 M2 Site Construction Traffic Management Plan

A CTMP for the broader M2 Site works will be prepared in accordance with RMS requirements for primary construction tasks, and would specifically include consultation with both Council and the RMS in regard to key issues prior to submission.

2 Pirasta Submission

2.1 Upgrade of External Intersections

2.1.1 **Epping Road & Wicks Road**

See [RMS Response 1.1.1](#) above.

2.1.2 **Waterloo Road & Wicks Road & Spine Road**

The intersection of Waterloo Road & Wicks Road & Spine Road is to be upgraded as part of the SSDA at the cost of Urban Growth. The intersection will be under signalised control, with additional lanes and the majority of cycle time dedicated to the existing key movements, Waterloo Road west to Wicks Road southbound; and Wicks Road south to Waterloo Road westbound. Further to the upgrade, the intersection is forecast to operate at a good level of service through 2031. (See also [RMS Response 1.3](#) above)

2.1.3 **Lane Cover Road & Waterloo Road**

At the intersection of Lane Cove Road & Waterloo Road, the [TMAP](#) recommends the provision of an additional left turn lane (Waterloo Road east to Lane Cove Road south) and the redesignation of the existing lanes to provide 1 through lane (Waterloo Road east to Waterloo Road west) and 2 right turn lanes (Waterloo Road east to Lane Cove Road north). The [TMAP Review](#) concludes that these upgrades remain relevant further to the SSDA land-use mix.

It remains the responsibility of TNSW to prioritise and instigate such upgrades.

2.2 Additional Issues

2.2.1 **Reliance on the [TMAP](#) trip generation rates**

The trip generation rates for high density residential development used in the [TMAP Review](#) are actually higher than those which could be applied with reference to the recent RMS [Update of the Guide to Traffic Generating Developments](#) (**RMS Update**). The [RMS Update](#) specifically provides trip generation based on parking spaces in high density residential development, which reflects the fact that developments with fewer parking spaces simply generate few trips.

The rates used for the community, commercial and retail components of the SSDA are identical to those used in the [TMAP](#), **and again overall the SSDA revised land use mix generates significantly fewer trips than generated by the approved [TMAP](#) land-use mix.**

Ultimately, the [TMAP Review](#) shows that the SSDA land-use mix generates significantly fewer trips than were forecast in the approved [TMAP](#), but regardless the contribution provided by Urban Growth for external network upgrades remains unchanged, being that based on the higher generating [TMAP](#) land-use mix.

2.2.2 Reduced Wicks Road turning lanes

See [RMS Response 1.1.1](#) above.

2.2.3 Road Network '*still under considerable stress*'

The [TMAP](#) acknowledges that the road network in the vicinity of the Site will in the future continue to operate under stress, but it is the case that the [TMAP](#) and [TMAP Review](#) identified upgrades will provide tangible benefits to all road users and ameliorate the [contextually minor] trip generation of the NRUAP. It is also the case that the Transit Orientated Development (**TOD**) approved for the broader NRUAP specifically provides for lower trip generating development, utilising instead the excellent accessibility to public transport and commercial and retail development throughout the broader Macquarie Park corridor.

2.2.4 Consideration of future commercial growth in Macquarie Park

The 'base' traffic flow data for the future assessment scenarios was provided by the RMS, and specifically extracted from the RMS Sydney Strategic Model (EMME/2) which includes land use data forecasts for all of Sydney, including the expected growth in Macquarie Park. The base traffic data was also cross-referenced (and was assessed against) the Ryde City Council Macquarie Park Corridor traffic model, which again accounts for the future growth of the area.

2.2.5 Intersection Upgrade Timing

As stated previously, it will be the responsibility of TNSW to prioritise upgrades through the external network. The [TMAP](#) provides a general schedule of upgrade timing to maximise capacity within the network, but again this will ultimately be the responsibility of TNSW to determine.

2.2.6 Upgrade Contribution

As part of the [TMAP](#) process, the Contribution Report detailed all of the upgrade costs outlined in the [TMAP](#), as well as a proportional breakdown to existing/forecast background traffic flows, and NRUAP traffic flows. The resulting contribution to upgrades by Urban Growth, agreed during the NRUAP finalisation process, is unchanged regardless of the fact that the contribution amount was based on the higher traffic generating [TMAP](#) land-use mix.

3 City of Ryde Council Submission

3.1 Pedestrian and Cyclist Paths

3.1.1 Cyclist navigating from the southern side of Waterloo road to the eastern side of the Spine Road.

Until such time as a shared path is provided along the entirety of Waterloo Road north (further to contributions from future development as per the NRUAP Finalisation Plan) it is proposed that signage be provided to direct cyclists between the Spine Road and Lane Cove Road (and vice versa) via available paths, and paths to be provided as part of the Wicks Road & Waterloo Road & Spine Road intersection upgrade.

In the short term, this signage would direct cyclists to, through and from the Site via the Community Park and Bushland Park along the north-eastern side of the Spine Road; across Spine Road at Wicks Road; and then across the southern Wicks Road approach to connect to the existing shared path on the western side of Wicks Road, and southern side of Waterloo Road.

It is proposed that signs such as those currently provided along Waterloo Road (for example advising cycle routes to East Ryde and Chatswood) would be amended to include (further to consultation with Council) key new destinations such as North Ryde Rail Station and Riverside Corporate Park. For trips from the Site, signage would likely indicate routes to (for example) Macquarie University and Macquarie University Hospital.

Council's suggestion of an on-street cycle lane in Spine Road itself would be no different to the short-term proposal outlined above, in that the cyclists would still be required to cross Spine Road at Wicks Road, and then cross Wicks Road south to reach the existing shared path on the western side of Wicks Road, and southern side of Waterloo Road.

The upgraded intersection of Wicks Road & Water Road & Spine Road will also provide a pedestrian crossing of the northern approach in Wicks Road which will accommodate the [future] upgrade to a shared path along the entire length of Waterloo Road north.

3.1.2 Cyclist and Pedestrians conflicts within the Community Park.

The shared path through the Community Park is designed to provide greater width than normal shared paths, and therefore provides considerable room for pedestrian and cyclists to manoeuvre around each other. At each of the access roads, the crossover to the future access roads will be provided in a different texture/style to specifically differentiate the "shared" environment (i.e. pedestrians and cyclists and vehicles).

Given the width of the shared path, the broader park environment in which it sits, and the broader environment of the Site, the potential for pedestrian/cycle conflict is very low, particularly compared to existing busy locations along the MATS such as Waterloo Road adjacent to the Macquarie Park and Macquarie University railway stations.

3.1.3 Internal intersections corner radii

The corner radii provided at key locations through the Mixed-Use Precinct has been specifically determined to meet the demands of STA buses travelling through the Site, but nonetheless have been “tightened” to the extent possible to reduce pedestrian crossing distances.

3.2 Pedestrian Bridge to Station Street

The shared bridge will not link to Station Street, or the ‘plaza area’ previously proposed as part of the Station Site North development.

It is currently proposed (per the Station Site North SSDA) that the development will not provide a ‘back door’ entry to North Ryde Rail Station from Station Street, and discussions with the STA indicate that Station Street will no longer be used for either bus stops or bus layovers. The absence of these components in Station Street means that it will essentially no longer function as a plaza or shared zone area, as there will simply not be the pedestrian/cyclist/public transport demand in Station Street which would drive activity such as would warrant the provision of a plaza/shared zone environment.

The proposed bridge landing to Delhi Road will be design to maximise safety and efficiency for all pedestrians and cyclists, and provides the most immediate access to North Ryde Rail Station from the M2 Site.

3.3 Traffic and Vehicular Access

3.3.1 Lot 104 Access

The SSDA revisions propose an additional service vehicle access point from Epping Road to Lot 104, immediately east of the Spine Road access point. This would allow service vehicles to travel in a straight path through Lot 104 and through the broader Site, reducing service vehicle turning (and general movement) demands in all roads and within Lot 104 itself. A broader Service Vehicle Management Plan would necessarily be part of a future Development Application for Lot 104 outlining measures by which to provide the most efficient access to service areas. (See also [RMS Response 1.4](#))

3.3.2 Access Way Cross-Overs

The SSDA amendments provide access ways with minimal width of 7.0m.

3.3.3 Waste Management for Lot 104 and General

As per [Council Response 3.3.1](#) above, it is proposed that service vehicles enter Lot 104 via Epping Road and then depart to Retail Street, reducing the drive crossing demand (and width) in the Retail Street active environment.

Broader service vehicle requirements (including waste management vehicles) across the Site will necessarily be detailed as part of future Development Applications for each of the super-lots.

3.3.4 Epping Road Bus Stop

The Epping Road bus stop relocation was identified in the approved [TMAP](#). As previously considered ([TMAP](#) Figure 7.9) the bus stop location will require the bus to merge from the existing (and extended) service lane across the adjacent through lane (left turn only to Delhi Road lane) to the eastbound Bus Only lane.

3.4 [Traffic Management & Upgrades](#)

All network upgrade works identified in the [Finalisation Plan](#) (and previously in the [TMAP](#)) as being the responsibility of Urban Growth will be completed as part of the SSDA. This specifically includes: -

- The signalisation of the intersection of Wicks & Waterloo & Spine and associated works
- The Spine Road and the Community Park and pedestrian/cycle facilities
- The Shared Bridge
- The Epping Road access to Spine Road and Lot 104

The [TMAP](#) and [TMAP Review](#) provide additional upgrade recommendations arising primarily from existing (and future) background traffic flows. As part of the NRUAP finalisation process, Urban Growth has provided a contribution of \$10.4M towards regional traffic and transport measures; the ultimate prioritisation and implementation of these upgrades will be the responsibility of the TNSW.

3.5 [Location of Car Shared Spaces](#)

It is anticipated that the 3 car share spaces within the Mixed Use Precinct would be provided on-street (likely in Park Street in proximity to the bus layover) and that the car share spaces within the High Density Precinct would be located within the access driveways (i.e. at grade outside of the individual buildings). This would maximise the visibility of and access to the car share spaces (as opposed to providing them within the individual building parking areas).

The issue of on-street occupancy for these spaces can be further determined in consultation with Council.

3.6 [Mixed-Use Precinct Shared Zone Conflicts](#)

The roads through the Mixed-use Precinct will have low traffic volumes and low posted speed limits, but are not designed as shared zones. Appropriate pedestrian and cycle crossing facilities will facilitate safe and efficient access throughout the Mixed Use Precinct.

3.7 [Lot 109 Road Connection](#)

See [RMS Response 1.1.2](#).

3.8 Road Safety Audit

A Road Safety Audit has been undertaken and is a primary reference for the finalisation of road infrastructure.

3.9 Trip Generation Rates

See [Pirasta Response 2.2.1](#).

3.10 Wicks Road & Waterloo Road & Spine Road

The signal phasing at this intersection will specifically provide maximum green time to the primary movements Wicks Road south left to Waterloo Road west; and Waterloo Road west right to Wicks Road south. Again, the broader design includes consideration of these primary demands, as well as factors such as pedestrian crossing demands and times (across all approaches) and will only be finalised further to RMS approval of signal design plans. (See also [RMS Response 1.3](#)).

4 SITA Submission

4.1 Wicks Road & Waterloo Road & Spine Road

See [RMS Response 1.3](#), [Pirasta Response 2.2.1](#), [Council Response 3.10](#).

4.2 Epping Road & Wicks Road

See [RMS Response 1.1.1](#).

4.3 Lane Cove Road & Waterloo Road

See [Pirasta Response 2.1.3](#).

4.4 Lane Cove Road & Epping Road

The intersection of Lane Cove Road & Epping Road is identified as an existing constraint in the [TMAP](#), but the broader NRUAP generates a very moderate number of trips to this intersection. Neither the approved [TMAP](#) nor [TMAP Review](#) provide detailed upgrade recommendations for this intersection.