



SSD 5093: STAGED DEVELOPMENT APPLICATION FOR STATE SIGNIFICANT DEVELOPMENT

Response to Submissions
and Additional Information

VOLUME 1



NOVEMBER 2014

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Report Number	Final

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Statement of Validity

Prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.

Response to Submissions and Additional Information Response prepared by:

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Address:	Urbis Pty Ltd Level 23, Darling Park Tower 2, 201 Sussex Street Sydney NSW 2000
In respect of:	SSD_5093: North Ryde Station Precinct (High Density Residential and Mixed Use Sub-Precincts) Stage 1 Preliminary Works State Significant Development.

Applicant and Land Details:

Applicant:	UrbanGrowth NSW (Reference: Simeon McGovern)
Applicant Address:	Level 14, 60 Station Street, Parramatta NSW 2150 PO Box 237, Parramatta NSW 2124
Land to be Redeveloped:	The High Density Residential and Mixed Use Sub-Precincts (also known as the 'M2 Site') of the North Ryde Station Precinct, being land bound by Epping Road, Delhi Road and the M2 Motorway at North Ryde and legally described as Lot 101 in DP 1131776 and part Lot 2 in DP 528488 and Lot 7 in DP1046090
Lot and DP:	Lot 101 in DP 1131776 and part Lot 2 in DP 528488 and Lot 7 in DP1046090
Project:	North Ryde Station Precinct (High Density Residential and Mixed Use Sub-Precincts) State Significant Development.

Declaration:

I certify that the contents of the Environmental Impact Assessment to the best of my knowledge, has been prepared as follows:

- In accordance with the requirements of the Schedule 2 of *Environmental Planning and Assessment Regulation 2000*; and *State Environmental Planning Policy (State and Regional Development) 2011*.
- The information contained in this report is true in all material particulars and is not misleading.

Name Murray Donaldson, Director

Sarah Houston, Senior Consultant

Signature:



Date: 31/ 10/ 2014

31/ 10/ 2014

1 Introduction

1.1 OVERVIEW

This Submissions Report has been prepared on behalf of UrbanGrowth NSW, the proponent for the Staged Development Application for State Significant Development SSD_5093. The application was lodged in June 2014 and seeks approval for a Concept Proposal for subdivision and GFA allocation and Section 83B(3)(b) Works including site preparation, subdivision, civil works and public domain works on land known as the M2 site within the North Ryde Station Precinct (NRSP).

The application was placed on public exhibition in August and following its conclusion, the Department of Planning and Environment (DPE) issued correspondence dated 23 September 2014 requesting that the following now be provided to assist with the assessment of the application:

- A response to key issues raised by DPE including GFA allocation, pedestrian and cycle bridge, traffic and access and open space.
- Provision of additional information where requested or considered necessary.
- A response to the submissions received during public exhibition of the application.

This report provides a comprehensive response to each of the issues raised both by DPE and in the submissions received during the public exhibition with the provision of additional justification and technical information where relevant.

Amendments to the proposal to respond to key issues and amended mitigation measures have also been provided and are documented in this report.

1.2 EXHIBITION AND SUBMISSIONS

The correspondence from DPE, confirms that the public exhibition of the application concluded on 5 September 2014 with submissions made publically available on the DPE website.

A total of 14 submissions were received from members of the public, government agencies, City of Ryde Council and roads and utility providers.

The public and stakeholder submissions were provided to the proponent for review following the conclusion of the public exhibition period. The issues raised in the submissions have been assessed with a response provided in Section 3 of this report.

1.3 PURPOSE OF THIS REPORT

The report is structured as follows:

- Section 2: A response to key issues and the request for additional information in DPE correspondence dated 23 September 2014.
- Section 3: A summary of issues raised in the submissions and a response to each of these including provision of additional or amended technical information as appropriate.
- Section 4: A description of the amended proposal.
- Section 5: Revised mitigation measures.

This report is supported by the following technical studies provided in the appendices of this report. This information is intended to supersede that originally lodged in June 2014 while all other consultant reports remain unchanged from the EIA lodgement in July 2014 and can be found on the DPE website.

TABLE 1 – SUPPORTING DOCUMENTATION

REPORT	PREPARED BY	REFERENCE
Draft Subdivision Plans	Project Surveyors	Appendix A
Amended Urban Design and Landscape Plans	Batesmart / Aspect Studio	Appendix B
Amended Civil Plans and Report	Robert Bird Group	Appendix C
Pedestrian Bridge Plans and Report	ARUP	Appendix D
Traffic and Transport Response	ARC Traffic + Transport	Appendix E
Amended Ecological Impact Assessment	EcoLogical Australia	Appendix F
Amended Vegetation Management Plan	EcoLogical Australia	Appendix G
Letter from Australand regarding bridge landing	Australand	Appendix H
Submissions	Various	Appendix I
Voluntary Planning Agreement Letter of Offer	UrbanGrowth NSW	Appendix J

2 DPE Request for Additional Information

2.1 OVERVIEW

Correspondence received from DPE dated 23 September 2014 requires that the following be provided to assist with the ongoing assessment of the application:

1. Detailed response to specific key issues raised which relate to:
 - GFA allocation;
 - Pedestrian / cycle bridge;
 - Traffic and access; and
 - Open space.
2. Provision of specific additional information.
3. Detailed response to submissions received during the public exhibition from members of the public, City of Ryde Council, government agencies and community groups.

The following sections provide a response to key issues and additional information (specified in point 1 and 2 below). A response to all issues raised in the submissions is provided in Section 3.

2.2 RESPONSE TO KEY ISSUES

2.2.1 GFA ALLOCATION

GFA Allocation across the Site

DPE state the following in relation to the proposed Gross Floor Area (GFA) allocation:

“The proposed distribution of Gross Floor Area across the development lots varies from that envisaged within the Ryde Local Environmental Plan (LEP) 2010. Justification is to be provided for the substantial increase in GFA in the northeast corner of the site (Section W), noting that the floor space ratio controls within Ryde LEP seek to locate greater density in the centre of the site (Section X) which also benefits from proximity to public open space, the community facility and public transport”.

Density is an important element in creating a walkable and cyclable city. Compact development which concentrates development brings activities closer together, making them more accessible by foot or by bicycle, without the need to use a car for day to day trips. Density also ensures the viability of public transport, which is one of the key planning and urban design principles for the North Ryde Station Precinct UAP.

The creation of an accessible walking and cycling environment around the North Ryde Station has been assisted in the Bates Smart Master Plan by mapping the walking catchments from the North Ryde and Macquarie Park train station. The walking catchment map at **Figure 1** shows the potential walkable distance of 800m or approximately a 10 minutes' walk from both train stations.

The road networks are well-connected and there are direct routes for pedestrians and cyclists. Shared pedestrian paths and cycleway existing along Waterloo Road to Macquarie park train station. It is proposed to connect through the site along the proposed Linear Park and the shared pedestrian and cycle bridge to North Ryde Station.

The distribution of floor space from the centre of the site (Section X) to the northern end of the site (Section W), is not inconsistent with the objectives of locating density within the walkable catchment of public transport.

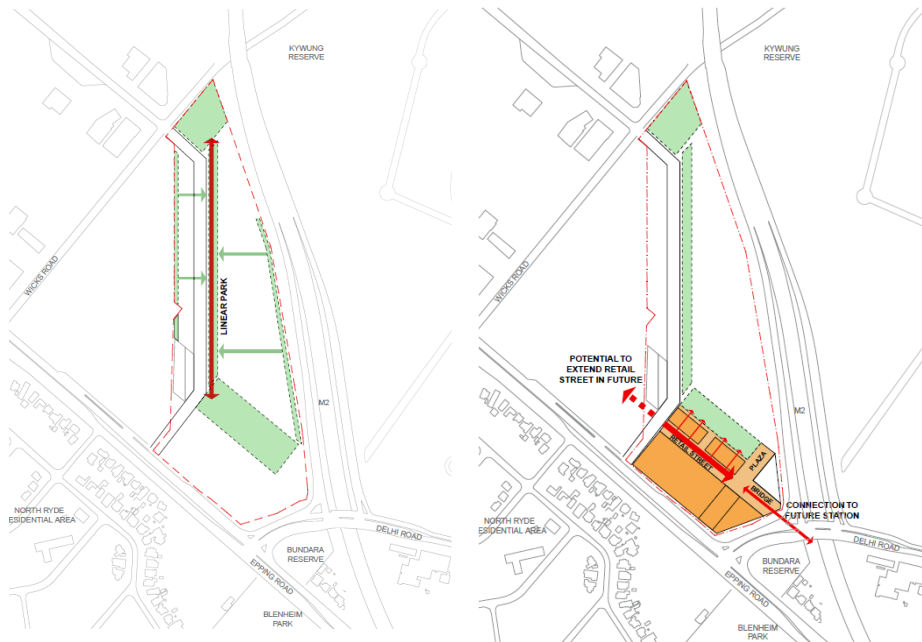
FIGURE 1 – PROXIMITY TO PUBLIC TRANSPORT



The urban design principles adopted for the site in the Bates Smart Master Plan for the M2 site, have modified the community pocket park identified in the DCP, and provided a larger linear park along the alignment of the Spine Road, that links the Northern Bushland Park to the Central Park. The proposed Linear Park arrangement provides a large number of buildings along its length with a park frontage providing good proximity to open space, and defines a pedestrian and cycle route through the site to the North Ryde Station.

All residents of the M2 Site will be within 400m (approximately 5 minute) walk of the proposed local centre focused on the retail street at the southern end of the site.

FIGURE 2 – PROPOSED LINEAR PARK: A PEDESTRIAN AND CYCLE LINKAGE THROUGH THE SITE



Urban design principles that underpin the GFA allocation

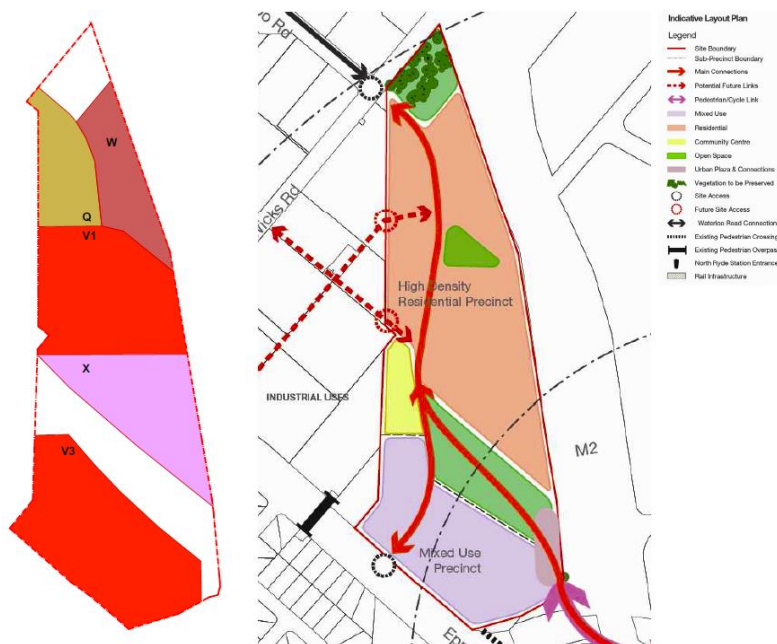
The Secretary's Environmental Assessment Requirements required the submission of plans and supporting documentation to identify the proposed distribution of GFA to the development superlots of this application. The proposal refines the GFA relative to the spatial arrangement of proposed development superlots as provided for under the gazetted FSR standards.

The FSR zones and Indicative Layout Plan for the M2 Site were based on an urban design arrangement for the site that was prepared for Transport for NSW. Refer to Figure 3 and Figure 4

FIGURE 3 - TRANSPORT FOR NSW MASTER PLAN



FIGURE 4 – RYDE LEP FSR ZONES AND NRSP DCP 2013 INDICATIVE LAYOUT PLAN



A number of issues were raised with the earlier Master Planning work that informed the FSR zones, including:

- Apartment towers predominately orientated to east and west and overlook the cemetery and motorway which will be a major deterrent to a large portion of the market.
- Inefficient road layout increasing construction costs and long term maintenance and unnecessary for access and servicing development lots.
- Large super lots with shared podiums and basements offer limited opportunities for staging.
- Mixed Use Precinct lot subdivision unable to accommodate a full line supermarket
- High percentage of non-residential land that is unlikely to generate commercial interest

The proposed distribution of GFA was developed from an Indicative Layout Plan prepared by Bates Smart Architects. The Indicative Layout Plan has been prepared, having regard to the following urban design principles:

- Alignment of the Spine Road lining Epping Road and Wicks Road.
- Providing open space at the northern and central parts of the site consistent with the Ryde LEP and DCP.
- Provide a linear Park that links the Central Park with the Northern Bushland Park with a width of 16 metres that provides a large number of buildings along its length with a park frontage, and defines a pedestrian and cycle route through the site to the station. The linear park forms part of an integrated water sensitive urban design strategy for the site.
- A Retail Street is located on axis with the proposed pedestrian bridge. It divides the land between the Central Park and Epping Road into a wide land parcel towards Epping Road and a narrower parcel (Lot 105 and Lot 106) for cafes and neighbourhood retail with dual frontage to the park. The wide parcel (Lot 104) can accommodate large retail tenancies such as a supermarket and showrooms.
- Neighbourhood Street within the site are extended into the neighbouring site to provide a legible network of neighbourhood streets.

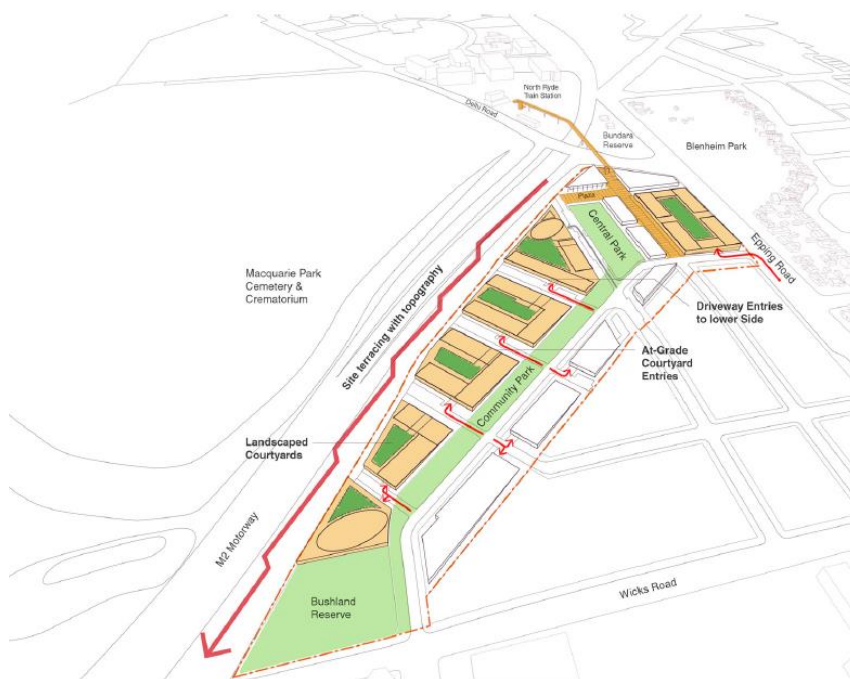
- Mews driveways separate the site into development parcels with a width of approximately 65m. These driveways are paved and landscaped spaces that are to provide an address and drop off for the individual buildings as well as visitor parking and access to basement car parking.
- Development blocks of varying sizes and configurations are proposed. A number of blocks have potential for further subdivision. A flexible staging strategy is accommodated to address market demands both in overall block sizes and the ability to stage larger blocks.

The Indicative Layout Plan has been prepared; having regard to the following built form considerations is illustrated in the following series of diagrams prepared by Bates Smart Architects:

Site terraces and courtyards

The future finished ground levels are proposed to minimise excavation and off-site removal of fill. This strategy creates a series of terraces, stepping down the site from south to north. Terraced courtyard levels allow for at-grade access from the southern edge of each block. Carpark entries will typically be located from the northern and lower edge of each block (Figure 5).

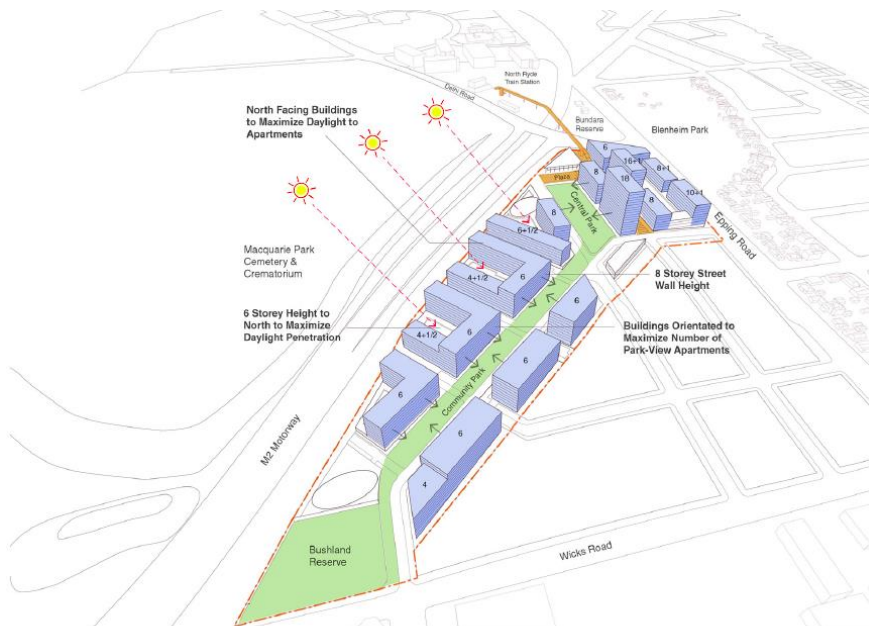
FIGURE 5 – SITE TERRACES AND COURTYARDS



Consistent block edge built form

Perimeter block buildings of 6-8 storeys in height define a consistent human scale to streets and public open spaces (Figure 6).

FIGURE 6 – CONSISTENT BLOCK EDGE BUILT FORM

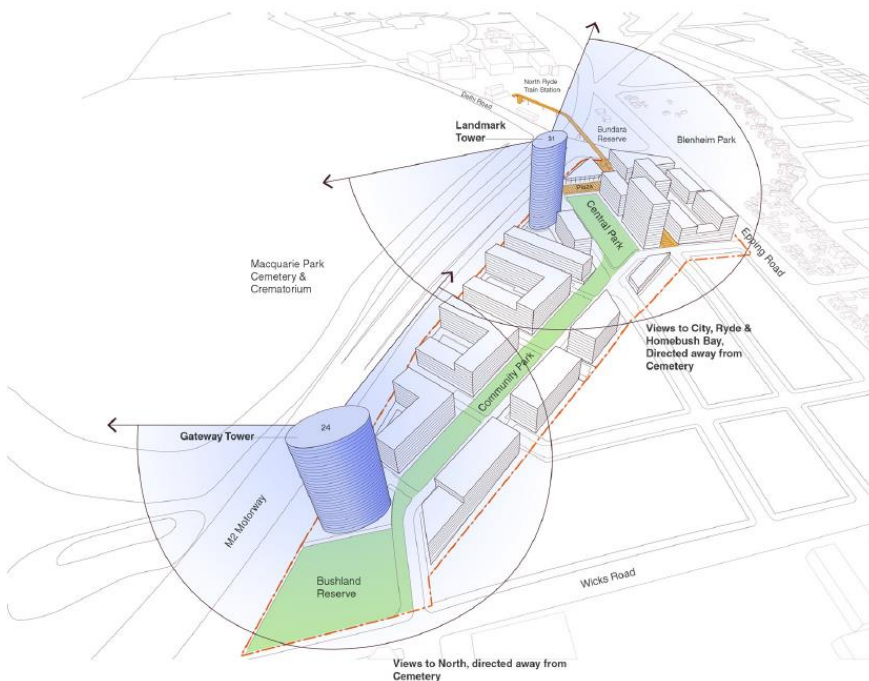


Landmark towers

A 31 storey tower to the north and a 24 storey tower to the south form urban markers that terminate either end of residential precinct. These landmark towers are located to minimise shadow impact on public open space with apartments orientated to capture bushland views to the north, the Blue Mountains to the west and the city to the south east while limiting views of the cemetery (Figure 7).

The Master Planning prepared for Transport for NSW, identified a 20 storey tower in the northern ends of the site (**Figure 3**). A similar scaled tower building of 24 storeys is provided in the Bates Smart Master Plan.

FIGURE 7 – LANDMARK TOWERS



Mid-block towers

Three 24 storey towers are located to the north of the Central Open Space and to the east of the spine road. The three towers are orientated north in a staggered pattern to maximise view sharing.

FIGURE 8 – MID-BLOCK TOWERS

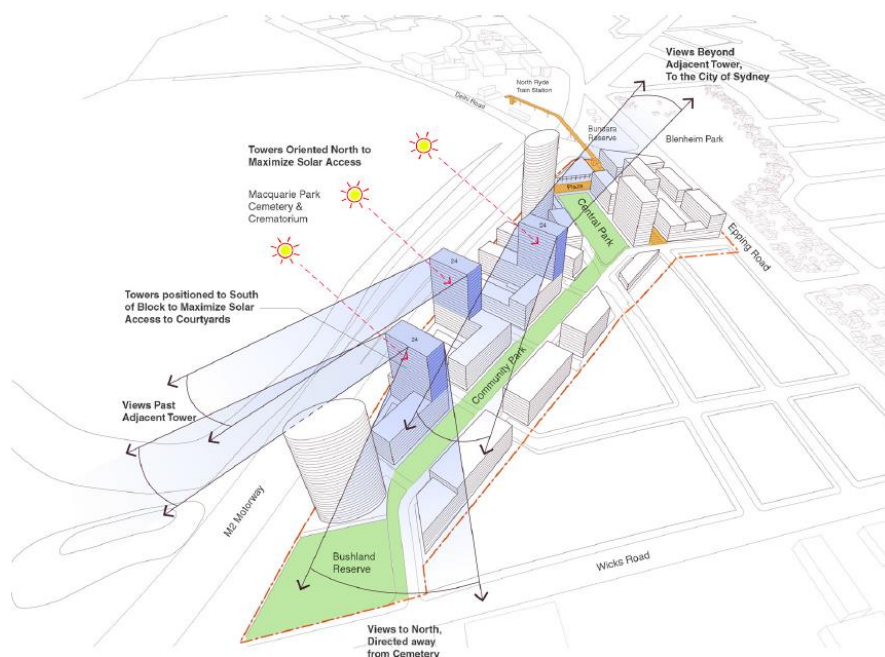
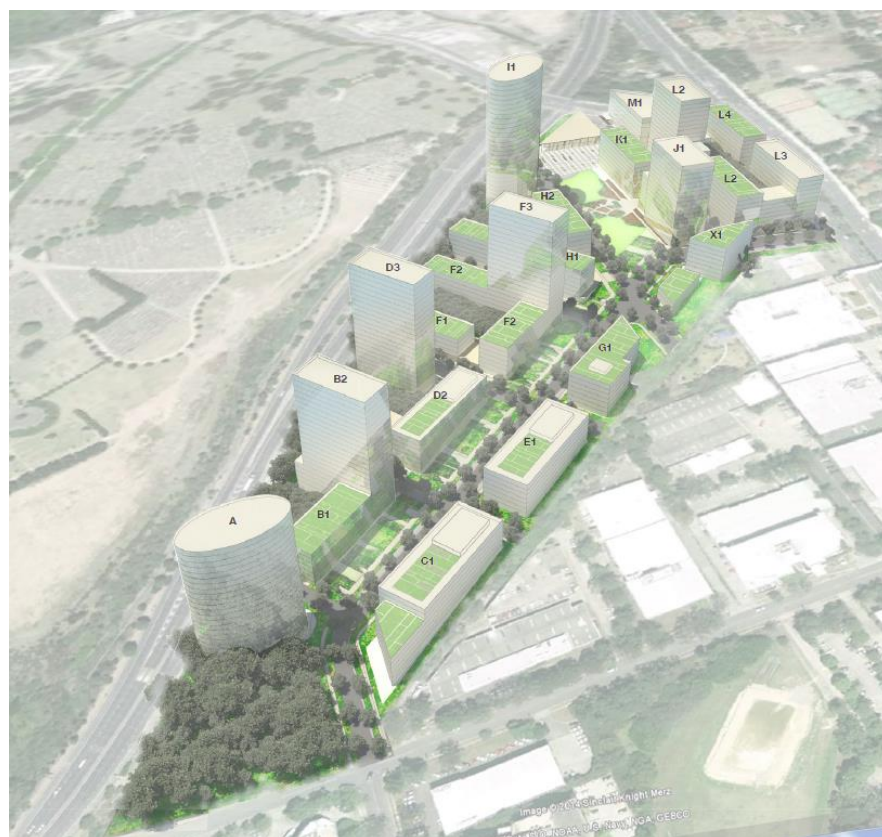


FIGURE 9 - OVERVIEW - 3D ARTISTS IMPRESSION



Inclusion of GFA associated with the Community Lot

DPE state the following in relation to the inclusion of community floor space in GFA allocation:

It also appears that part of the community lot (Lot 103) has been included in the site area for the purposes of GFA calculations. The Department is concerned that the GFA intended for the community lot has been partially transferred to the development lots. This area should be excluded from the site area and the allowable GFA calculation for the development lots.

The proposed development included allocation of maximum GFA on public open space Lot 103 of 2,500sqm for a community facility building which is to be the subject of a subsequent development application. It was proposed this facility would comprise of a sports and recreation facility and ancillary commercial use. Since the public exhibition of the application, UrbanGrowth NSW have had further discussions with City of Ryde Council on the use and location of community facilities on the M2 Site. Council has advised that the sports and recreation facility on Lot 103 would not be a viable. Council have indicated a preference for a medical centre and ancillary commercial use located within proposed Lot 104, which is entirely within the B4 Mixed Use Zone. Lot 103 is proposed as a public open space lot.

The proposal will ensure that residents benefit from the community facility which is essential to create a sustainable and liveable community. Further, the community facility will provide a public benefit and fulfils an important element of UrbanGrowth NSW's commitments outlined in the Infrastructure Schedule associated with the rezoning.

As documented in DPE's rezoning Planning Report, the community facility was originally envisaged to be allocated within the RE1 Public Recreation zone. The total GFA associated with the rezoning included residential, commercial and retail land uses and specifically excluded floor space associated with the community facility. The reallocation of the community centre from the RE1 zone on Lot 103 to the B4 Mixed Use zone in Lot 104 will result in a superior outcome better suiting the needs of City of Ryde Council, the local and future community and the overall site planning. The amendment to the location of the community centre to the B4 Mixed Use zone continues to provide important community infrastructure and achievement of the development potential of the site should not be impacted by a requirement to include the facility within the overall GFA.

Accordingly, given the public benefit provided by the community facility, the GFA and site area associated with the community facility has been excluded from the GFA allocation for development lots across the site.

It is requested that a condition of consent be imposed to specifically state that the allocated GFA associated with each development lot is to exclude that associated with the community centre.

2.2.2 PEDESTRIAN / CYCLE BRIDGE

Ecological Impacts

In relation to ecological impacts of the pedestrian and cycle bridge, DPE state the following:

The proposed pedestrian/cycle bridge may have physical impact on Bundarra Reserve and adjoining RMS site in terms of both the support pylons and overshadowing. Detailed consideration should be given to the impact of the bridge on the Sydney Turpentine Ironbark Forest (STIF) community located within this area including:

- *Measures to minimise impacts; and*
- *Whether any offsets are required.*

The Ecological Impact Assessment submitted with the SSDA has been reviewed in context of these comments. The assessment has been updated by EcoLogical Australia (refer **Appendix F**) and now provides a detailed assessment of the impacts associated with the proposed pedestrian and cycle bridge including the impacts of the physical structure and potential overshadowing on both Bundarra Reserve and the RMS site.

The amended Ecological Impact Assessment states that construction of the pedestrian and cycle bridge will result in the trimming of branches of the Ecologically Endangered Community Sydney Turpentine Ironbark Forest (STIF) estimated at 0.02 hectare (or 200sqm). The amended Ecological Impact Assessment also documents the following impacts:

- **Erosion and Sediment Control:** Bundara Reserve and the RMS site may be subject to indirect impacts relating to sediment or erosion control. This would be as a result of the construction works for the pedestrian and cycle bridge.
- **Stormwater run-off:** Bundara Reserve and the RMS site may be subject to indirect impacts of stormwater run-off during the construction phase for the pedestrian and cycle bridge. Potential impacts may include scour from heavy downpour events.
- **Management implications relating to pests, weeds and edge effects:**
 - No trees are to be removed, thus not increasing fragmentation at these sites. Some overshadowing of the bridge may result in an increase in shade loving plants.
 - The construction of the pedestrian bridge is not expected to result in increases in vertebrate pest species.
 - Movement of weed seeds into Bundara Reserve may occur during construction. Erosion and sedimentation measures may limit spread via water. Vehicles and site personnel are to adopt a 'clean on entry' protocol.
- **Visual, odour, noise, vibration, air quality and amenity impacts:** Bundara Reserve has been subject to construction related noise and light impacts. The existing continuous noise and light impacts on Bundara Reserve from Delhi Road are unlikely to increase such that nocturnal species using the STIF vegetation within the reserve would be significantly impacted by the proposal. No floodlights will be erected on the bridge. Lighting on the bridge will be directional and follow the 'dark sky' principle.

The amended Ecological Impact Assessment provides a number of mitigation measures to address these impacts including:

- Ensure all works within proximity to riparian zones and sensitive vegetation have adequate sediment and erosion controls, in particular construction of the retaining wall, scour protection structures, raised boardwalk and cycle and pedestrian bridge.
- Use directional lighting on the pedestrian and cycle bridge to limit light spill into the Bundara Reserve and RMS Site. No floodlighting is to be used in this area.

The amended Ecological Impact Assessment concludes the following:

These impacts are unlikely to be significant at a local or regional scale and will be mitigated via implementation of a CEMP and Vegetation Management Plan that will rehabilitate riparian SRW within the M2 Site. The developer should consider contributing to Bushcare works in the Bundara Reserve to mitigate against potential impacts as a result of shading from the bridge. Due to the small amount of clearing of native vegetation, an off-site offset is not considered necessary as a mitigation measure.

The recommendations of the amended Ecological Impact Assessment including contributions to bushcare works in Bundara Reserve have been included in the revised Mitigation Measures and provided in Section 5.

Bridge Design

DPE's comments with regard to a revised bridge design are addressed in the following sections.

Addresses any measures to protect the STIF community

As discussed above, the mitigation measures associated with protection of the STIF community and other ecological impacts have been established and included in the proposed mitigation measures as set out in Section 5.

Addresses the design issues raised by Council

The submission by City of Ryde Council has been reviewed in full and a detailed response provided in Section 3.2 of this report. The bridge design issues raised by City of Ryde Council are summarised as follows:

- *The bridge could be a distinctive and iconic element for the North Ryde Station Precinct.*
- *There are examples of pedestrian bridges in other states in Australia and overseas that achieve design excellence whilst satisfying practical considerations.*
- *The curved alignment of the proposed bridge lends itself to an unorthodox design solution which should be explored as part of the detailed design.*

A review of the proposed bridge design has been undertaken in accordance with Council and DPE comments. A revised bridge design has been developed by ARUP and KT Studio (refer **Appendix D**) which responds directly to the design issues raised by City of Ryde Council.

The truss style bridge has been revised to a tubular truss design and is a visually cohesive superstructure with a strong identity. The curvature of the structure would provide a softer and more sculptural appearance with a unique character which directly responds to City of Ryde Council's design comments. The revised pedestrian and cycle bridge design is proposed as a 'vivid blue' colour to emphasise its geometry and presence and complement the grey blue tones of nearby commercial buildings and the vegetation of Bundara Reserve and Macquarie Park Cemetery. The colour would add identity and enhance the legibility of the structure. The revised design is shown in A 3D perspective in **Figure 10**.

The revised bridge design also offers the following:

- The bridge design responds to desire lines of pedestrians and cyclists, whilst adding flexibility to respond to the various site constraints. The eastern end transitions into the public domain footpath along Delhi Road that leads to the North Ryde Station.
- The revised design incorporates "greening" across the bridge with hanging gardens introduced on sections of the bridge. These gardens will provide some protection from the elements and would contribute to the overall journey experience.
- The seating has been integrated by widening the bridge deck at specific locations, which combined with a larger radius of the tubular superstructure creates a more open and inviting character. The wider deck is located either in close proximity to the abutment or the piers to limit any impacts to the structure.
- The bridge's fluid, sinuous form and character continues into the park that has been designed with balanced sinuous curves, and playfully shaped beds of native grasses. The experience of being within the bridge continues into the open parkland setting of the raised mound, before gradually transitioning into the more formal geometric landscape design character of the spaces at street level (refer Figure 11).

FIGURE 10 – REVISED PEDESTRIAN AND CYCLE BRIDGE DESIGN



FIGURE 11 – M2 SITE BRIDGE LANDING



The revised design of the bridge proposes a landing zone within public open space on proposed Lot 103. Following discussions with City of Ryde Council, the community facility lot has been relocated within the Mixed Use Precinct (identified as proposed Lot 104).

In accordance with DPE comments and with due consideration of Council's submission, the revised Bridge Plans and Bridge Report is provided in **Appendix D** and is requested to form part of the approval documentation.

City of Ryde Council also request that DPE review the proposed bridge design against the requirements of Section 4.3 of the North Ryde Station Precinct Development Control Plan (NRSP DCP) to ensure that these provisions are adhered. A detailed assessment of the revised design is provided in **Table 2** below.

TABLE 2 – NRSP DCP: PEDESTRIAN AND CYCLE STATION LINK PROVISIONS

PROVISION	COMPLIANCE
A pedestrian/cyclist link is to be provided between the North Ryde Station and the mixed use precinct. This link will comprise a bridge between the mixed use precinct and Bundara Reserve and a safe pedestrian/cycle crossing (extension to bridge or at-grade crossing) between Bundara Reserve and North Ryde Station.	The bridge provides a pedestrian and cycle link between the North Ryde Station and the future Mixed Use Precinct on the M2 site. The bridge provides a safe pedestrian and cycle crossing between the M2 site and North Ryde Station.
The link and open space at either end will provide universal access between the mixed use precinct and the station precinct.	The link provides universal access between the Mixed Use Precinct and North Ryde Station. Open space areas are provided on the landing within the M2 site. The southern landing is provided on Delhi Road and is discussed further below.
The bridge is to be designed as a roll-on and roll-off design.	The bridge is a roll-on and roll-off design.
Access is to be barrier free.	Access to the proposed bridge is barrier free.
The bridge is to be constructed of lightweight materials to minimise the overall bulk of the structure and adverse visual impacts in relation to the Macquarie Park Cemetery and Crematorium.	The bridge will be constructed of lightweight materials which minimises the bulk of the structure. The revised bridge design maximises opportunities to provide visual amenity to bridge users by taking advantage of unique bushland vegetation setting within Bundara Reserve and views across Macquarie Park Cemetery.
Any signage on the bridge is to comply with the requirements of <i>State Environmental Planning Policy No 64 – Advertising and Signage</i>.	Signage is no longer proposed with the revised bridge design.
The bridge is to provide for a 5.5 metre clearance over Delhi Road.	The bridge provides a 5.5 metre clearance over Delhi Road.
The link between the North Ryde Station and the mixed use precinct is to be of sufficient width to safely accommodate dual pedestrian and cyclist movements.	The bridge design is 3.5m in width to safely accommodate dual pedestrian and cyclist movements.
The link is to be designed to minimise impacts on native vegetation in Bundara Reserve.	The impact of the bridge on vegetation in Bundara Reserve has been assessed by EcoLogical Australia and discussed further above.
Other design requirements for the bridge are: a. Provision of perforated galvanised steel safety	The revised bridge design includes: ▪ Mesh safety screens at approximately 3 metre in height. The mesh screens are a design element which visually

PROVISION	COMPLIANCE
screens 3 metre high over major roads; b. Provision of hand rails along full length of the bridge; c. Incorporation of wayfinding signage; d. Integration of lighting within the bridge deck and along the length of the pedestrian link; e. Incorporation of local drainage, with stormwater discharge point at either landing; and f. Provision of vertical transport and stairs to the Bundara Reserve, if required.	adds interest to the overall composition of the bridge while providing a subtle partial screening effect for the safety of pedestrians. ▪ Hand rails along the length of the bridge; ▪ The ability to incorporate wayfinding signage to and from the station; ▪ Feature lighting to accentuate the structure at night time. The lighting minimises light spill. ▪ Drainage and irrigation lines at key locations. The bridge does not propose vertical transport and stairs to Bundara Reserve, therefore minimising ground disturbance and impacts on existing vegetation.

Landing design/gradients

In relation to the location of the bridge landing, DPE state that options for a revised bridge design should be provided which:

Provides revised landing design/gradients within the site to address concerns raised by Council; and provides further consideration of the landing location/design within the Station North site, including options to connect into the future plaza.

In addition to DPE comments, the submission from City of Ryde Council notes the following:

- *The southern end of the pedestrian bridge should be connecting to the plaza area to be provided by the future development of Station Site North. The current alignment will fail to take advantage of the 2,900sqm plaza that should be delivered.*
- *It is noted that the alignment may have been proposed to maximise ease of access to the North Ryde Station but in Council's opinion this can still be achieved through the landing of the bridge at the edge of the plaza area.*

To address City of Ryde Council and DPE's comments on the southern bridge landing location, UrbanGrowth NSW have undertaken discussions with Australand, the future owners of the North Ryde Station North Site regarding the potential to provide the bridge landing at the plaza area associated with the sites future development. Correspondence from Australand in this regard is provided in **Appendix H** and notes the following issues:

- **Easements:** *Significant easements transverse this southern area which require authorities to access the site at all times with large vehicles. There is also an easement for fire fighting services which also must be maintained at all times.*
- **Contours:** *There is a significant fall from Delhi Road running to the south of the site of around 10m. This would make for extremely difficult and uninviting pedestrian access to this area, which a number of ramps and landings that cannot be built due to the points raised above with the requirements for easements and access.*

- **Acoustics:** This area abuts the existing ventilation discharge point for the North Ryde Station. This operates around the clock and is extremely noisy and prohibits any person from having a conversation within proximity of the ventilation discharge point.
- **Amenity:** Extensive traffic noise bounds this southern area resulting in poor amenity.

The correspondence also notes that Australand have previously met with City of Ryde Council to explain the site constraints listed above including a site visit. At this meeting there was general consensus that the southern corner of 1-17 Delhi Road was constrained and that the most appropriate and optimum urban design outcome for the pedestrian and cycle bridge landing was on Delhi Road.

The southern bridge landing adjacent to the Station North Site on Delhi Road is therefore proposed to be retained as originally proposed for the revised pedestrian and cycle bridge design.

2.2.3 TRAFFIC AND ACCESS

Queuing on Wicks Road

In relation to traffic and access, DPE request the following information is provided in relation to queuing on Wicks Road:

Consideration of the issues raised by Roads and Maritime Services (RMS) in relation to queuing along Wick Road. Alternate options/measures to reduce queuing should be considered, which do not involve changes to signal phasing at the intersection of Epping and Wicks Roads.

The issue relating to queuing on Wicks Road is raised by both DPE, RMS and City of Ryde Council and has been reviewed by ARC Traffic and Transport with a response provided in **Appendix E**.

The TMAP review (provided in Appendix I of the SSDA) assessed a potential revised land-use mix based on the GFA allocation and indicative layouts from that previously assessed in the TMAP for the site (associated with the rezoning of the site). This ensures 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 benchmark in terms of traffic impact.

In this regard, the land-use mix considered in the TMAP review generates fewer trips, results in lesser impacts throughout the adjacent road network, and could generally require fewer upgrades within the road network without exceeding the net impacts identified in the TMAP.

Notwithstanding this, the TMAP review identifies an AM southbound queue length in Wicks Road to Epping Road of 345m at the intersection of Epping Road and Wicks Road which is longer than the queue length identified in the TMAP (219m). The TMAP review also identifies an increase in the PM queue length from 105m (TMAP) to 182m (TMAP review).

As detailed in the TMAP review, this queue length increase arises further to a revised upgrade potential for the Wicks Route 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 as follows:

...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 to Epping Road could be reduced by altering the green time provided to the Wicks Road southbound and northbound approaches. It should be noted that there is no proposal to reduce the cycle time provided to the major movements (eastbound and westbound in Epping Road).

This is a potential solution to the identified queue length increase which can be further examined in consultation with the RMS. However, it should be acknowledged that the UrbanGrowth NSW contribution of \$10.4m for upgrade works external to the site was based on the upgrades recommended in the TMAP with reference to a higher trip generating NRSP UAP land-use mix. This contribution was determined in a report for the RMS which specifically examined the TMAP upgrade recommendations, and then a proportional assignment of upgrade costs to existing/background traffic, and to the NRSP UAP.

This contribution remains unchanged, even though the TMAP review clearly indicates the potential for a revised scope of external upgrades, and even though the NRSP UAP generates a lower proportion of traffic under then TMAP review land-use mix.

Transport for NSW are responsible for prioritising upgrade projects for which the 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 a 45m right turn lane as original recommended in the TMAP.

A specific response to the RMS submission is included in Section 3.3.

Modified Road Layout and Reserve Widths

DPE states the following in relation to the proposed road layout and reserve widths:

Additional justification should be provided for the modified road layout and reserve widths in the context of the Ryde LEP and the vision for the North Ryde Station Precinct (NRSP) as identified in Section 2.1 of the NRSP DCP.

A response to each of the specific issues raised is provided in **Table 3**. A Traffic and Access Impact Assessment response has been prepared by ARC Traffic and Transport and is provided in **Appendix E**.

TABLE 3 – RESPONSE TO TRAFFIC AND ACCESS ISSUES

REQUEST	RESPONSE
The future road connection (Lot 109) to the adjoining site. In this regard, the Department notes that the proposed location is inconsistent with the NRSP DCP, the Macquarie Park Corridor Proposed Access Network Map and the Planning Proposal for currently under consideration by Council.	Proposed Lot 109 is to form a road providing access to the adjoining land known as 29 Epping Road, 31-35 Epping Road and 111 Wicks Road and owned by Calardu North Ryde Pty Ltd. The provision of this road is subject to the gazettal of the current rezoning on this site which seeks to facilitate a mixed use precinct. One of the key aims of the proposal as documented in the Urban Design study prepared by AJ&C Architects and associated with the Planning Proposal is to increasing the permeability of the western edge of the site and wider Macquarie Park Corridor to the NRSP. This road lot allows for an orderly and well-designed transition from high density residential uses to mixed uses that may replace existing low rise industrial warehouse uses in the mid to longer term. The proposed road is therefore consistent with this aim. While the Macquarie Park Corridor Proposed Access Network Map envisages a road linkage from Wicks Road to the Spine Road within the M2 to the north of the proposed location. The proposed road link location reflects: ▪ The optimum road layout as presented in SSDA 5093

REQUEST	RESPONSE
	which has been reviewed and tested by ARC Traffic and Transport; and Meets the intent of the Macquarie Park Corridor Proposed Access Network Map by providing an appropriate road link to surrounding land uses and increasing permeability of the site within Macquarie Park. The proposed location provides for increased connectivity to surrounding land uses and integrates the proposed road system within the M2 to the wider Macquarie Park precinct.
The proposed location, design and function of the cycle/pedestrian path. The Department is concerned with the conflicts with other uses within the community park along the Spine Road including playground equipment, exercise equipment, seating, planting, and possible future building entries. Options to provide a separate clear, direct, safe and functional pedestrian/cycle way should be provided.	With consideration of DPE comments regarding open space and discussed in Section 2.2.4, the fitness equipment has been consolidated into one location close to Central Park on the southern side of the Linear Park. All future building entries will be from the mews roads removing the conflict associated with future building entries. As the areas of activation have been reduced throughout the Linear park, these areas are now protected from the shared pedestrian and cycle path by either being raised or lowered.
The absence of a dedicated footpath within the road reserve of the Spine Road. While it is acknowledged that the footpath is provided within the Community Park adjacent to the road, this should be reconsidered, particularly adjacent to the bus stop, where additional space will be required for standing and circulation.	A continuous footpath is provided on the western side of the Spine Road allowing access along the main road. Pedestrian crossings are also provided along this route to allow access to the eastern side. A continuous pathway is provided through the Community Park with appropriate links to the bus stops within the road reserve.

2.2.4 OPEN SPACE

Table 4 documents the issues raised by DPE in relation to open space with an associated response. The Landscape Plans has been updated by Aspect Studio in response to DPE comments and are provided in **Appendix B**.

TABLE 4 – RESPONSE TO OPEN SPACE ISSUES

REQUEST	RESPONSE
Consideration should be given to consolidating the playground and/or exercise equipment within the community park adjacent to the Spine Road to a larger facility within the Central Park. The Central Park should include shade structures over the play areas and demonstrate how the proposal meets the objectives of	As discussed above, the proposed play areas have been reconsidered in accordance with DPE comments and comments received by City of Ryde Council. The focus of play within the precinct will be Central Park, which will have a playground for all ages of a minimum 900sqm. The exercise equipment has been consolidated

Council's Children's Play Implementation Plan.	into one area within Linear Park and a small, informal nature play space has been retained within the Linear Park. Shade elements have been included within the children's play space in Central Park. The objectives of Council's Play Implementation Plan have been considered in the revised Landscape Plans.
The extent and location of boardwalks in the riparian area should be reconsidered balancing the need to protect ecological values of the area and Council's desire for enhanced access.	The revised route of the proposed boardwalks has been determined following a detailed site investigation with EcoLogical Australia. The route avoids all existing significant trees and habitat areas. The northern loop of the path is proposed as close as feasible to the creek and a lookout is located in a good vantage point for viewing into the creek. Educational signage will also be provided on the platform balustrade.

2.3 PROVISION OF ADDITIONAL INFORMATION

The letter from DPE requests specific additional information to assist in the continued assessment of the application. **Table 5** provides a response to each of these requests.

TABLE 5 – RESPONSE TO ADDITIONAL INFORMATION REQUEST

REQUEST	RESPONSE
Details on any discussions with City of Ryde Council and implications for the proposal, particularly noting Council's comments that some information within the Environmental Impact Statement is outdated (e.g. any proposed Voluntary Planning Agreement (VPA) and community facilities).	Updated information on the VPA and community facility proposals reflecting discussions between UrbanGrowth NSW and City of Ryde Council is provided in Section 2.3.2 of this report.
Clarification of whether UrbanGrowth NSW intends to enter into a VPA with Council and an updated on details of items to be covered by the VPA.	UrbanGrowth NSW intends to enter into a VPA with City of Ryde Council. There have been a number of discussions and meetings held between UrbanGrowth NSW and Council regarding the terms of a VPA with discussions surrounding: ▪ Community facility ▪ Roads ▪ Parks ▪ Stormwater ▪ Community facility This is discussed further in Section 2.3.2.
The analysis and conclusions of the Traffic Impact Assessment should be reviewed, as it was based upon a different GFA allocation to the EIS.	The Traffic Impact Assessment was based on the revised land-use mix based on the GFA allocation and indicative layouts.

REQUEST	RESPONSE
Confirmation as to whether there are any bus layover areas on the site.	Two bus stops are proposed to be provided on Spine Street (one in each direction) and on the Park Street / Plaza Street clockwise loop where the proposed bus zone length is sufficient to provide two bus setting down / layover spaces and one bus stop boarding point. Allocation of bus stops and layover zones has been included in the amended Civil Plans provided in Appendix C. The layovers are located on Park Street.
Confirmation of the intended ownership and use of proposed Lot 109 noting that the EIS states that Lot 109 is a Development Lot while the allocation plan indicates that it is a future road.	Calardu North Ryde Pty Ltd are the intended future owner of Lot 109. It is anticipated that this lot will be used to provide an access road to the site to the west subject to the sites rezoning. This is discussed further in Table 3.
Confirmation of the intended ownership and use of proposed Lot 108 noting that the EIS states that Lot 108 is a Development Lot while the allocation plan indicates that it is a social infrastructure allotment.	Lot 108 is to be dedicated to Council as a public open space lot.
Detail how the proposal has considered the Infrastructure Schedule contained in the Finalisation Report for the North Ryde Station Urban Activation Precinct noting Council's concern that some of the items should be separate to the \$10.4 million contribution towards regional transport upgrades.	Item 24 of the Infrastructure Schedule associated with rezoning of the site identifies that UrbanGrowth NSW has allocated \$10.4m towards regional transport upgrades. The schedule states that Transport for NSW and RMS have advised the majority of this funding should go towards the upgrade and widening of Delhi Road at North Ryde Station as a priority. The identification of specific regional upgrades and the timing, funding arrangements and regional contributions schedule are to be incorporated in the Growth Infrastructure Plan. The timing of the delivery of these items is subject to a VPA agreement with Transport for NSW which UrbanGrowth NSW have been progressing and will be undertaken in the order of priority established in Section 6.6.2 of the EIA. All of these items will be delivered as part of UrbanGrowth NSW's commitment to deliver appropriate infrastructure to support future development of the North Ryde Station Precinct. There is no indication in the Infrastructure Schedule or the Finalisation Report that these works should be independent from the same items identified elsewhere in the report. The \$10.4m budget is for regional transport upgrades and will be allocated for this use.
Further information on discussions held with Jemena Gas in relation to the proposed relocation of the existing gas pipeline and the proposed approval pathway for the relocation. Detail how the relocation of	Further detailed information on the proposed relocation of the existing gas main is provided in Section 2.3.1 below. Amended Civil Plans (13656-C-0-3-00 and 13656-C-0-9-

REQUEST	RESPONSE
the pipeline has considered relevant Australian Standards. Amended civil diagrams to be provided is required as the current plans illustrate that the high pressure gas main is maintained in its current location.	01) are provided in Appendix C showing the gas main in its proposed location.
Submission of plans that clearly identify the riparian corridor along Porters Creek.	The riparian corridor associated with Porters Creek is clearly identified in the updated Ecological Impact Assessment at Figure 12 on Page 33. This is discussed further in response to City of Ryde Council's comments in Section 3.2.
Consideration of issues raised by Council in relation to traffic and vehicular access, flooding and stormwater/water quality.	City of Ryde Council's comments with regard to traffic and vehicular access, flooding and stormwater/water quality are considered and a response provided in Section 3.2.
Consideration of the impact of existing non-residential land uses in proximity of the site on the proposal (e.g. SITA).	This application relates to subdivision and early works on the site. The rezoning of the site previously addressed the appropriateness of the proposed land uses in context of the surrounding land uses. The Air Quality Impact Assessment prepared by SLR for the rezoning of the site dated November 2012 assessed the impact of future development of the site with consideration to the SITA Ryde Resource Recovery Centre. The main air pollutants will be associated with odour, particulates and bio-aerosols. ▪ Historical information suggests that nuisance odour impacts may be experienced at the northern end of the M2 site during adverse weather conditions only. All other odour impacts are predicted to be below the allocated acceptable odour criteria. ▪ Dust deposition rates are not predicted to exceed the allocated acceptable impact criteria. ▪ It is considered unlikely that bio-aerosol concentrations due to composting operations at the RRRC will lead to adverse off-site impacts provided the appropriate dust controls are implemented on site. This assessment was based on establishment of appropriate buffers from the facility. As noted in the submission received by SITA (and discussed in Section 3.4), the facility operates under an Environmental Protection Licence and operates in accordance with the SITA policy and industry best practice with regard to impact on surrounding sensitive receivers. The submission also notes that the facility is required to adhere to licence conditions in relation to odour and is not to cause or permit the emission of any offensive odour.

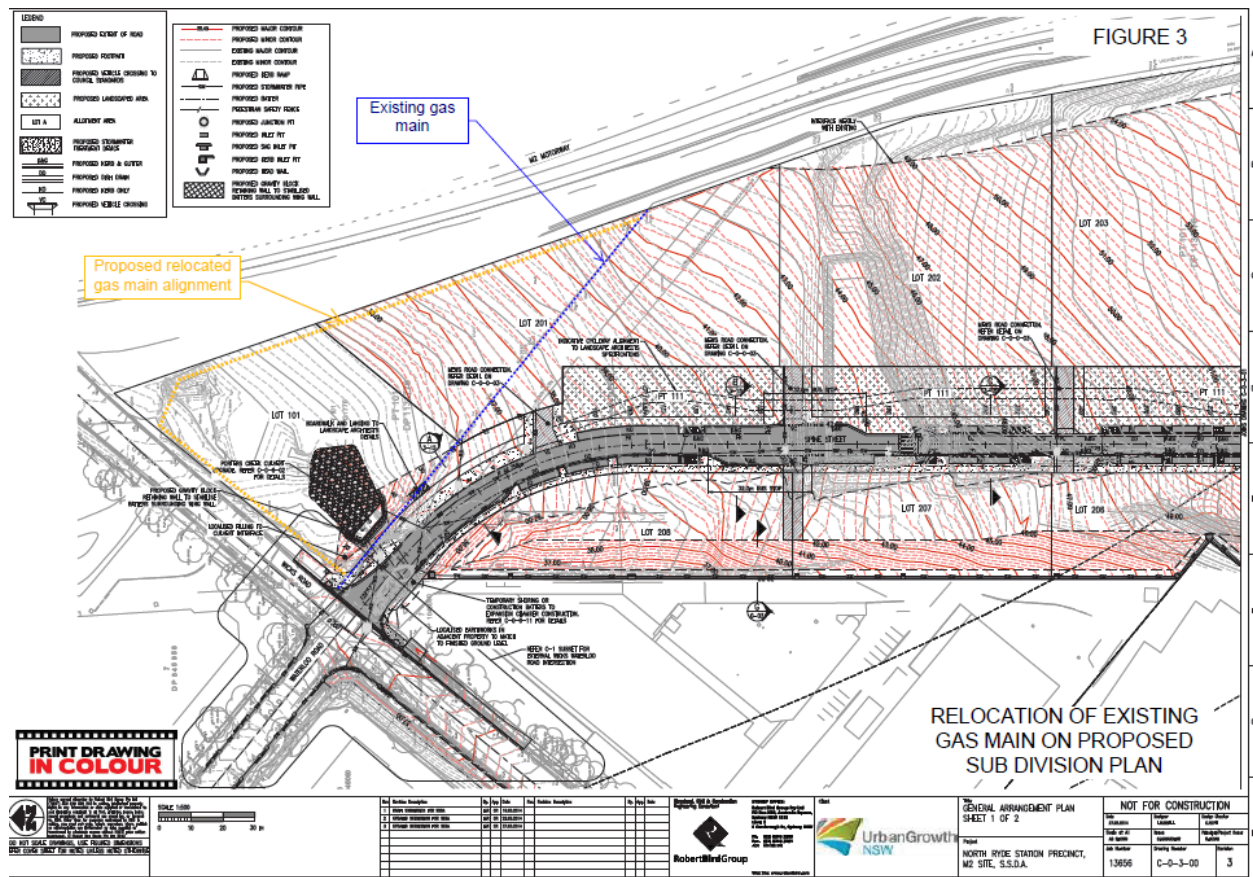
REQUEST	RESPONSE
	The strict control of odour, dust and bio-aerosols from the facility and the minimal impact associated with the proposed development means the impacts of the facility on residential development on the site will be negligible. The SITA submission notes concerns regarding construction and the following impacts: ▪ Water quality. ▪ Air quality including fugitive emissions from vehicles and machinery. ▪ Increase in heavy vehicle movements. ▪ Temporary noise impacts associated with excavation and vehicle movements. The Acoustic and Air Quality report submitted with the SSDA addresses the construction impacts and appropriate mitigation measures have been included. Water quality targets are established in the Storm Water Management Plan submitted with the SSDA with appropriate mitigation measures which will prevent impact on the SITA site. The Construction Environments Management Plan will ensure that heavy vehicle movements and works on site will be undertaken in an appropriate manner.

2.3.1 PROPOSED GAS MAIN RELOCATION

An existing gas main is aligned across the northern end of the M2 site approximately on an alignment parallel to Waterloo Road (refer Figure 1). It exits the M2 site on the northern side of the existing access road and extends westwards along the northern side of Waterloo Road. It is understood that the gas main was relocated to its present location within an unmade road reserve as part of the M2 roadworks. This road reserve was apparently closed in 2001/2 however the gas main was not relocated at that time. It is proposed to relocate the gas main along the eastern and northern boundaries of the M2 site and remove the existing gas pipeline (refer Figure 2).

The gas main is being relocated because it would be aligned through a proposed development lot on the M2 site and would significantly reduce the development potential of this land.

FIGURE 12 – RELOCATION OF THE GAS MAIN



The proposed works involved are:-

- Install protective measures for the trees to be retained;
- Install sediment and erosion controls along the route;
- Clear a 5m wide path along the eastern and northern boundaries as shown as the relocated gas main route;
- Progressively excavate a trench and lay the 150mm diameter gas main at a depth of 1.0m to 1.2m deep along the relocated gas main route;
- Progressively dispose of excess spoil on the M2 site;
- Progressively place selected fill over the pipeline and then replace excavated soil to fill the trench;
- Progressively stabilise the excavated area with vegetation and sediment and erosion control measures;
- At the creek, construct a temporary bund wall across the creek and excavate a trench in the bedrock across the creek;
- Place a pipe and concrete fill the trench and remove the temporary bund wall across the creek as soon as possible;
- Restabilise the creek banks at this crossing with hessian and vegetation.

There are hollow bearing trees along the route of the relocated gas main. These have been located by EcoLogical (refer Figure 2) and have been accurately located by land survey.

The existing gas main would be removed once the relocated gas main has been connected to the existing main. The methodology of removal would be essentially the same as the installation of the relocated main except the main would be removed from the trench.

The path of the relocated main and removal of the existing main has been devised by EcoLogical to minimise the disturbance to existing hollow bearing trees and minimise the disturbance to the creekline and potential bat roosting in the stormwater culvers under the M2 roadway. The EcoLogical assessment (see attached report) proposed a range of mitigation measures to ensure that the works will not have a significant adverse impact on the ecological features of the site.

EcoLogical has prepared an addendum report to their Terrestrial and Aquatic Assessment report which recommends a comprehensive list of mitigation measures which would be incorporated into the contractors environmental management plan. It also proposes a third zone in the Vegetation management Plan along the routes of the existing and relocated gas mains across the proposed bushland park at the northern end of the site.

The works for relocation of the gas main and removal of the existing gas main in the area of the bushland park would be undertaken within this zone 3 area in full compliance with the mitigation measures proposed by EcoLogical.

2.3.2 INFRASTRUCTURE DELIVERY AND FUNDING STRATEGY

The exhibited Environmental Impact Statement described the range of infrastructure that UrbanGrowth NSW propose to meet the demands of the proposed development. The infrastructure schedule was derived from a number of technical assessments and agency consultations that have informed proposed development. The Finalisation Report and the UrbanGrowth NSW letter to DPI dated 23 July 2013 documents UrbanGrowth NSW commitments associated with the development of the NRSP as set out in **Table 6** and **Table 7**.

Urban Growth NSW has progressed discussions with Transport for NSW and City of Ryde Council and amendments to the design and intended ownership of some of the infrastructure proposed have been made to reflect the outcome of those discussions. This section of the report provides an update with the details of discussions with the RMS and Council. Amendments to the design of public open space and roads and the pedestrian bridge have incorporated the feedback received during the public exhibition of the SSDA.

The exhibited Environmental Impact Statement included an outline of the UGNSW proposal to seek credits for undertaking infrastructure works and have these credits applied to future developers of the development lots. Urban Growth NSW wrote to the City of Ryde Council on 5 September 2014 to outline its claim for credits for works and land provided in the development of the M2 Site to meet the demands of services specified in the current City of Ryde Section 94 Contributions Plan.

Subject to Board approval, Urban Growth NSW is seeking to enter a VPA with Council. In summary, the VPA is proposed to include the following items:

- UrbanGrowth NSW will construct a community facility which the Council will take ownership of at an agreed date. The facility will have a design and construction value of \$7.8 million.
- UrbanGrowth NSW will construct and deliver a central park, a linear park, and regenerate the northern bushland reserve. The open spaces will be dedicated to Council at registration of the subdivision plan. UrbanGrowth NSW will be responsible for maintaining those open spaces for a period of 5 years from registration of the plan.
- UrbanGrowth NSW will construct and deliver the road network for the proposed subdivision known as Spine Road, Retail Street and Park Street and dedicate to the Council at the registration of the subdivision plan. UrbanGrowth NSW will be responsible for maintaining these roads for a period of 2 years from registration of the plan.
- UrbanGrowth NSW will construct and deliver the shared pedestrian and cycle bridge from the M2 Site to the North Ryde Station. UrbanGrowth NSW will dedicate this bridge to RMS

A copy of the UrbanGrowth NSW letter of 5 September 2014 setting out the credits sought from Section 94 contributions payable is provided at **Appendix J**.

UrbanGrowth NSW invites a condition of consent to enter into a VPA for the provision of local infrastructure listed with City of Ryde Council.

TABLE 6 –COMMITMENTS TO INFRASTRUCTURE PROVISIONS AS DOCUMENTED IN THE FINALISATION REPORT

MEASURE	COMMITMENT IN THE FINALISATION REPORT	COMMENT
Site Access Arrangements		
M2 site - Waterloo Road/Wicks Road traffic signals and pedestrian crossings	Staging will be reviewed by UrbanGrowth NSW during preparation of the SSDA for superlot subdivision, public domain and infrastructure works, in consultation with RMS, Transport for NSW and DP&I. Final intersection design will require RMS approval.	Proposed as part of this application. Amended design of the Wicks Road and Waterloo Road intersection has been prepared in response to Council's submission. Refer to Appendix C .
M2 site - Epping Road left-in only with deceleration lane	Staging will be reviewed by UrbanGrowth NSW during preparation of the SSDA in consultation with RMS, Transport for NSW and DPI.	Proposed as part of this application.
Project related transport measures		
Construct pedestrian bridge from M2 site to Station Site	UrbanGrowth NSW has allocated 100% of the funding of the pedestrian bridge. The bridge will be completed before the first buildings are occupied. UrbanGrowth NSW has undertaken consultation with Transport for NSW, RMS, Council and the Department, during its preparation of the SSDA.	Proposed as part of this application. Amended design for the bridge in response to Council's submission. Refer to Appendix D .
Community Infrastructure		
Multipurpose community facility: 2,500sqm community facility	Community facility to be delivered by UrbanGrowth NSW (or the future developer of Lot 104), with arrangements for dedication and local contributions levy offset to be negotiated with Council.	Community facility of up to 2,500sqm GFA within proposed Lot 104.
Northern bushland park: Minimum area of 4,000sqm	Open space to be delivered by UrbanGrowth NSW, with arrangements for dedication to Council and local contributions levy offset to be negotiated with Council.	Proposed as part of this application. Refer to amended landscape plans for public open spaces at Appendix B .
Community park: Minimum area of 2,000sqm	Open space to be delivered by UrbanGrowth NSW, with arrangements for dedication to Council and local contributions levy offset to be negotiated with Council.	Known as the Community Linear Park. Proposed as part of this application. Refer to amended landscape plans for public open spaces at Appendix B .

MEASURE	COMMITMENT IN THE FINALISATION REPORT	COMMENT
Central open space: Minimum area of 6,300sqm	Open space to be delivered by UrbanGrowth NSW, with arrangements for dedication to Council and local contributions levy offset to be negotiated with Council.	Proposed as part of this application. Refer to amended landscape plans for public open spaces at Appendix B .
Pedestrian plazas, mixed use precinct: Minimum area of 2,000sqm	To be delivered by UrbanGrowth NSW and/or future developers, with arrangements for dedication to Council for local contributions levy offset to be negotiated with Council.	Proposed as part of this application. Refer to amended landscape plans for public open spaces at Appendix B .

TABLE 7 – REGIONAL TRANSPORT COMMITMENTS TO INFRASTRUCTURE PROVISIONS AS DOCUMENTED IN THE FINALISATION REPORT AND URBANGROWTH NSW LETTER TO DPI DATED 23 JULY 2013

REGIONAL TRANSPORT PLANNING MATTERS		
A number of regional transport measures have been identified to reduce congestion in the Macquarie Park area.	UGNSW has allocated \$10,400,000.00 towards regional transport upgrades. Discussions between UrbanGrowth NSW, Transport for NSW and RMS have been undertaken with regard to a VPA framework and in principle agreement has been reached for the following: - the \$10.4m will cover the regional transport contributions required for the future development of the M2 site; - The government shall not request regional transport upgrade contributions from future developers of apartments, commercial and retail buildings; - The identified works are to be undertaken either by UrbanGrowth NSW or Transport for NSW. - The payment of contributions is to be triggered by the execution of the VPA and obtaining a consent for SSDA_5093. - The proposed works will be executed using RMS Works Authorisation Deed (WAP). - Method of payment – UrbanGrowth NSW will agree with RMS for each regional transport upgrade (see list below) with specific details for each project. Payment is based on an independent QS verification of the works incurred capped at \$10.4m. - The UrbanGrowth NSW contribution will be applicable to the following projects in the priority as listed:	Subject to a separate agreement with Transport for NSW and the RMS.

	1. Wicks/Waterloo Roads length turn lane from Wicks Rd into Waterloo Road 2. Upgrade to Wicks/Epping Rd intersection 3. Upgrade to Waterloo/Lane Cove Roads intersection 4. Upgrade to Epping/Lane Cove Rd intersection 5. Widening Delhi Rd adjacent to North Ryde railway station 6. Upgrade to Epping/Pittwater Rd intersection 7. Upgrade to Lucknow Rd ramp onto Epping Rd 8. Bus stop and facilities outbound on Epping Rd at Delhi Rd 9. Cycleways along Wicks/Waterloo Roads.	
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3 Response to Submissions

3.1 OVERVIEW

A total of 15 submissions were received during the public exhibition of SSDA_5093. Nine submissions were received from the following government agencies and utility service providers:

- City of Ryde Council
- Department of Primary Resources: NSW Office of Water
- NSW Office of Environment and Heritage
- Environmental Protection Authority
- Jemena Asset Management
- Sydney Water Corporation
- Roads and Maritime Services
- Transport for NSW
- Sydney Trains

Six submissions were received from the following members of the public and community groups:

- Sita Australia Pty Ltd
- Hunters Hill Flora and Fauna Preservation Society
- John McCain and Diane Michel
- Pirasta Pty Ltd
- Noreen French – Walsh

3.2 CITY OF RYDE COUNCIL SUBMISSION

A review of City of Ryde Council's submission has been undertaken and a detailed response to the issues is provided in **Table 9**.

TABLE 8 – RESPONSE TO SUBMISSIONS: CITY OF RYDE COUNCIL

ISSUE	RESPONSE
Planning Pathways	
The proposal as submitted by UGNSW does not adhere to the recently endorsed Development Control Plan Variations to be made to the Indicative Layout Plan, are only allowed where the indicative layout plan can demonstrate compliance with the Objectives of the Ryde LEP 2010 and the Vision for the precinct detailed in Chapter 2 of the DCP. This has not been detailed in the EIS. Certainty must be provided to ensure that the future	The proposal includes a number of variations from the NRSP DCP proposed as part of the SSDA. As discussed in the lodged EIA and acknowledged by Council, variations are acceptable under the NRSP on the following basis: ▪ Strict compliance with the controls may not be necessary, or may be difficult to achieve because of the particular characteristics of a development site. In these situations, Consent may be granted to a

ISSUE	RESPONSE
development of the lots will be in accordance with the master plan undertaken by Bates Smart. There are significant inconsistencies with the Master Plan and the DCP which will cause issues for Council during the assessment of future forthcoming DAs.	proposal that does not comply with the Controls in this plan providing the intent (i.e. the Objective/s) of the Controls is achieved. ▪ The Indicative Layout Plan (ILP) is intended as a guide to demonstrate how the objectives for the site may be achieved. There may be other options for the site's layout which may be more efficient and effective in achieving the vision for the Precinct. Variations to the ILP may be granted providing that the objectives of the Ryde LEP 2010 and the Vision in Chapter 2 of the NRSP DCP are met. As documented in the EIA, the proposed subdivision has been subject to a comprehensive master planning exercise undertaken by Bates Smart Architects. This has resulted in a number of key changes which form a superior and optimum outcome for the site compared with the previous scheme on which the NRSP DCP was based. As discussed in Section 2.2.1, the FSR zones and Indicative Layout Plan for the M2 Site were based on an urban design arrangement for the site that was prepared for Transport for NSW. A number of issues were raised with the earlier Master Planning work that led to the revised Indicative Layout Plan prepared by Bates Smart. The Indicative layout Plan facilitates an improved built form response with regard to: ▪ Site terraces and courtyards ▪ Consistent block edge built form ▪ Landmark towers ▪ Mid-block towers The current scheme demonstrates a high level of consistency with the objectives of the ILP. Given that the SSDA is for site preparation and civil works and public domain works and does not include any built form, non-compliance with the controls of the DCP is limited. The proposed layout continues to provide a high level of consistency with the aims of the Ryde LEP 2014 as follows: ▪ Encourages a range of development, including

ISSUE	RESPONSE
	housing, employment and recreation to meet the needs of the existing and future residents of Ryde, ▪ Provides opportunities for a range of housing types, ▪ Fosters development which has fully considered the environmental, economic, social and physical impacts (as assessed in the SSDA). ▪ Improves access to Macquarie Park and facilitates the use of public transport. ▪ Provides bushland areas and public open space. ▪ Provides employment opportunities. The Indicative Layout Plan is consistent with the vision for the Precinct as specified Chapter 2 of the NRSP DCP by: ▪ Maximising public transport patronage through provision of future residential development in proximity to North Ryde Station and provision of a pedestrian and cycle bridge connection. ▪ Activating spaces through appropriate mix of uses and community facilities. ▪ Providing an integrated Linear Park and Central Park public domain spaces encouraging their use and activation by key buildings. ▪ Providing a logical subdivision pattern for future employment, residential, retail and commercial land uses. Notwithstanding the above, in recognition of the variations from the NRSP DCP and its future role in guiding Council's assessment of separate built form DAs, proposed amendments to the NRSP DCP were tabled with DPE. At this time, DPE have not requested that this form a concurrent process to the SSDA assessment but UrbanGrowth NSW accept that this could occur prior to approval of any future DAs on the site.
Infrastructure Delivery	
The payment of \$10.4m is identified as item 24 in the Infrastructure Schedule associated with the Finalisation Report.	This is discussed in response to DPE key issues in Table 5 provided in Section 2.3.

ISSUE	RESPONSE
Many of these items are identified independently within the Infrastructure Schedule and should be independent from the \$10.4m contribution identified in item 24. This is of particular concern as it may result in some of the later items required never being delivered. It is unclear what the timing of the delivery of these items will be and whether they will be in place to meet the demands of the development / mitigate ongoing impacts. The timing for the delivery of this infrastructure must be clarified.	
Community Facilities and VPA	
The community facility is no longer proposed to be a “sports-court” type facility and the bridge landing design onto the M2 site cannot be achieved due to impractical gradients. Appendix T – Community Needs Assessment and Appendix G – Pedestrian Bridge Plans may not be relevant as they are likely to change and may require relocation of the intended Community facility due to a redesign of the bridge. Subsequently, the designs illustrated in Appendix D – Urban Design Report are likely to be unrepresentative of the outcome. UGNSW have acknowledged that changes to the SSDA will be unavoidable if it is to reflect the VPA between UGNSW and Council. Additionally it is noted that the application of Section 94 to the development and the consideration of works in kind or material public benefit is also the subject of ongoing discussions between Council and UGNSW. There are two individual lots which are to be utilised for Community Facilities. One is to be provided to Council and it is unclear what is to occur with the second.	As described in Section 2.2.1, Council has advised that the sports and recreation facility on Lot 103 would not be a viable and have indicative a preference for a medical centre and ancillary commercial use on the ground floor located within proposed Lot 104, which is entirely within the B4 Mixed Use Zone. Detailed design of the facility will be subject to a future Development Application. UrbanGrowth NSW intends to enter into a VPA with City of Ryde Council. There have been a number of discussions and meetings held between UrbanGrowth NSW and Council regarding the terms of a VPA and works in kind. Refer to Appendix J. Lot 104 is now proposed to accommodate the sports and recreation facility and Lot 108 is to be a public open space lot for dedication to Council.
Urban Design	
<u>Built Form</u>	
The proposed street and courtyard widths generally provide adequate separation between buildings. However, in some instance there are non-compliances, such as the distance between Buildings D2 and D3, F1 and F2, H1 and H2. Whilst these non-compliances can be addressed as part of any forthcoming DAs for the lots, Council is of the opinion that should the Department endorse the alternate layout, certainty on the delivery of the associated buildings must be provided. This should be provided by amending the DCP to ensure consistency with the master plan.	SSD_5093 does not seek consent for building envelopes. The Urban Design report prepared by Bates Smart and lodged with the application (Appendix D) included indicative building footprints to demonstrate how development may be accommodated on the site to respond to the proposed subdivision and illustrate at a high level the allocation of GFA. During discussions with DPE regarding a DCP amendment, the following was proposed to reflect the

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The built form outcome of these setbacks is not illustrated in the application. Sections through the street frontages should be provided so the intent of the setbacks can be understood. Clarification is required as to whether the 3m setback is defining an articulation zone with the build-to line being at the 3m setback with balconies extending beyond the 0m setback line. If the 0m setback is a build to line rather than articulation zone, Council does not support this. The current NRSP DCP details the setbacks for buildings surrounding many of the roads; however these have not been captured or reflected in the alternate layout. Of concern is the 0m building setback to the Community Park. The interface between the buildings adjacent to the Community Park needs resolution. It is noted that a detailed section showing the relationship between the buildings and the park has not been provided. To satisfy CPTD requirements, surveillance of the park should be provided by these buildings. However, the detailed design will also need to ensure that overlooking of the park does not inhibit its use. The 0m setback of the upper levels does not provide any buffer between the future dwellings and the park. This close proximity is an issue as the concept for the park shows future exercise areas and gathering spaces adjacent to the property boundary. This should also include consideration of potential direct access from ground floor units to the park to encourage activation of the public space. A minimum 2m landscape setback should be included along the frontage to the Community Park to allow sufficient flexibility.	indicative building footprints: - Amend the 3m minimum required setbacks for buildings fronting open space and plazas to allow zero setbacks to achieve a desired urban character; - Introduce a new control at No. 5 for ground floor and first floor setbacks. Referencing a new figure to illustrate the typical street setback condition. - Insert a new site wide plan to illustrate where specific street setbacks are required. - Buildings fronting open spaces and public plazas in the Bates Smart Master Plan have variable setbacks, and in some instances a zero setback is proposed. - A zero setback to the central park is appropriate an appropriate urban design response where ground floor non-residential uses are provided. - A zero setback for the community building and commercial building fronting the plaza spaces is appropriate to create an appropriate urban character consistent with the vision for the Mixed Use Precinct on the M2 Site. - It is proposed to retain the 3m setback for the North Bushland Park and the Community Park (linear park) - Indicative Layout Plan with a 3m setback on the western side of the Spine Road and a 3m setback on the eastern side of the Linear Park fronting the eastern side of the Spine Road. - Amend DCP table to achieve desired streetscape character for the Spine Road. As noted by Council, the majority of the indicative building separations comply with the Residential Flat Design Code Rules of Thumb. The 'non-compliances' associated with the separation distance between Buildings D2 and D3, F1 and F2 and H1 and H2 may be adequately resolved during the detailed design process associated with further DAs. For example, Building D2 may actually be extended to merge with Building D3 to form one residential flat building or the existing layout may simply be designed to provide the required setback.

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	The proposed setbacks allow for strong definition of the street edge within ground level built to the proposed lot boundaries within the Mixed Use Precinct. Setbacks are generally incorporated at the lower levels of buildings in the high density residential precinct to allow for ground level courtyard apartments with open space. The setbacks included in the indicative building envelopes have been allocated to respond to their location and the adjoining uses. The setbacks associated with the Community Park are 0m and are: ▪ Adjacent to a landscaped area of the Community Park. ▪ Provide appropriate opportunities for informal surveillance in accordance with key CPTED principles. The proposed interface allows for the following: ▪ Clear sightlines between public and private places; ▪ Landscaping that makes places attractive, but does not provide offenders with a place to hide or entrap victims. The gathering spaces associated with the Community Park are public spaces and the indicative 0m setbacks allow for clear delineation between public spaces from private areas. Figure 5 illustrates the terracing of development blocks along the length of the Linear Park, which minimise excavation and removal of soil from site. The intended design approach along the linear park is for the high quality landscaping to be incorporated within the public realm. Landscaping will assist to soften the podium walls, which will range in height from 1m to approximately 4m within the private developments lots along the length of the Linear Park. It is preferable to have a consistent landscape design outcome along the eastern side of the park, rather than incorporate an additional setback for lower building levels due to these topographic conditions. Access to ground floor units from the park will generally be limited due to the terrace arrangements. Proposed exercise areas have been consolidated to

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	the northern end of the linear community park, close to the central park in accordance with comments received from DPE and Council's comments.
Zone W is the second smallest zone on the site with a height limit of 75m under the provisions of the Ryde LEP. Relocating substantial GFA to this zone without increasing the height limit will lead to bulky buildings with larger floor plates. Larger floor plate residential towers are less likely to meet SEPP 65 and more likely to cast shadows that are broad and deep. Council would not support any increases in heights. - Under the provisions of the Ryde LEP Zones V1 and X have height limits of 99m. The height limits in the LEP locate the densest development at the core of the site – furthest from sensitive natural landscapes or adjoining sites and to promote the development of tall slender buildings that will meet SEPP 65 and cast shadows that move off other sites as quickly as possible. - The proposal to reallocate substantial Floor Space to zone W is not supported because: - FSR / permissible floor space is not a right and developers may choose to provide less – as this may lead to better design outcomes, respond to market. - Zone W and Zone Q are the least suited to an increase in FSR due to their small site area and the built form that will be created as a result. - Zones X and V1 are better options for accommodating increased GFA because they have higher height limits and the built form outcomes will be better. Having said that the differences in relation to moving GFA should be minimal and in the order of +/- 10%.	The allocation of GFA is discussed in response to the issues raised by DPE and with consideration to Council's comments in Section 2.2.1.
Open Spaces	
It is noted that the subject site is in close proximity of significant bushland areas. Council requests that the <i>Fraxinus americana</i> 'Urbdehl' be replaced with an alternative suitable deciduous tree species such as <i>Waterhousia floribunda</i> or <i>Pyrus calleryana</i>. Council's standard seat within open space areas is aluminium not timber.	In accordance with Council's open space comments: <i>Fraxinus americana</i> 'Urbdehl' has been replaced with <i>Ulmus parvifolia</i> 'Todd'. - The proposed outdoor seating has been amended to aluminium. These changes are shown in the amended Landscape Plans prepared by Aspect Studio and

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	provided in Appendix B .
<u>Bushland Reserve</u>	
Council supports the creation of an elevated boardwalk; however, the standard width for elevated boardwalks is 1.5m and should be applied to the Reserve. Further detail is needed on the planting species in the planter beds that run along the Spine Road towards the Bushland Reserve. These species must be suitable to the Shale Sandstone Transition Forest that is located in the Bushland Reserve. The use of these suitable species should be included in the planter beds from the northern most Mews Road towards the Reserve. Methods of construction of all items in the Reserve must be referred to Council for review prior to commencement to ensure the protection of this significant vegetation community. It is preferred that the Bushland Reserve boardwalk is not accessible for bicycles. Also, whilst it is recognised that the site is subject to flooding, the boardwalk should seek to interface with the creek to allow for stream watch programs and environmental education.	In accordance with Council's comments, the elevated boardwalk is proposed to be 1.5m in width. Species for the planting areas is provided in accordance with the VMP prepared by EcoLogical Australia. Three cultivars have been added to the species list as well as one additional plant being <i>Lomandra longifolia</i> 'Katie Belles' <i>Lomandra longifolia</i> 'Tanika', <i>Dianella caerulea</i> 'Little Jess' and <i>Pennisetum alopecuroides</i>. Methods of construction as proposed have been determined by the recommendations of the Ecological Assessment prepared by EcoLogical Australia to ensure protection of significant vegetation. This is included as a mitigation measure provided in Section 5. Bicycle hoops have been located outside of the Bushland Park along with appropriate signage. Due to the 1.5m wide of the boardwalk and to ensure wheelchair accessibility bollards at the entry are not considered appropriate in this instance. The northern loop of the bushland reserve path has been amended to be located as close to the creek as possible and locate a lookout in a good vantage point for viewing into the creek. Educational signage is also proposed on the platform balustrade.
<u>Community Park</u>	
The location of these areas should give consideration to potential ingress / egress points for the buildings. The location of the proposed gym equipment may find greater use by the community located within the Central Park. There is concern over the amount of activity along the shared bike path, including fitness areas, playgrounds, water features and seating areas. Consideration should be given to separating the bike path from the pedestrian and recreation area. The proposed play elements along the Community Park should be reduced and concentrated in the Central Park. Council is actively consolidating play areas across the City and in accordance with Council's Play Plan.	The fitness equipment has been relocated into one consolidated area located close to Central Park on the southern side of Linear Park. All future building entries will be from the mews roads rather than from Community Park frontage. The areas of activity has been reduced and simplified to three locations throughout the Linear park including a dog park, nature play and outdoor gym. These areas are protected from the shared pedestrian/cycle path by being either raised or lowered. The play park now only contains balance beams, rocks and a dry creek with a pump. This forms a place for informal nature play. The main

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There is extensive use of water in Community Park that will be a cost and maintenance issue for Council. Water gardens should be deleted.	focus of play in the precinct is in the Central Park. In accordance with Council's comments, there are no longer any water gardens proposed apart from the pump for the dry creek. The water will run on a concrete rill down to a permeable area draining into the ground.
<u>Central Park</u>	
The location of active retail edges fronting the central park is supported but the seating provided along the shop front should not be shown as public open space. The catchment for the Playground at this location would be, as a minimum, a "district" level playground. Under Councils' Play Plan, the size of this level playground should be 900 – 1950m². There should be consideration of the inclusion of shade structures over the play area. There are two areas shown as mass planted garden beds. Given the high numbers of residents this area should be explored for conversion to turf surface to allow for additional passive recreation areas for the community. A bubbler or water bottle refill station should be provided with ready access afforded to cyclists. The connection from the Central Park to the bridge of Delhi Rd is not centrally located to the park. Either the location of the crossing should be revisited or preferably another additional crossing be provided. It is noted however that this may interfere with the bus stop area along Plaza Street.	The seating provided along Central Park has been removed from the plans and will be considered further at DA stage for the retail uses. The playground design is a minimum of 900sqm. The Central Park will serve as a district level park containing a skate area aimed at beginners/children, an all ages playground, two BBQs with shade structures, a stage, two lawn areas one of which is suitable for community events and one more intimate for picnicing. Shade will be provided throughout the playground via trees and umbrellas. The large lawn area within Central Park has been increased in size to maximise its usability. Bubblers at which water bottles can be re-filled have been located throughout the development, including one in the Central Park. It is not possible to locate the crossing in the centre due to accessible ramp and bus stop requirements.
<u>Public Domain</u>	
Requirements regarding finishes on footways, shared zones and street lighting in the public domain are outlined in the City of Ryde Public Domain Technical Manual Section 6 - Macquarie Park.	The proposed footpaths, shared zones and street lighting are provided in accordance with Council's guidelines. A concrete shared path is proposed in the linear park and on the land mound. A large format / colour varied paving will be used for Central Park as well as cobble stones and interlocking stones in areas where we want traffic to slow down.
<u>Roads</u>	
Council is currently undertaking a review of its road construction standards which will be seeking to require all new roads to be constructed with concrete pavement. The initial specifications for these standards have been prepared and can be provided. Council would seek to ensure that any	Spine Street, Park Street (part) and Retail Street (part) are proposed to have asphalt concrete surfacing. Plaza Street, Park Street (part) and Retail Street (part) are proposed to have a concrete base

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future construction for the delivery of roads is in accordance with these standards.	with natural stone (granite) cobbles.
<u>Vehicle Footpath Crossing</u>	
Footpath crossings shall be constructed at all locations where vehicles cross the footpath, to protect it from damage resulting from the vehicular traffic and shall conform to <i>Ryde Environmental Standards - Development Criteria Section 4 - Public Civil Works</i> , and all relevant Australian Codes and Standards. Crossings are to be constructed to match the granite paving and finished levels shall conform to property alignment levels issued by Council's Public Works Group. Kerbs shall not be returned to the alignment line.	Footpath crossings have been designed to have natural stone surfacing of a different type to the surrounding footpaths (refer to landscaping drawings). The construction is designed to withstand vehicular traffic. Kerb returns are not provided.
<u>Lighting</u>	
All telecommunication and utility services are to be placed underground. New street lighting serviced by underground power and on multifunction poles(MFPs) shall be designed and installed to <i>Australian Standard AS1158.3.1-1999 Road Lighting</i>, with vehicular luminance category V3 and pedestrian luminance category P2 (Wicks Road and Epping Road) and categories V5 and P2 (all roads within the development site).	All telecommunication and utility services will be placed underground and an appropriate Mitigation Measure is provided in Section 5. Street Lighting design is fully compliant with Council's requirements and the relevant Australia Standards.
<u>Street trees and landscaping</u>	
Street trees and landscaping are to be provided in accordance with the <i>City of Ryde Public Domain Technical Manual Section 6 - Macquarie Park</i>. Generally the street trees appear to be satisfactory with the exception of specific references within this submission. It is noted that there appears to be a disconnect between the landscape plans and the utilities / services plan.	Services and tree pits have been coordinated. The trees have got an allowance of a tree pit size of 1200x900mm with a minimum soil depth of 1000mm. The tree pits also connects underneath the paving with structural soil to encourage a healthy root system. The only interfering services in the tree pit will be the light conduits at a soil depth of 1000mm - with the conduits will be enclosed in a concrete pipe. Disconnect between the Landscape Plans and the Civil Plans has been corrected in the amended plans provided with this report.
<u>Bus Stops</u>	
All bus stops shall be designed and installed in accordance with the requirements of the <i>Disability Standards for Accessible Public Transport 2002</i> .	All bus stops have been designed in accordance with <i>Disability Standards for Accessible Public Transport 2002</i>. The design longfall grades of the Spine Street and Epping Road locations are greater than the desirable maximum grades for accessibility however this is due to the topography of the site and cannot be

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	reasonably brought into compliance.
Transport and Accessibility	
<u>Pedestrian and Cyclist Paths</u>	
The Macquarie Park Active Transport Spine (MATS) is required to be delivered as Item 10 of the Infrastructure Schedule included in the Finalisation Report. 1. The spine road forms an integral part of the MATS, however there is a missing portion along the northern side of Waterloo Road that is identified in the Public Transport Facilities Plan as being delivered at a later date, subject to Section 94 Contributions. This small section of the missing link is provided along the Southern Side of Waterloo Road. This intersection of Wicks Rd, Waterloo Rd and the Spine Road should be designed for adequate access including any bike path located along the Spine Road. It is noted that the proposed route for Cyclist within the precinct is via a shared path within the Community Park. This will result in potential conflicts for: 2. Cyclist navigating from the southern side of Waterloo road to the eastern side of the Spine Road. 3. Cyclists and pedestrians within the Community Park. Including people using the Park and residents accessing future residential buildings. In the event of commuter cyclists who may travel at significant speeds, it may result in significant conflict / accidents. 4. Cyclist / pedestrians along the Park Street leading towards the bridge over Delhi Rd. It appears as though cyclists at the southern end of the Community Park heading towards the bridge over Delhi Rd are required to utilise the shared path along the northern side of Park Street. This may cause potential conflict with entry / exit points for buildings. This may not be an issue as long as the 3m Building Setback for all buildings along this side of the street is achieved as detailed within the Urban Design Report. Key solutions for this could include: 5. Detailed planning of the intersection of Waterloo / Wicks and Spine Road to ensure dedicated lanes / signalling for cyclists through this intersection. 6. Clear connection and legibility for cyclists directly to a dedicated bicycle lane along the spine road not located	Council's comments relating to pedestrian and cycle path have been considered in the traffic response provided in Appendix E and summarised below. 1. The proposed shared path on the northeastern side of Spine Street is designed so that future upgrade of the Waterloo Road shared path can readily connect to it. 2. 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 Finalisation Plan) it is proposed that signage be provided for cyclists between the Spine Road and Lane Cove Road. Signs such as those currently provided along Waterloo Road (advising cycle routes to East Ryde and Chatswood for example) would be amended to include key new destinations such as North Ryde Rail Station and Riverside Corporate Park (subject to further to consultation with Council). For trips from the site, signage would likely indicate routes to Macquarie University and Macquarie University Hospital. 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 (north to east); and then across the southern Wicks Road approach (east to west) to connect to the existing shared path. The proposed shared path on the northeastern side of Spine Street is designed so that future upgrade of the Waterloo Road shared path can readily connect to it. 3. The width of the proposed shared path through the Linear Park is 3.0m. The path will be insitu concrete paving. This paving surface will continue across the 'Mews Road' driveways (which are otherwise paved in small unit block paving) and will be line-marked to reinforce right of way for cyclists and pedestrians over cars.

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within the Community Park. 7. The footpath along Epping Road is to be full width granite paving with street trees in accordance with the <i>Macquarie Park Public Domain Technical Manual</i>. 8. The footpath and road carriageway are of appropriate design and widths to cater for pedestrians and vehicles. In some instances, such as the intersection of the spine street with the retail street and the plaza street, the corner radii could be tightened to better facilitate pedestrian movement. It is noted that the pedestrian crossing on plaza street could be shortened if a tighter radii is provided. 9. The scheme appears to rely on several pedestrian through paths on Lots 104 and 105 that do not appear to have been captured by an easement. This is particularly relevant given the significant amendments to the layout plan proposed and that the landscape / public domain plans clearly envisaged.	4. The 3m setback can be achieved and will be further considered during future Development Applications. 5. Discussions in this regard are continuing and will be finalised further to consultation with and approval from the RMS. 6. With regard to the short-term crossing of Wicks Road, the provision of a cycle lane within the 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 from north to south, and then cross Wicks Road south from east to west to reach the existing shared path along the southern side of Waterloo Road. With regard to potential conflicts, again wide path in a park and broader residential site environment, and less constrained activity than at other locations along the MATS, particularly near the railway stations. 7. The footpath along Epping Road is to be full width granite paving with street trees generally in accordance with the <i>Macquarie Park Public Domain Technical Manual</i>. 8. The corner radii provided at these locations 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. 9. The pedestrian paths have been included on the Subdivision Plans.
<u>Pedestrian Bridge</u>	
The proposed design is utilitarian in design and does not take advantage of the prominent nature of the bridge. The physical constraints of a bridge over a motorway are acknowledged. However, there are numerous examples of pedestrian bridges that achieve design excellence whilst satisfying practical considerations. The curved alignment of the proposed bridge lends itself to an unorthodox design solution which should be explored as part of the detailed design. The southern end of the pedestrian bridge should be connecting to the plaza area to be provided by the future	A detailed review of the pedestrian and cycle bridge design has been undertaken in accordance with Council and DPE's comments. A summary of the proposed changes is provided in Section 2.2.2.

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development of Station Site North. Whilst no definitive plans have been prepared for this site, the proposed bridge landing to the footpath of the southern side of Delhi Road. Whilst Council acknowledges that there will be timing of delivery issues regarding access to the bridge, the current alignment will fail to take advantage of the 2,900m² plaza. The alignment may have been proposed to maximise ease of access to the North Ryde Station but in Council's opinion this can still be achieved through the landing of the bridge at the edge of the plaza area. It is noted that Council has commenced preliminary discussions with the landowner of the Station Site North and that the location of the plaza is yet to be fully determined. It may be appropriate for the landing point of the bridge to be along Delhi Road, however there may be issues regarding pedestrian / cyclist conflict along the southern side of Delhi Road. The discussions regarding the location of the landing point are still ongoing and at this time the location of the plaza is not known. It is assumed that the Department will ensure that all the requirements of Section 4.3 of the NRSP DCP will be adhered to by the proposed bridge. In particular, the Department's attention is drawn to Control 10. Additionally it is noted that the southern landing of the bridge adjoining Bundarra Reserve may be in close proximity to existing rock anchors for the M2.	
<u>Traffic and Vehicular Access</u>	
<i>Engineering:</i> All raised platforms are to be in accordance with the RMS technical Direction TDT 2001/04a and if installed on a Bus Route shall comply with State Transit Authority (STA) Bus top style design guide which recommends 'The height shall not exceed 75mm with ramp grades no greater than 1 in 16 (6.25%). The length of the central platform should be no longer than 5.5m with provision for 3.5m travel lanes in either direction.' There is an integration concern regarding the footpath and kerb ramps associated with the Epping Road access way. The path does not align with the current and proposed footpath and kerb ramp. See C-1-4-00.Rev.3 There is inconsistency in relation to the treatment of raised platforms. Specifically regarding the integration of the device with the adjoining footway reserve, as either a raised vehicle	The proposed raised platforms are located on Spine Street and both are provided for pedestrians to cross the road. They comply with the specified height and ramps grades with a central platform width of 3.6m. A clear width of 6.5m is provided between kerbs (2 x 3.25m lanes). The access way design has been modified in order to ensure connectivity of footpaths. The raised pedestrian crossing detail is shown on drawing C-0-0-02 [4].

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platform or a raised pedestrian platform. All Drawings should specify the type being used at each location. See C-O-3-00.Rev.3 in reference to the engineering drawing Civil details plan 1 of 2 – C-O-O- 02.Rev.3	
<i>Access:</i> 1. Due to conflict issues for truck movements in achieving access to Lot 104 from the Spine Street, a vehicle access management plan for Lot 104 should be provided. This will ensure that the configuration of the access movements to Lot 104 are appropriate and achievable as proposed. 2. Access ways that generate more than 30 vehicle movements per hour (in/out combined) shall be designed as two way driveways with a nominal width of 6m minimum, however this is contingent on service vehicle movements as well. See vehicle swept path - view 6, 9 and 10 respectively. Drawing ref. C-O-3-41.Rev.3 3. It is noted that access to the stockpile area is proposed from the M2 which will require RMS approval. In the event that this is not supported, what are the alternative routes for heavy vehicles to access the Stockpile location in accordance with plan C-O-1-00.Rev.3? 4. It should be noted that all waste and recycling bins for future development will be required to be collected from within the basement of future buildings. The height required for the trucks to service bins from within the building is 3.8m for rear loader vehicles and 4.5m for side loaders which may be required to service the recycling bins. The truck should be able to enter and exit the building in a forward movement. The sweep path of the waste vehicle is required and must not impede traffic access entering the basement. Whilst this should be achievable for most areas, of concern is the vehicular access point for Lot 104 area as a shared zone.	1. An additional service vehicle access point is proposed 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 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. 2. Access ways with minimal width of 7.0m are now proposed. 3. Access to the stockpile area is proposed from a temporary access track through the development lots, not via the M2 as shown in the Civil Plans (drawing C-0-1-00 [4]). 4. It is proposed that all service vehicles enter Lot 104 via Epping Road and then depart to Retail Street, reducing the drive crossing demand (and potentially width) in the Retail Street active environment. Service vehicle requirements (including waste management vehicles) will necessarily be detailed as part of future Development Applications for each of the super-lots.
<i>Buses:</i> The bus stop proposed on Epping Road does not detail the amenity provisions which are required under the Disability Discrimination Act. This bus stop is located within a Deceleration Lane on Epping Road. RMS approval will be required. Council would like it noted that this will result in buses 'weaving' across a number of traffic lanes when heading east along Epping Road towards Lane Cove Tunnel. This poses safety risks, which is undesirable. Some plans show turning paths crossing over Kerb and	The bus stop relocation was identified in the approved TMAP, and requires the same "merge" as required further to the approved TMAP relocation. The bus stop location will require the bus to merge across the left turn only lane to Delhi Road from the existing service lane, and is then provided with a Bus Only lane eastbound. The Plaza Street / Park Street bus zone has been revised to provide sufficient length for 2 no bus drop off / layover areas and 1 no bus stop / boarding point. The bus zone is designed to accommodate use by

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Gutters. Turning Paths should be wholly contained within the road pavement and reference is made to C-1-3- 40.Rev.3. Plans must show turning paths only over road pavement. Initially the NRSP sought to require the accessing of buses to Station Street. The recent SSDA has identified that this may no longer be required as bus layovers will be provided as part of the M2 Site SSDA. It is unclear where this area is to be located. It is noted that there is a bus zone identified along the pedestrian plaza outside the proposed community facility. It is unclear whether this is to be a bus stop or simply a layover area. Each of these options has potential ramifications as to how this area should be treated.	bendy buses. Turning paths are wholly contained within the road pavement.
<i>Signs and Lines</i> In relation to the provision of 'No Stopping' signage, Council requests additional line marking enhancements to improve the visual cue of 'No Stopping' restrictions around the circular "hub" namely Lot 106. See C-0-5-01.Rev.3 The R3-1A pedestrian walking signs are to be condensed at all zebra crossing locations such that 'back-to-back' signs are installed at the vehicle approaches only. Refer to RMS TDT 2001/04a	Additional line marking enhancements to improve the visual cue of 'No Stopping' restrictions are now included. Line marking is proposed to reinforce no stopping at Lot 106. Pedestrian walking signs at crossings are to be back to back.
<i>Traffic Management</i> The Parsons Brinckerhoff (PB) report, dated 20 February 2014, specifies multiple intersection treatments that will require implementation in order to accommodate the anticipated increase in vehicles accessing the road network associated with the North Ryde Station Precinct (NRSP). The proponent should implement the items within the report to ensure that the traffic generation is managed appropriately.	All traffic works identified in the Finalisation Report (and previously in the TMAP) as being the responsibility of UrbanGrowth NSW will be completed as part of the SSDA. This specifically includes: - ▪ The signalisation of the intersection of Wicks and Waterloo Road and the Spine Road and associated works. ▪ The Spine Road and the Community Park and pedestrian/cycle facilities ▪ The shared pedestrian and cycle 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 UAP and rezoning process, UrbanGrowth NSW has provided a contribution of \$10.4m towards regional traffic and transport measures; this contribution was agreed further to a cost assessment prepared for the RMS, with the TMAP upgrade

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	recommendations each considered, costed, and then proportionally assigned (with regard to traffic volumes) to the rezoning. The ultimate prioritisation and implementation of these upgrades will be the responsibility of Transport for NSW.
<i>Parking:</i> The SSDA has identified that a total of 3 Car Share Spaces will be provided within the Mixed Use Precinct and 29 Spaces will be provided within the High Density Precinct. It is unclear whether this will be provided within the roadway or within individual developments. In this respect, should the Department seek to approve these within the roadway, this should be subject to future licensing agreements with Council.	It is anticipated that the three 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 spare spaces within the High Density Precinct would be located within the access roads (i.e. at grade outside of the individual buildings). This would maximise the visibility of and access to the shared spaces (as opposed to providing them within the individual building parking areas). This is subject to a separate Development Application.
<i>Shared Zone:</i> It is noted that the vehicular access point for Lot 104 is to be achieved from Plaza / Retail Street. This area has been identified in much of the submitted documentation as being a shared area also. Clarity is required on the functionality and access of this area.	Vehicular access points for Lot 104 are provided from Epping Road. Streets through the Mixed-Use Precinct and Plaza Street are to be low speed but not shared zones. It is estimated that there will be 150vph in the peak hours using these roads. This equates to a couple of vehicles per minute and does not result in a high vehicle use environment.
<i>Road Connection:</i> It is noted that the proposed subdivision plan has identified Lot 109 as being the location of a future road connection. Council is currently in the process of finalising a Planning Proposal for Macquarie Park which seeks to rationalise the road network detailed within the existing controls. This Planning Proposal and supporting documents is generally referred to as Amendment 1. Amendment 1 identifies that the proposed road connection is to be located at the northern most boundary of 11 and 113 Wicks Road. The road connection as identified is predicated on a recent planning proposal that was not supported by Council seeking residential land uses on 111 Wicks Road, 29 Epping Road, 31-35 Epping Road, Macquarie Park. This planning proposal is currently undergoing a Gateway Review with no definitive outcome at this stage. As such, Council strongly recommends the amendment of the SSDA to reflect the future controls proposed for Macquarie Park.	Council's comments in relation to Lot 109 are considered in full in Table 3, Section 2.2.3.

ISSUE	RESPONSE
<i>Further works to be undertaken:</i> An independent design road safety audit must be undertaken, for the full public road architecture, in accordance with RMS Guidelines. Concerns are raised with regard to Swept Path View 4 which clearly shows conflict between bus and vehicle turn movements. This may potentially require relocation of driveway access that serves Lot 107. An independent bicycle road safety audit of the bridge design should be undertaken and should consider the transition points from the bridge to the adjoining footway/shared path at both ends. This may require suitable RMS approved fencing. Further, the audit should detail the integration of the shared Bridge onto the Delhi Road access near the sub-station. It is noted that the Parsons Brinkerhoff report demonstrates a minimalistic approach to the traffic generation of the M2 site. As such, RMS approval should be obtained on this reduced rates. In the event that no RMS approval has been obtained, the proponent will need to run a SIDRA analysis for the base case + Development impact. RMS will have to agree to the results of the assessment as there will be expected discounts based on the fact that the site is a Transit Oriented Development. The Traffic Control Signals (TCS) phasing plan for Wick's and Waterloo Road is showing preferential vehicular access towards Spine Street, from the Western approach of Waterloo Road, and the southern approach of Wicks Road, which is not supported by Council. With regards to the intersection phasing, Council will need the SIDRA files and supporting documentation to understand the applicants proposed signal configuration. See C-1-5-00.Rev.3	An independent design road safety audit will be undertaken, for the full public road architecture, in accordance with RMS Guidelines. An independent bicycle road safety audit of the bridge design will also be undertaken. These provisions are included as mitigation measures within Section 5 of this report. It should be noted that the Civil Plans provided in Appendix C allow for truck and bus right turns out of Retail Street to cross over the centre line as vehicles would be able to wait at the give way line for a left turning vehicle to pass before moving away. This is expected to be very occasional by 12.5m trucks /buses and the opposite movement even less common for 8.8m trucks. The trip generation rates for 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. 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. The signalisation of the intersection of Wicks Road and Waterloo Road and Spine Road will necessarily require full RMS design approval, and that approval would necessarily extent to signal cycle times and phasing. The signal phasing is specifically designed to provide maximum green time to the primary movements Waterloo Road west right to Wicks Road south; and Wicks Road south left to Waterloo Road west. Again, the 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.

ISSUE	RESPONSE
Riparian Corridors / Biodiversity	
Bundarra Reserve is Turpentine Ironbark Forest, which is an EEC. It does not appear as though due consideration has been given to this EEC that may be affected by the proposed Pedestrian Bridge. In particular, this EEC may extend into the adjoining RMS land to the east of the Park. It is also noted that the bridge at the curve near Bundarra Reserve appears to be much wider and this will have impact on the canopy layer of the Reserve. This may unduly impact upon Bundarra Reserve and that may be potential for seating to be located elsewhere to reduce the impacts upon the reserve. Additionally it is noted that the ARUP Structural Report on page 3 identifies that the piers will be “<i>located in the north eastern corner of Bundarra Reserve</i>”. However the accompanying plans show the piers are located outside of the Reserve boundary. This must be clarified. In particular it is noted that Section 5.6 of the NRSP DCP identifies that no overshadowing of Bundarra Reserve is to occur after 9am on June 21. With regards to the proposed Vegetation Management Plan, the Oculus Report commissioned by Council has a contradictory assessment of the vegetation community on the Site. Oculus identifies the community as Shale Sandstone Transition Forest which is an EEC and this will drastically impact the development of the site. The Vegetation Management Plan and the Ecological Impact Assessment has not considered the potential impacts upon Bundarra Reserve, both during construction and from shading following construction. Additionally, it is noted that page 5 of the Vegetation Management Plan states that “<i>SWR recorded on the M2 site is on poor condition as shown in Figure 4</i>”. However, Figure 4 actually identifies two categories of Sandstone Ridgetop Woodland on the site. Figure 4 maps both “low condition” or “moderate to high condition” woodland. The Ecological report identified two categories of Sandstone Ridgetop Woodland on the site. Figure 4 maps both “low condition” or “moderate to high condition” woodland and hollow bearing trees. In review of this document and the proposed development area, the areas with the all hollow bearing trees and “moderate to high condition” woodland will be removed. There does not appear to be any discussion as to why this decision has been made nor does there appear to be any consideration for the	The updated Ecological Impact Assessment prepared by EcoLogical Australia provides a detailed assessment of the impacts of the proposed pedestrian bridge and is discussed in Section 2.2.2. Construction of the pedestrian bridge will result in the trimming of branches. This has been estimated at 0.02 hectare of STIF in the north east corner of the RMS Site. A full response to Council and DPE comments relating to the impacts of overshadowing of the bridge is provided in Section 2.2.2. The proposed bridge will not land within the Bundarra Reserve. As noted, some ‘moderate to high’ condition woodland will be removed as part of this application. The tree removal should be considered in context of the site as a whole and the future development opportunities. The rezoning of the site previously addressed the appropriateness of the proposed land uses and the SSDA proposed a number of landscaped areas including: ▪ Northern Bushland Park – Small timber deck entry and elevated timber boardwalk includes gathering spaces. ▪ Community Linear Park – Pockets of parkland 15.5m wide over four lot portions. ▪ Central Open Space – Includes raised timber deck for stage events, BBQ and gathering zone, play space, passive edge under shade and mid-block connection to the proposed Retail Street. ▪ Plaza and Community Facility – Providing access to the bridge includes an open plaza environment for flexible use and custom timber plaza seating. This is considered to represent an optimal outcome for the development of the site and amenity of future residents. The Landscape Plans show trees to be retained and removed within the open space areas and along the Epping Rd, Delhi Rd and M2 Motorway ramp verges. Some tree removal is also required due to the proposed civil works. A total of 13 of the 28 trees will be retained and 15 removed. Vegetation within the

ISSUE	RESPONSE
retention of the “moderate and high condition” area. Council also notes that there are significant areas of confusion between the Arborist Report (Appendix Q) which details which trees are to be retained on site with protection fencing. Many of these are unlikely to be retained due to the location and extent of works to be undertaken on site.	development lots will also be cleared. The trees identified in the Arborist report that are to be removed due to the civil works are T4, T5, T6, T7, T8, T9, T10, T11, T27, T28 and those which are to be retained are T13-T16, T19-T24. Where possible trees have been retained in the northern bushland park and along M2 Motorway ramp verge.
Heritage	
The assessment commits to the removal/demolition of the cistern with no consideration of the significance of the item. From the DCP, it is clear that the cistern is to be subject to further investigations and reporting by a qualified Archaeologist and that the destroying of the cistern has not been approved. The cistern is considered to potentially have local heritage significance and may yield specific artefacts relating to the previous use and occupation of the site. In the event that the proposed masterplan for the site is to inform a DCP, Shadow diagrams must be provided to ensure that the proposed building envelopes do not unduly affect the heritage listed cemetery. As such, Council is of the opinion that following must be required in the event of future development of the site: ▪ Should the cistern / well be identified during excavation / construction works, all works within 15 m of the cistern must cease and a heritage / archaeological consultant is to be engaged. ▪ Protective fencing is to be installed at a 15 m perimeter setback from the base of the cistern whilst all archaeological/investigation works are being undertaken. ▪ The archaeologist must identify, investigate and appropriately report the finding of the excavation of the cistern in a clear and concise manner that complies with the NSW Heritage Division guidelines. ▪ This Archaeological Investigation report must be submitted to the Council and a site visit undertaken by the Council. ▪ Once Council are satisfied the appropriate research and investigations have been undertaken and that the methodology has been prepared, written approval is to be issued by Council prior to ANY excavation or construction works occur within the 15 m radius restrictive protection zone of the cistern.	Provisions for heritage management, including archaeological monitoring will be required to re-identify the cistern/well will be incorporated in the CEMP for the Section 83B(3)(b) Works. In accordance with the Archaeological Assessment submitted with the SSDA, archaeological excavation of the cistern/well and any works with the potential to impact the C.1900 well or cistern on the M2 Site will require archaeological monitoring and, may require test excavation. Mitigation measures to address potential impacts are provided in Section 9 of this report. A short program of archaeological monitoring will be required to re-identify the cistern/well, and ensure it is uncovered without further damage. The monitoring program will commence within the 15 metre perimeter buffer around the known location of the cistern/well. The monitoring program will also identify any additional archaeological remains within the study area. If unexpected archaeological remains are encountered during the monitoring phase, adequate time and resources should be afforded to the archaeologist/s on site to identify, excavate and record the remains (if necessary).

ISSUE	RESPONSE
▪ A qualified Archaeologist must be located on site during construction and ANY excavation/earthworks works that are within 15m of the cistern. ▪ All contractors working on site must be inducted into the potential heritage significance of the cistern. ▪ The protective fencing is to contain a jersey kerb base is to be erected at the 15 m perimeter protection zone to ensure protection from large machinery and trucks located onsite. ▪ A layout plan must accurately detail the location of the existing cistern in relation to the proposed buildings, this must be at a scale that provides clarification in relation to the 15 m restricted radius Protection Zone that surrounds the cistern. ▪ It is recommended that an Interpretation Strategy be prepared by a qualified heritage consultant for the entire subject site and must include details and findings from the investigation of the cistern. ▪ A separate interpretation strategy should be prepared for the inclusion of signage on the proposed bridge where the seating overlooks the cemetery. This could include detailing the historical significance of the Cemetery.	
Construction Impacts	
Council has concerns regarding the potential building construction noise which the documentation has suggested will, from time to time, exceed allowable noise levels. Additional measures would be required to mitigate the impacts of those exceedances to comply with EPA standards. It is also noted that there appears to be existing issues with gas pipelines located along the M2 Sites western most boundary. Jemena has contacted Council regarding this matter and Council would like to ensure that adequate consultation occurs with Jemena as part of the proposal.	Appropriate mitigation measures with regard to acoustic impact during construction have been included in the proposal and will be managed through the Construction Noise and Vibration Management Plan. Consultation with Jemena is ongoing and a response to Jemena's submission is provided in Section 3.4.
Flooding and Drainage	
In general, Council supports the proposed concept drainage system augmentation scheme detailed in the Flood Assessment Report by Cardno. However it is noted that the models were not provided to Council and therefore unable to comment on the results. Cardno has recommended exempting the future development in the individual lots from the requirements of	Flood modelling carried out by Cardno (refer to Appendix B of the Stormwater management Plan) has been used to assess that the provision of on-site detention (OSD) for the site, including private development lots would be of marginal benefit. This advice is based on assumed impervious ratios for each part of the development. OSD is not proposed

ISSUE	RESPONSE
an OSD system. The site area is about 9.2 hectares and is located in the middle of the catchment. Council is unable to comment on this due to insufficient information in the report. Council recommends that the models are independently reviewed and verified. Any future development must ensure that the structural integrity of the downstream conduits should not be compromised. The report did not address the flooding impacts on the downstream reaches by the proposed development. It is noted the maps covers areas up to M2 freeway. This may be of significant concern due to the existing areas of fill and associated leachates in adjoining land. With regards to Stormwater management, the methodology adopted by the consultant is acceptable. Council notes that stormwater quality modelling has been undertaken for the Public Domain areas and that the supporting report listed Tree pits and Stormwater 360 Enviropod as water quality treatment devices for a catchment area of 2.75 ha. These devices are likely to require frequent maintenances. City of Ryde recommends vegetated swales and Bio-retention swales or similar treatment devices where appropriate to avoid ongoing high maintenance costs. These devices will be required to be installed within the public domain areas. As with the flooding report, no models were provided for Council's review. As such Council is unable to comment on the accuracy of the report findings without reviewing the models.	to be provided for any part of the site that does not exceed the assumed impervious ratio. There are limited opportunities for implementation of WSUD to minimise water consumption, given the competing demands for the use of public open space however harvesting of rainwater from roofs within the central park for use in toilet flushing within the adjacent facilities is being considered.

City of Ryde Council issued UrbanGrowth NSW with an amended submission dated 30 October 2014 which formed the final version endorsed at a Council Meeting of 29 October 2014. The submission identified three additional issues which have been addressed in **Table 10** below.

TABLE 9 – TYPE TABLE CAPTION HERE.

ISSUE	RESPONSE
Protection of wetlands The report did not address the flooding impacts on the downstream reaches by the proposed development. It is noted the maps covers areas up to M2 freeway. This may be of significant concern due to the existing areas of fill and associated leachates in adjoining land. In particular, the protection of the wetlands from stormwater flows through a range of measures including lot size and pipe infrastructure	The public domain stormwater treatment proposals have been designed to meet the pollution reduction targets as stated within the City of Ryde Council Development Control Plans. Future proposals on development lots will be required to meet similar objectives on a lot by lot basis.

ISSUE	RESPONSE
must be delivered by the proposal. It should be noted that this item is of particular concern to Council as it was specifically identified in a Council meeting on 28 October 2014.	The Stormwater Management Plan submitted with the SSDA included the following: A stormwater quality assessment. ▪ Assessment of the quality of stormwater discharge from the site during construction stage and the post-development conditions. ▪ Identification of Water Quality Objectives. ▪ Identification and estimation of the quality and quantity of all pollutants. ▪ Assessment of impacts on Porters Creek and Lane Cove River. ▪ Monitoring of stormwater quality discharging from the development and maintenance of systems during construction. As documented in the Stormwater Management Plan submitted with the SSDA, prior to construction commencing, a Water Management Plan, including erosion and sediment control measures, is to be implemented in accordance with the City of Ryde's specifications, Section 6.3.4 Part 4.5 of the Ryde DCP 2010, and the Landcom guideline Managing Urban Stormwater: Soils and Construction. The following stormwater management and mitigation measures are proposed: a) Implement the WSUD principles provided in the Integrated Water Management Plan including: – Safe conveyance of stormwater. – Water quality treatment of runoff, in order to minimise adverse impacts on downstream waterways. – Source control. – Incorporating stormwater management measures into the streetscape. b) Implement erosion and sediment control measures, including: – Sediment basins with sediment storage volume and "clean water channel" catch drains for

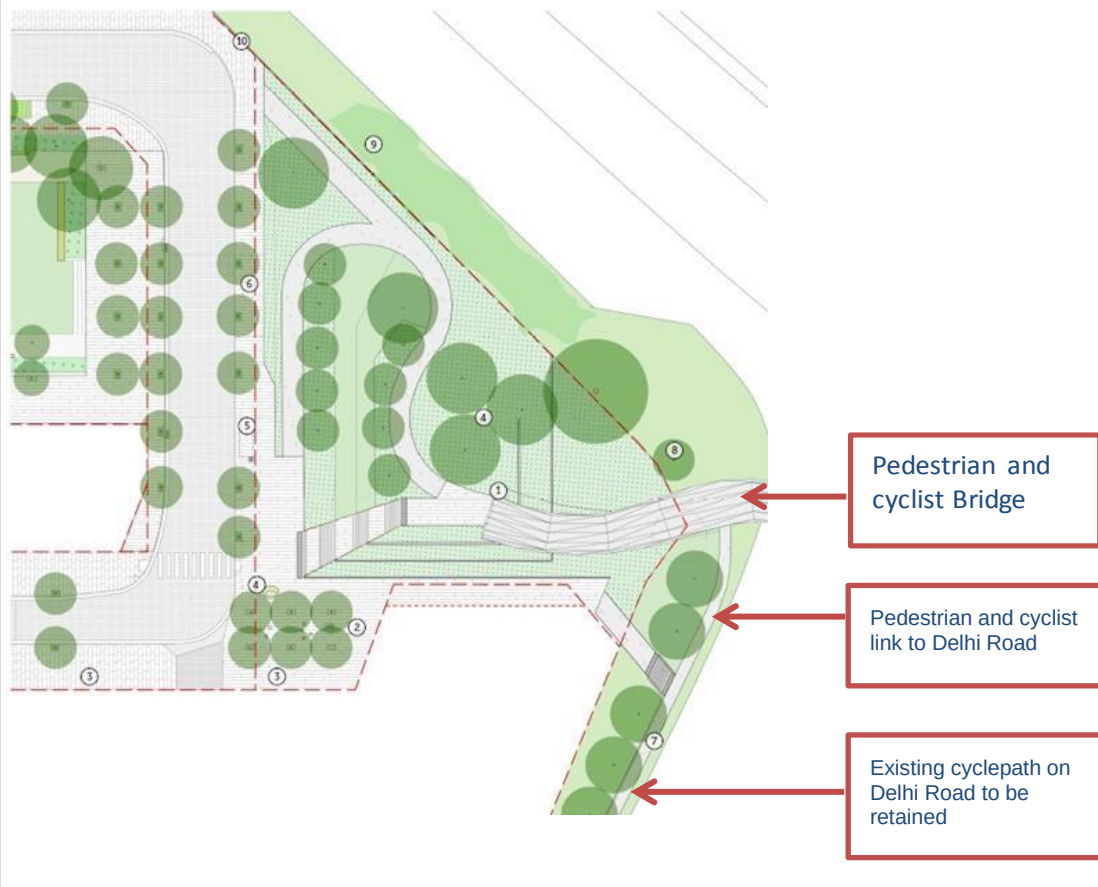
ISSUE	RESPONSE
	discharge into Porters Creek; – Sediment fences around stockpiles and construction zones where soils are exposed; – Catch drains/bunds to collect construction site runoff and convey flows to the settling basin; and – Sediment protection devices on existing and proposed inlet pits i.e. filter socks.
Capacity of local schools It is noted that Council and the wider community have previously identified concerns regarding the capacity of surrounding schools to cater to the demands of the additional population generated by the UAP. It should be noted that at a Council meeting held on the 28 October 2014 this item was specifically identified as an area of concern. Any forthcoming approvals within the NRSUAP must ensure that sufficient infrastructure upgrades are provided to the surrounding schools to cater to the additional population.	The Finalisation Report for the rezoning of the NRSP, outlines the findings of a needs analysis undertaken by the Department of Education and Communities and the Social Impact Assessment prepared by Urbis. The DEC analysis of the rezoning found that the site was not a suitable location for a new school given site constraints and future enrolments generated by the proposal can be accommodated by providing additional classrooms on existing school sites in the area. The DEC submission to the rezoning noted that there was vacant land available in the area should a new school be needed to meet future enrolment demand. It is understood that DEC will take into account future residential development approved on the site when considering upgrades to existing local schools.
Bridge connection to regional cycleway At Council's meeting on the 28 October 2014, the connection of the cycle/ pedestrian bridge to the regional cycle network on the southern side of Epping Road was identified as a particular area of concern. Any forthcoming proposal must demonstrate satisfactory connection from this bridge to the cycle route along Epping Road.	Connections to the regional cycleway on the southern side of Epping Road have been considered in the subdivision design, the proposed upgrades to site frontages and in the alignment of the proposed bridge, landing locations and public domain design. The following figure illustrates the location of the existing cycleways on Epping Road and Delhi Road. The design of the new bridge landing on the M2 Site, allows for a connection to the Delhi Road cycle path which provides access to the signalised intersection of Epping Road/Delhi Road enabling cyclists to cross to the southern side of Epping Road. Alternatively cyclists will be able to use the upgraded footpath on the northern side of Epping Road and cross at the existing pedestrian bridge with lifts on either side of the road to connect the cycleway.

FIGURE 13 – LOCATION OF EXISTING CYCLEWAYS ON EPPING ROAD



The following figure illustrates the landscape design for the Community Plaza, where the pedestrian bridge lands on the M2 Site. The plaza space has been designed to allow cyclists to access the bridge from the Delhi Road cycleway, to allow cyclists to connect to the regional cycleway on Epping Road.

FIGURE 14 – CYCLE ACCESS PATHS



3.3 GOVERNMENT AGENCY AND UTILITY SERVICE PROVIDER SUBMISSIONS

Submissions received by government agencies and utility providers have been reviewed and assessed in **Table 11**.

TABLE 10 – RESPONSE TO SUBMISSIONS: GOVERNMENT AGENCY AND UTILITY PROVIDERS

ISSUE	DESCRIPTION	RESPONSE
Department of Primary Resources - Office of Water		
Riparian Corridor for Porters Creek	The riparian corridor for Porters Creek has been identified in Phase 1 Contamination Assessment and RAP as being located on western boundary. Consideration is required of proposed treatment of creek/riparian area along the western boundary of the M2 Site.	The Phase 1 Contamination Assessment and RAP rely on the same map which has been review and confirmed as incorrect. The riparian corridor of Porters Creek has been further confirmed by EcoLogical Australia in the revised Ecological Impact Assessment as being within the Northern Bushland Reserve including a figure to demonstrate that no riparian corridor exists on the western boundary.
Riparian Corridor width	Recommends riparian corridor widths to be 30m each side of Porters Creek, consistent with the NRSP DCP 2013. Inconsistencies in the EIA and VPA should be corrected. Recommends a new environmental management measure be adopted as follows: <i>"A vegetated riparian corridor is to be established along Porters Creek being 30 metres wide on either side of the creek (measured from the top of bank) in accordance with the North Ryde Station Precinct DCP 2013".</i>	The proposed width of the riparian corridor is 30m measured from the top of the Porters Creek bank. The amended Ecological Impact Assessment and Vegetation Management Plan clarifies this and no further mitigation measure is required.
Culvert Upgrade	Recommended to be designed in accordance with NSW Office of Water's <i>Guidelines for Watercourse Crossings on Waterfront Land</i> .	The culvert upgrade will be designed in accordance with the NSW Office of Water's <i>Guidelines for Watercourse Crossings on Waterfront Land</i> .
Groundwater	If greater than 3ML per year of groundwater is likely to be intercepted, then further consideration should be given to the potential impacts on groundwater dependent community, in consultation with the NSW Office of Water. Recommends conditions of approval for construction dewatering.	Due to the level of groundwater below the surface and the extent of excavation proposed for bulk earthworks and civil construction associated with this application, it is not expected that groundwater will be affected by the construction of the roads and public domain proposals. Future developments involving excavation will be responsible for the management of groundwater on a lot by lot basis. Accordingly, it is not possible to accurately comment on

ISSUE	DESCRIPTION	RESPONSE
		groundwater issues. The water inflow will be measured during the period of construction for future development and an assessment made as to whether a licence is required.
NSW Office of Environment and Heritage		
Bushland Reserve	OEH considers E2 Environmental Conservation is a more appropriate zone for the northern bushland reserve. - Stormwater detention function of Porters Creek is unclear. Physical structures for stormwater drainage, particularly the extent of area for scour protection are inconsistent with the urban design and landscape plans, ecological impact assessment and vegetation management plan. - Impacts of proposed stormwater drainage management within the bushland reserve (physical construction and potential impacts to creek stability and vegetation community) have not been identified or assessed.	The current RE1 Zone was determined to be an appropriate zoning by DPE for the northern bushland reserve. - As discussed in the Stormwater Management Report submitted with the EIA, the point of discharge for the site is to be into Porters Creek, downstream of the proposed box culvert under the Spine Road. The entire upgrade of this area includes: 2100mm diameter pipe to discharge flows from the M2 Site development; - Upgrade the existing culvert under the existing access road to a 3.2m x 2.4m box culvert; 2100mm diameter pipe to discharge flows from the Wicks and Waterloo Road intersection; - New culvert headwall to incorporate the three discharge structures listed above; and - Scour protection and local modifications to the stream bank to suit the new culvert headwall. Inconsistencies with the urban design and landscape plans, ecological impact assessment and vegetation management plan have now been addressed in the amended plans. - The Ecological Impact Assessment has been revised to include mitigation measures to address scour prevention, avoidance of bedrock disturbance and provide pre-clearance supervision to mark habitat trees, trees to be retained and weeds to be removed.

ISSUE	DESCRIPTION	RESPONSE
Stormwater Management	Concerns raised about the potential impacts to the downstream waterways and ecosystems from development of Macquarie Park corridor. Request for the Stormwater Management Plan to assess pre and post development peak loads and impacts on geomorphic stability of affected waterways Stormwater management for the M2 Site must ensure that water runoff regime is as close as possible to pre-development flows, or alternatively demonstrate a neutral or beneficial effect on environmental values, including for downstream environments	The designed stormwater network ensures that all overland flows from the 100 year ARI storm are captured within the pipe network, upstream of the Wicks and Waterloo Road intersection, before discharging to Porters Creek. The concept stormwater design for the M2 Site redirects stormwater runoff to streetscape bioretention and in-ground treatment devices before entering the stormwater network within the road reserve. DRAINS and MUSIC models have been developed by RBG to demonstrate that the performance of the stormwater system satisfies the requirements of the City of Ryde DCP and the North Ryde Station Precinct DCP.
Biodiversity	- Assessment of vegetation or any impacts on vegetation on the southern side of Delhi Road (Bundara Reserve and adjoining RMS Land). - Request for an assessment of this vegetation and a description of actions that will be taken to avoid or minimise impacts or compensate for unavoidable impacts. - The proposal indirectly impacts on Bundara Reserve by overshadowing.	The alignment of the proposed shared pedestrian and cyclist bridge is designed to minimise the direct impacts on vegetation on the RMS land and adjoining Bundara Reserve. A buffer of 30m has been allowed for where possible. For example, Wicks Road and the access road do not allow a full 30 m width. Confusion may have arisen where in the VMP reference is made to a 10 m riparian zone <i>treatment</i>. An additional 20 m of vegetation exists outside this area to further buffer the waterway. The vegetation in the 20 m has been mapped as a dry sclerophyll forest type and will be managed under the VMP as this forest type. Terminology in the EIA and VMP has been altered to ensure that the meaning is clear. A figure has been added to the EIA to show the distance from TOB. Two piers to support the bridge are located within the RMS land on the southern side of Delhi Road. The alignment of the bridge and the siting of piers avoid significant vegetation. All significant trees are to be retained with the construction of the bridge. In response to the request for further assessment of potential impacts of the bridge on the Sydney Turpentine Ironbark Forest

ISSUE	DESCRIPTION	RESPONSE
		(EEC), the Ecological Impact Assessment (EIA) submitted with the EIS/SSDA has been updated to include an assessment of the construction and use of the bridge on the Sydney Turpentine Ironbark Forest (EEC).
Environmental Protection Authority		
EPA Licensing and Regulation	Clarification is required as to whether any license is required under the <i>Protection of the Environment Operations Act 1979</i>. Consultation with EPA is required in the DGRs. Confirmation is required as to whether sewage reticulation will be connected to the sewage system this will form a scheduled activity.	The proposed Mitigation Measures have been revised to include: Compliance with the POEO Act with regard to: ▪ Prevent pollution of waters ▪ Prevent land pollution ▪ Ensure activities are not carried out in an environmentally unsatisfactory manner. "Environmentally unsatisfactory manner" is defined in Section 95 of POEO Act; and ▪ Ensure the EPA is notified of any pollution incidents that may cause or threaten material harm to the environment. Any notification must be reported to Environment Line on 131 555.
Water Quality	The EIS does not state the relevant Water Quality Objectives and environmental values for the receiving waters of the project or any indicators and associated trigger values for these environmental values. The EIS has not provided any predicted water quality discharge concentrations/loads during the construction phase; from the whole site, or during the post construction phase; from the high density residential and mixed use sub-precincts. The EIS has not however provided a description and assessment of the nature and degree of impact that any proposed discharges (construction and post construction) will have on the receiving environment. The EPA recommends that additional information be sought: ▪ Statement of the ambient Water Quality Objectives (WQO) and the environmental values for the receiving waters relevant to the proposal.	The public domain stormwater treatment proposals have been designed to meet the pollution reduction targets as stated within the City of Ryde Council Development Control Plans. Other developments are expected to be required to meet similar objectives on a lot by lot basis and subject to future Development Applications. The Stormwater Management Plan submitted with the SSDA included the following: – A stormwater quality assessment. – Assessment of the quality of stormwater discharge from the site during construction stage and the post-development conditions. – Identification of Water Quality Objectives. – Identification and estimation of the quality and quantity of all pollutants.

ISSUE	DESCRIPTION	RESPONSE
	These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters: ▪ Statement of the indicators and associated trigger values or criteria for the identified environmental values. ▪ Identification and estimation of the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point, including residual discharges after mitigation measures are implemented. This should be undertaken for construction and post development phases for the whole site. ▪ Description of the nature and degree of impact that any proposed discharges (construction and post construction) will have on the receiving environment, with particular regard to Porters Creek and Lane Cove River. ▪ Assessment of the significance of any identified impacts including consideration of the relevant ambient water quality outcomes. Demonstration of how the proposal will be designed and operated to: – Protect the WQOs for receiving waters where they are currently being achieved; and – Contribute towards achievement of the WQOs over time where they are not currently being achieved. ▪ A Monitoring Program to ensure that any mitigation measures are performing as predicted during construction and post development and to validate that the relevant water quality objectives are being met, and if not, what actions would be undertaken by the proponent to ensure they are met. The EPA recommends that OPE seek further information from the proponent to ensure the Integrated Water Management Plan provisions in the OCP are satisfied. The submitted EIS recognises the importance of these actions to ensure their effective ongoing	– Assessment of impacts on Porters Creek and Lane Cove River. – Monitoring of stormwater quality discharging from the development and maintenance of systems during construction. As documented in the Stormwater Management Plan submitted with the SSDA, prior to construction commencing, a Water Management Plan, including erosion and sediment control measures, is to be implemented in accordance with the City of Ryde's specifications, Section 6.3.4 Part 4.5 of the Ryde DCP 2010, and the Landcom guideline Managing Urban Stormwater: Soils and Construction. This has been included as a Mitigation Measure in Section 5.

ISSUE	DESCRIPTION	RESPONSE
	performance. However, the submitted information does not provide any information on who will be responsible for the management of these stormwater management features post development. A Soil and Water Management Plan should also be developed and implemented prior to construction in accordance with the Managing Urban Stormwater: Soils and Construction, Vol. 1 (Landcom 2004) and Vol. 2 (A. Installation of services; 8 Waste landfills; C. Unseated roads; D. Main Roads; E. Mines and quarries) (OECC 2008).	
Construction Noise	Potential noise impacts associated with construction should be assessed and any appropriate noise mitigation measures identified and implemented. Any local residents or noise sensitive receivers should be considered.	Construction noise has been assessed by SLR in the Acoustic and Air Quality report submitted in Appendix L of the SSD_5093. The report includes an assessment of anticipated construction noise against the Interim Construction Noise Guideline for residential and other sensitive receivers. Noise emissions from the proposed activities will be managed in accordance with the recommendations contained in the Acoustic and Air Quality Report which have been included in the proposed Mitigation Measures.
Contaminated Land Management	As the development will be within approximately 400 metres of the former Porters Creek landfill, there is a potential risk for landfill gas to migrate through the ground to the development site. In this regard, the EPA recommends that this matter be addressed as part of the contaminated site assessment and the RAP be appropriately updated to address the need for any mitigation measures if required. The EPA also recommends that OPE should consider the involvement of an EPA-accredited Site Auditor to assess the adequacy of the investigations to date and the adequacy of the proposed RAP. This includes the provision of a Site Audit Statement certifying that the land is suitable for the proposed use(s).	Landfill on the site is limited to the area where the Leighton construction sheds were situated and the filling is not thought to contain putrescible waste and therefore would not result in landfill gas.
Waste Management	The EIS states that a Waste Management Plan will be prepared during the construction works and will provide detailed waste management practices and procedures. The EPA recommends that this plan be	A Waste Management Plan will be prepared prior to any construction taking place on the site in accordance with the EPAs comments.

ISSUE	DESCRIPTION	RESPONSE
	prepared prior to construction and provide information on any waste generated during demolition/remediation/construction. All waste must be classified and managed in accordance with relevant legislative requirements and the EPA Waste Classification Guidelines (OECCW 2009). OPE should also consult the Waste Not Development Control Plan Guideline (EPA 2008) to assist in guiding the development of suitable waste conditions.	The Waste Management Plan will include information on waste generated during demolition, remediation and construction. Waste will be classified as recommended by the EPA and the relevant guidelines.
Construction Environmental Management Plan	The EIS states that a Construction Environmental Management Plan (CEMP) will be prepared during construction. The EPA recommends that this plan be prepared prior to construction and also address the following matters. - Contingency plan to manage any unintended or unpredicted impacts - Measures to address any environmental emergencies - Awareness training of employees and contractors of their environmental obligations - Communication strategies that involves reporting of any incidents and outcomes of monitoring to appropriate regulatory authorities (ARA) and the local community - Compliance strategies to conditions and management plan requirements are being satisfied; and - Complaint handling systems that provides a 24 hour contact for the community and ARAs.	The Construction Environmental Management Plan will be prepared prior to any construction taking place on the site in accordance with the EPAs comments. The identified measures have been included in the revised mitigation measures provided in Section 5 of this report.
Future Development of Land	- Road Traffic Noise and Air Quality - Potential Land Use Conflicts - Macquarie Business Park - Potential Land Use Conflicts - Macquarie Business Park - Sewage Management - Future Waste Management	These matters relate to future development of the site and will be considered through DAs.

ISSUE	DESCRIPTION	RESPONSE
Jemena Asset Management Pty Ltd		
High pressure gas main at the northern end of the site.	Jemena are seeking the DPI's approval and conditions to relocate the gas main prior to approval of the SSD, and state the relocation of the gas main would be undertaken as part of the subdivision works and completed prior to the commencement of the project works.	The gas main relocation is proposed as part of the SSDA and will only be undertaken once approval has been obtained. A detailed description of the proposed works is provided in Section 4. The works will involve the removal of native and exotic vegetation, disturbance to a watercourse and soil disturbance. Revegetation works will be required following the completion of the proposed installation of the pipeline. The amended Ecological Impact Assessment includes the additional ecological impacts associated with the proposed gas pipeline works and provides suitable post-construction revegetation works is provided in Appendix F. Under the proposal the following direct impacts are likely to occur: ▪ Removal of Sandstone Ridgeway Woodland (low condition) (0.07 ha) ▪ Disturbance to soil profile and bank stability ▪ Alteration of creek substrate (concreting) ▪ Disturbance to potential fauna habitat ▪ Disturbance to rocky outcrop. No works will occur within the culverts; however indirect impacts such as noise, dust and vibration during construction works may impact on roosting microbats. A list of recommended mitigation measures have been provided and are included in Section 5 of this report. Indirect impacts may include: ▪ Increase in sediments and nutrients during construction. ▪ Increase in edge effects resulting in increase in weed invasion. ▪ Temporary disturbance to the stormwater

ISSUE	DESCRIPTION	RESPONSE
		drainage and flow regime. Disturbance to threatened fauna species (microbats within the culvert and trees) during construction. Refer to revised Ecological Impact Assessment (Appendix F) and Vegetation Management Plan (Appendix G).
Sydney Water Corporation		
Potable water and waste water infrastructure	<u>Water</u> The local 150mm reticulation on Epping Rd is too small to supply the property. However, a bulk supply can be brought to the site from the 750mm Ryde to Chatswood main in Coxs Rd. The single purpose principal bulk supply main should be at least 300mm in diameter and service the property via the Epping Rd entry. An open cross connection would be arranged with the existing 150mm in Epping Rd to provide a very limited alternate supply. The delivery of bulk supply to the property shall ensure Operating Licence compliance at the property entry. If Sydney Water is to own the internal mains, they shall be designed to minimum mains size according to the Water Supply Code and Operating Licence compliance • A cross connection to the Waterloo Rd reticulation mains (Marsfield zone) cannot be permitted as this is a different zone and pressure condition. Early connections cannot be supported by the existing Epping Rd mains. The existing 100mm water main within the property is off the wrong zone. The pipe must be disconnected at Waterloo Rd and the off-take rehabilitated. New water mains shall be provided by Water Servicing coordinators. <u>Wastewater</u> The property drains to the reticulation sewers in Waterloo Rd, and thence to the West Lane Cove	Subsequent correspondence from Sydney Water including the Notice of Requirements states that the subdivision is to be serviced by a 250mm water main (not 300mm). As such, a 250mm lead-in water main is proposed. In the event that the lead-in water main was required to be shut down, the 150mm cross connection in Epping Rd would not be able to maintain supply to the subdivision. In the design, a connection has been provided with the 200mm main in Waterloo Rd and a divide valve provided at this connection (normally closed). If this is required, the connections to the lead-in water main and the 150mm Epping Rd cross connection would be closed, and the divide valve opened. This would ensure there is no connection between the two pressure zones. Ownership of internal mains will be discussed with Sydney Water in due course acknowledging the relevant requirements if these are to become Sydney Water assets.

ISSUE	DESCRIPTION	RESPONSE
	Subm Sec, which has sufficient capacity for the development ▪ If the internal sewers are to be owned by Sydney Water, they shall be designed to the Sewerage Code of Australia according to minimum main sizing ▪ The West Lane Cove Sub-main is approx. 250m distant from the Waterloo Rd entry ▪ The local reticulation in Waterloo Rd has insufficient capacity for the development. Sewerage Code of Australia minimum main sizing indicates that a continuous length of 375mm is required ▪ New sewers shall be provided by Water Servicing Coordinators.	
Roads and Maritime Services		
Intersection of Wicks Road and Epping Road	Epping Road carries a significant volume of traffic in comparison to Wicks Road and therefore will be assigned the majority of green time. Green times at this intersection will not be increased for the Wicks Road approaches and decreased for Epping Road. The queue lengths are expected to be 345 metres long (in AM peak) (as a result of this development) on Wicks Road from the intersection of Epping Road to close proximity of the proposed signalised intersection of Wicks Road and Waterloo Road. The distance between Waterloo Road and Epping Road is 400 metres. The proposed queues particularly in the AM peak may lead to congestion within the site as vehicles are unable to join the queue on Wicks Road to exit the site. The proponent should investigate increasing capacity (further to the reduced measure in the latest Traffic report) to enable vehicles to exit the site. The proposed queue length on Wicks Road of 345 metres in AM and 182 metres in PM would result in queuing past a proposed local road which is identified in Council's Development Control Plan. Council has previously shown Roads and Maritime plans which included a signalised intersection at this location (no approval for traffic lights at this intersection has been given and Roads and Maritime has not received plans formally from	A detailed response to DPE comments is provided in Section 2.2.3 of this report. 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 it's 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 as is appropriate. The operation of the new road(s) and connection(s) to the external road network would necessarily be detailed as part of a future application of the adjacent area.

ISSUE	DESCRIPTION	RESPONSE
	Council). Any modifications to the intersection of Wicks Road and Epping Road would require the consent of Roads and Maritime Services.	
Pedestrian Bridge	There are a few areas in the report in which it is stated the pedestrian bridge will be handed over to Council. Previous conversations with Roads and Maritime and UrbanGrowth have discussed the bridge would be in the ownership of Roads and Maritime. The applicant should advise Roads and Maritime if Council wishes to own this asset. ▪ The bridge shall be designed and constructed in accordance with relevant Roads and Maritime standards. The bridge shall have a minimum 100 year design life. ▪ The developer shall prepare and implement an appropriate community engagement plan for the construction of the bridge to the satisfaction of Roads and Maritime. ▪ The ownership and maintenance arrangements for the bridge shall be to the satisfaction of Roads and Maritime. ▪ Road, bridge and traffic control facility works associated with the bridge shall be undertaken by a pre-qualified contractor. A copy of pre-qualified contractors can be found on Roads and Maritime website at: <i>http://www.rta.nsw.gov.au/doingbusinesswithus/tenderscontracts/prequalifiedcontractors.html</i> ▪ The traffic management arrangements for construction shall be to the satisfaction of Roads and Maritime.	Preliminary discussions have been held with RMS regarding the future ownership of the bridge. RMS have indicated a willingness to be the owner. Mitigation Measures has been included in Section 5 requiring: ▪ A community engagement plan for the construction of the bridge to the satisfaction of Roads and Maritime. ▪ Road, bridge and traffic control facility works associated with the bridge to be undertaken by a pre-qualified contractor. ▪ The traffic management arrangements for construction to be to the satisfaction of RMS. It is proposed that the bridge be constructed prior to the occupation of the first residential development.
Traffic lights at Wicks Road/Waterloo Road/Spine Road	The provision of the new traffic control signals and civil works at the intersection of Wicks Road/Waterloo Road/Spine Road shall be designed to meet Roads and Maritime requirements and endorsed by a suitably qualified practitioner. The design requirements shall be in accordance with Roads and Maritime Road Design Guide, Roads and Maritime Traffic Signal Design Manual and other Australian Codes of Practice.	The traffic control signals and civil works at the intersection of Wicks Road/Waterloo Road/Spine Road will be designed to meet RMS requirements as specified.

ISSUE	DESCRIPTION	RESPONSE
	The submitted design shall be in accordance with Austroads Guide to Road Design in association with relevant Roads and Maritime supplements	
Left in only deceleration land on Epping Road into the site	The left in only access shall be designed and constructed in accordance with Austroads Guide to Road Design in association with relevant Roads and Maritime supplements	The left in only deceleration lane will be designed and constructed in accordance with RMS comments.

3.4 PUBLIC AND COMMUNITY GROUP SUBMISSIONS

The public and community group submissions have been reviewed and assessed. **Table 12** provides a detailed response to these issues.

TABLE 11 – RESPONSE TO SUBMISSIONS: PUBLIC, COMMUNITY GROUP AND ORGANISATION SUBMISSIONS

ISSUE	RESPONSE
Sita Australia Pty Ltd	
▪ The application has not addressed the proximity of future development to the existing resource recovery facility and may result in traffic, noise and air quality impacts. ▪ The development of the site is anticipated to trigger further growth of the facility as residential development increases. ▪ Proximity of the site to the UAP may strain noise attenuation and odour control measures at the facility. It may generate increased complaints due to noise, air quality and odour. ▪ Cumulative impacts of the facility and construction works on the site and other development in the area need to be addressed. ▪ Cumulative impacts of the operation should also be considered. ▪ EPA guidelines state that facilities should be located away from residencies and sensitive receptors due to dust and odour impacts. A minimum 400-500m buffer is recommended and the proposed site is not considered optimal.	Air quality, noise impacts and traffic from SITA Facility on residential development on the M2 Site were assessed in the Rezoning Study and considered acceptable. Further detailed response with findings of Air Quality, Traffic and Noise Assessments has been included in this response. The proximity of the SITA facility to the subject site and the potential impacts of the proposed development is considered in response to DPE comments and provided in Section 2.3. The future development of the M2 site for residential and mixed uses will result in an economic benefit for the SITA facility which would assist in funding any future expansions as required. It is not a matter for consideration for UrbanGrowth NSW and the contributions allocated for this project. Traffic on Wicks Road, Waterloo Road and Epping Road has been assessed by the TMAP review provided with the application. The intersection of Lane Cove Road & Epping Road is identified as a constraint in the TMAP, but the North Ryde Precinct Station development will generate a very moderate number of trips to this intersection.

ISSUE	RESPONSE
▪ If an upgrade to the facility is required, Urban Growth NSW should pay a contribution to assist with this funding. ▪ Traffic on Wicks Road, Waterloo Road and Epping Road would be further stressed. Without road upgrades, traffic could have difficulties exiting and entering the site. ▪ Heavy traffic could have a flow on effect into the business and commercial precinct. This may lead to delays for waste vehicles and customer complaints.	
Ryde – Hunters Hill Flora and Fauna Preservation Society	
▪ Over development of the site and further loss of local biodiversity and degradation of local watercourses. ▪ Project provides an opportunity to restore habitat and canopy connectivity across the site between Porters Creek and Bundarra Reserve. This has not been addressed. ▪ The site contains a natural wetland which both assists in flood control as well as contributing to improved water quality ▪ Full consultation should occur with Council regarding the need to protect local stormwater infrastructure and how it integrates with the existing structure. The net increase needs to be confirmed ▪ Request a full ecological assessment. This assessment should include identification of significant remnant trees on the M2 and how to achieve some level of canopy connectivity between Bundarra Reserve and Porters Creek. ▪ Need to assess bushland on the RMS land and how the pylon for the bridge will impact RMS and Bundarra Reserve which may require offsets. This should include strategies to ensure canopy connectivity with station site north. ▪ Concerns about potential impact on leachate recycling system that controls water quality	The development potential of the site was considered during the rezoning process and is not a consideration for this application. A comprehensive landscape strategy for the site has been proposed which addresses the provision of tree cover throughout the site. The M2 Site has been previously mapped by the NSW NPWS in 2002 and the Sydney Metropolitan Catchment Management Authority in 2009. The site was inspected by ELA in 2011. The NSW NPWS mapped the area in the north of site as Sandstone Ridgetop Woodland. SMCMA mapping included Coastal Sandstone Sheltered Peppermint-Apple Forest, Weeds and Exotics and Urban Exotic/Native in the M2 Site. ELA mapping validated the NSW NPWS mapping. None of these vegetation types are equivalent to a wetland. Vegetation in small urban patches can be important stepping stones for dispersal and foraging movement. Removal of the vegetation within the M2 Site is not a significant ecological issue. The vegetation present in the M2 Site does not form an EEC or conform to vegetation that corresponds to an EEC; the vegetation present does not form part of a mapped wildlife corridor. The Ecological Impact Assessment prepared by EcoLogical Australia was undertaken in accordance with the Director General Requirements issued to guide preparation of the SSDA. The Ecological Impact Assessment has now been updated in accordance with DPE comments as described in Section 2.2.2. The updated Ecological Impact Assessment includes a detailed assessment of the impacts associated with the impacts of the physical structure and the overshadowing created by it on Bundarra Reserve and the RMS site. The Ecological Impact Assessment recommends a number of mitigation measure which will be include

ISSUE	RESPONSE
entering Lane Cove Rover.	in the construction of the proposed works: ▪ Erosion and Sediment Control ▪ Stormwater run-off ▪ Management implications relating to pests, weeds and edge effects ▪ Visual, odour, noise, vibration, air quality and amenity impacts Removal of the vegetation within the M2 Site is not a significant ecological issue. The vegetation present in the M2 Site does not form an EEC or conform to vegetation that corresponds to an EEC; the vegetation present does not form part of a mapped wildlife corridor.
Noreen French-Walsh	
Objections made as follows: ▪ The magnitude of the proposal and the increase in size of residential towers which will not integrate with the community. ▪ This is not affordable housing. ▪ The apartments will be purchased by investors which does not promote community integration. ▪ Traffic, school, amenities and other infrastructure is not in place to the population. ▪ Negative impact on environment and landscaping of North Ryde.	This application seeks approval for subdivision and GFA allocation, site preparation, subdivision, civil works and public domain works consistent with the listing of State Significant Development on the site as listed in the <i>State Environmental Planning Policy (State and Regional Development) 2011</i>. While the proposal allocates GFA to each lot, no built form or residential development is proposed a part of this application. The GFA allocation does not seek to increase that which is permissible for the site as a whole under the Ryde LEP 2014. This was established through a comprehensive rezoning process which determined the appropriate density framework for the site. This application seeks to establish open space, roads and pedestrian and cycle links to facilitate future residential and mixed use development on the site. The merits of future development including its built form and design, residential amenity and impacts on the environment will be assessed during future development applications.
Pirasta Pty Ltd	
General support for development of the precinct but express concern with: ▪ Commitment to external road infrastructure is inadequate and lacks impetus. The proposed infrastructure upgrades are critical. The intersections are already failing and will be placed under increased pressure. ▪ No offsite mitigation measures are proposed other than traffic lights at Wicks / Waterloo.	The traffic and transport impacts of the broader redevelopment of the Precinct have been addressed in the TMAP and Rezoning Study. The potential traffic and transport impacts of the proposed Section 83B(3)(b) Works are largely related to construction, as the proposal does not include permanent traffic generating development Traffic and transport impacts of future development within the Precinct would also be assessed as part of future individual development applications and approvals.

ISSUE	RESPONSE
▪ Reliance on the TMAP which understates potential car usage. ▪ Reduction in additional turning lanes at Epping/Wicks Road ▪ The TMAP notes that the intersections will be under considerable stress. ▪ Failure of TMAP to consider other development in Macquarie Park. ▪ Uncertainty of timing and funding of intersection upgrades.	The Finalisation Report and the UrbanGrowth NSW letter to DPI dated 23 July 2013 documents UrbanGrowth NSW commitments associated with the development of the NRSP. The proposed works seek to provide the necessary infrastructure as a priority to facilitate delivery of development on the site including local infrastructure. A number of regional transport measures have been identified to reduce congestion in the Macquarie Park area and Urban Growth NSW has allocated \$10.4m towards these upgrades. These include upgrade to: ▪ Wicks/Epping Rd intersection ▪ Waterloo/Lane Cove Roads intersection ▪ Epping/Lane Cove Rd intersection ▪ Epping/Pittwater Rd intersection These works will be subject to a VPA between Urban Growth NSW and Transport for NSW.
John McCain and Diane Michel	
▪ Excludes Bundara Reserve from the study site and accordingly from any provisions for protection of the Reserve and its environs. ▪ No direct public transport is contemplated to carry residents of the North Ryde Station Precinct to Top Ryde and West Ryde. Refusals to provide on-site parking at North Ryde Station. ▪ All of Bundara Reserve and adjacent RMS land, nominated for placement of a double Pedestrian-Cycle Overbridge support structure, has been omitted from Director General's Requirements for this EIS. The nominated location of the third bridge support, adjacent the Station North site, also has been omitted. This denies Bundara Reserve and similarly affected areas the protection of an adequate Assessment, and of Vegetation Management and Construction Environmental Management Plans. ▪ Only a small part of the M2 site itself is included in the EIA, approx. 4,437 sqm of 92,058 sq m. ▪ EIA shortcomings in extent of area	▪ A comprehensive assessment of the impact of the proposal on Bundara Reserve has now been included in the amended application. ▪ This application does not include any residential development or built form on the site. Accordingly, no public transport is proposed at this stage. Bus stops adjacent and within the site are proposed. The TMAP and Traffic and Transport Impact Assessment provide a Parking Management Strategy for the site. All parts of the M2 Site lie within 800m walking distance of bus stops in either Epping Road, Delhi Road or Waterloo Road, again the equivalent of a 10 minute walk. ▪ The impacts of the bridge structure on the RMS site and Bundara Reserve has been included in the revised Ecological Impact Assessment and the Vegetation Management Plan. This is discussed further in Section 2.2.2. ▪ The site area consists of the M2 site in its entirety being 91,530sqm as described in Section 2.1.2 of the EIS. The Ecological Impact Assessment encompasses the whole M2 Site. The <i>Syncarpia glomulifera</i> is to be retained. ▪ The EIA has included an assessment of the direct and indirect impacts on Sydney Turpentine Ironbark Forest. The design response has resulted in reduced impact on the EEC at Bundara Reserve. Some trimming of trees may be required and assessment has been done based on 0.02 ha of direct impact and

ISSUE	RESPONSE
assessed, and also in rigour where an assessment was applied, have real potential of adverse- impact on flora and fauna, on and off site. ▪ Mature native trees at M2 Site southern and eastern boundaries do not appear to be identified for preservation. Presence of a somewhat notorious and extremely invasive noxious weed is neither acknowledged nor earmarked for management. ▪ Loss of habitat is discounted under the assumption that disturbed fauna will find space at Lane Cove River National Park. ▪ Various changes in policy, focus, process and personnel have affected aspects of this EIS. Some changes have brought about improvements, but there also is a risk that flaws will be carried over into "works associated with the proposed development.' ▪ Some documents in this EIS are unreliable in details such as locations, directions and numbers. ▪ Time constraints do not permit our attention to all reports included in the EIS.	the indirect impacts associated with construction. A CEMP to reflect the nature of these disturbances and the potential impacts is to be prepared prior to construction works. ▪ The EPBC Act definitions are set by the Commonwealth. The EIA has been prepared in accordance with the guidelines and definitions under this Act. Direct impacts are those that involve clearing and there are no direct impacts proposed with the exception of trimming required for the bridge construction. ▪ The survey of the site was conducted by EcoLogical Australia. The noxious weed species were not recorded during the survey and the VMP included treatment for potential weed species. The landscape treatment in the southern part of the M2 site will clear weeds and exotics and result in more sympathetic plantings. Ecological Australia have also undertaken an ecological assessment of the entire M2 Site and Bundara Reserve vegetation including the 'isolated' trees on the M2 Site in terms of ecological significance and determine removal is acceptable. ▪ Overall, the assessment of indirect impacts was based on works being conducted within the M2 Site. The response in the EIA was based on the potential impacts of these works on the Bundara Reserve. ▪ Erosion and sediment control measures are part of the CEMP and stormwater runoff will be mitigated as part of the construction phase. ▪ Wastewater management pertains to the infrastructure at the M2 Site only. There is no requirement for additional wastewater management at Bundara Reserve as no additional edge effects should occur. ▪ No trees are proposed to be removed within Bundara Reserve. ▪ Impacts to Bundara Reserve have been minimised as recommended in the EIA. Lighting on the pedestrian and cycle bridge will be directed to minimise impacts and there will be no floodlighting on the bridge or in the reserve. ▪ The site is not listed in the GDE Atlas as being groundwater dependent. The NOW Risk Assessment Guidelines for GDE states that this vegetation type may be GDE. However application of this assessment is in relation to water extraction activities. ▪ The EIS and accompanying documents forming part of the SSDA were prepared in accordance with the SEARs and have been prepared by a team of specialist consultants. This report responds to the assessment comments received from DPE and responds to the issues raised during public exhibition.

ISSUE	RESPONSE
	▪ The SSDA was exhibited in accordance with the time periods specified under the <i>Environmental Planning and Assessment Regulation 2000</i>.
Sydney Trains	
<u>Future Development Applications</u> Sydney Trains requests the imposition of the following condition of consent: ▪ The lodgement of any future development applications for the development of the newly created allotments which involves ground penetration (eg excavation, piling etc) deeper than 2m either above or within 25m of the rail corridor shall be accompanied with the following documentation: ▪ Geotechnical and Structural report/drawings that meet Sydney Trains requirements. The Geotechnical Report must be based on actual borehole testing conducting on the site closest to the drainage system. ▪ Construction methodology with construction details pertaining to structural support during excavation. ▪ Cross sectional drawings showing ground surface, drainage infrastructure, sub soil profile, proposed basement excavation and structural design of sub ground support adjacent to the drainage system. All measurements are to be verified by a Registered Surveyor. ▪ Detailed Survey Plan showing the relationship of the proposed developed with respect to the Sydney Trains drainage system. The above documentation is required by Sydney Trains in order to assess the proposal for concurrence in accordance with Clause 86 of <i>State Environmental Planning Policy (Infrastructure) 2007</i>. As part of the Sydney Trains assessment of the above documentation the applicant may require additional information such as, but not limited to, a numerical analysis which assesses the	Sydney Train comments relate to future development applications where deeper excavation will be required. As part of any future application, the appropriate geotechnical and structural detail will be referred to Sydney Trains in accordance with Clause 86 of <i>State Environmental Planning Policy (Infrastructure) 2007</i>.

ISSUE	RESPONSE
different stages of loading-unloading of the site and its effect on the rock mass surrounding the rail corridor.	
<u>Section 83B(3)(b) Works</u> Sydney Trains is concerned that some of the works may impact on the rail corridor (i.e. tunnel) and as such requests the imposition of the following conditions of consent: - Any bulk excavation works that are deeper than 2m in depth and either above or within 25m of the rail corridor shall not be undertaken until endorsed in writing by Sydney Trains. Sydney Trains may require the submittal of documentation (eg geotechnical, numerical analysis etc) in order to assess any impacts on the rail tunnel or infrastructure. - Stormwater detention shall not be established either above or within 25m of the rail corridor until endorsed in writing by Sydney Trains. Sydney Trains may require the submittal of documentation in order to assess any impacts on the rail tunnel or infrastructure. - Any enabling works, civil works, or installation of below ground services that involve ground penetration deeper than 2m in depth either above or within 25m of the rail corridor shall not be undertaken until endorsed in writing by Sydney Trains. Sydney Trains may require the submittal of documentation (eg geotechnical, structural documentation etc) in order to assess any impacts on the rail tunnel or infrastructure. - The shared pedestrian and cycle bridge is to be modified to ensure that no part of the bridge is located within the Sydney Trains easement surrounding the substation located on Lot 1 DP 1131774. - No bridge columns/piers are to be installed above or within 25m of the rail corridor until the following documentation has been submitted to, and endorsed in writing by,	The conditions recommended by Sydney Trains are noted and accepted by UrbanGrowth NSW. Excavation is not anticipated to be deeper than 2m in depth. However, should this, stormwater detention or other enabling works be proposed within the relevant distance of the rail corridor, the relevant information will be provided as requested.

ISSUE	RESPONSE
Sydney Trains: 1. Final Geotechnical and Structural report/drawings that meet Sydney Trains requirements. The Geotechnical Report must be based on actual borehole testing conducting on the site closest to the drainage system. 2. Final Construction methodology with construction details pertaining to structural support during excavation. 3. Final cross sectional drawings showing ground surface, drainage infrastructure, sub soil profile, proposed basement excavation and structural design of sub ground support adjacent to the drainage system. All measurements are to be verified by a Registered Surveyor. 4. Detailed Survey Plan showing the relationship of the proposed developed with respect to the Sydney Trains drainage system. 5. If required by Sydney Trains, an FE analysis which assesses the different stages of loading-unloading of the site and its effect on the rock mass surrounding the rail corridor. Your Department is advised that above listed conditions require the submittal of documentation which is normally required by Sydney Trains in order to process concurrence in accordance with Clause 86 of <i>State Environmental Planning Policy (Infrastructure) 2007</i>.	

4 The Proposal

4.1 SUMMARY OF PROPOSED CHANGES

The response to DPE's letter correspondence, submissions and provision of additional information has resulted in amendments to the proposed development. The amendments are summarized in the sections below.

4.1.1 DEVELOPMENT LOTS

The following amendments to the development lots are proposed:

- Lot 103 is proposed as an Open Space Dedication Lot.
- The future community facility has been relocated from Lot 103 to Lot 104.
- Lot 108 is to be an Open Space Dedication Lot for dedication to Council.
- The community facility has been excluded from GFA and site area.

It should be noted that the proposed GFA for each lot remains as originally proposed.

4.1.2 SUBDIVISION

Table 13 details the amendments made to the subdivision layout and site area.

TABLE 12 – AMENDMENTS TO LOT AREAS

PROPOSED LOT DESCRIPTION	PREVIOUS LOT AREA	AMENDED LOT AREA	CHANGE IN SQM
Lot 101	4,437sqm	4,350sqm	- 87sqm
Lot 103	4,395sqm	2,941sqm	- 1,454sqm
Lot 104	11,731sqm	12,531sqm	+800sqm
Lot 105	2,645sqm	2,822sqm	+177sqm
Lot 106	5,538sqm	5,736sqm	+198sqm
Lot 107	1,317sqm	1,317sqm	0
Lot 108	2,075sqm	2,075sqm	0
Lot 109	605sqm	605sqm	0
Part Lot 111	1,040sqm	1,036sqm	- 4sqm
Part Lot 111	1,124sqm	1,124sqm	0
Part Lot 111	1,124sqm	1,124sqm	0
Part Lot 111	481sqm	481sqm	0
Lot 112	97sqm	97sqm	0

PROPOSED LOT DESCRIPTION	PREVIOUS LOT AREA	AMENDED LOT AREA	CHANGE IN SQM
Lot 201	6,275sqm	6,275sqm	0
Lot 202	6,395sqm	6,395sqm	0
Lot 203	7,764sqm	7,764sqm	0
Lot 204	6,767sqm	6,767sqm	0
Lot 205	3,380sqm	3,380sqm	0
Lot 206	2,507sqm	2,507sqm	0
Lot 207	2,656sqm	2,656sqm	0
Lot 208	3,135sqm	3,135sqm	0
Road 1 - 4			-374sqm
TOTAL	75,488sqm	75,488sqm	

4.1.3 PEDESTRIAN AND CYCLE BRIDGE

The truss style bridge has been revised to a tubular truss design. The revised design of the bridge proposes a landing zone within public open space on proposed Lot 103.

FIGURE 15 – PREVIOUSLY PROPOSED PEDESTRIAN AND CYCLE BRIDGE



FIGURE 16 – AMENDED PEDESTRIAN AND CYCLE BRIDGE



4.2 LANDSCAPING

There have been a number of amendments to the proposed public open space areas including play area arrangements, landscaping treatment and species types and street tree planting. The amendments to the landscaping are set out in **Table 14** below.

TABLE 13 – PROPOSED LANDSCAPING AMENDMENTS

LANDSCAPING ELEMENT	REVISIONS
Community Plaza	- Revised landing of the bridge on Lot 103 with expanded Community Plaza - Revised bus stop location along Plaza Street - Shared pedestrian and cycle path and bike racks within plaza - Adjusted location of retaining wall adjacent to the M2 Motorway within Community Plaza - Pathway connection from Delhi Road to the Community Plaza increased from 2m to 3m.
Bushland Reserve	- Realigned crossovers to Wicks/Waterloo intersection - Revised and reduced boardwalk area with viewing platforms - Amended landscape treatment to Spine Road - Increase of timber deck within Bushland Reserve from 1.2m to 1.5m - Deletion of seating at reserve entry - Retaining wall to be constructed of sandstone and realigned in proximity to Spine Road - Environmental interpretation panels to be integrated into balustrades - Identification of trees to be removed located within Spine Road
Linear Park	- Revised footpath alignment through Linear Park - Reduction and reallocation of play and seating areas and increased turf areas - Deletion of water features

LANDSCAPING ELEMENT	REVISIONS
	Revised landscaping treatment adjacent to Spine Road
Central Park	- Amendments to avenue tree planting along retail edge - Provision of public and Sydney Buses amenities - Skate park to the western end of Central Park replacing the gathering zone - Granite paved footpath connection to Linear Park - Revised play space - Potential for WSUD to be integrated within the garden edge to Park Street - Revised BBQ and gathering space adjacent to play space - Realignment of stage area - Revised public art opportunities and gateway markers associated with Central Park and the Community Plaza
Street tree planting, verge and WSUD planting	- Revised species selection for planting in WSUD tree pits - Reduction in pot size of planting on verge - Reduction in selected pot sizes for street tree planting - Revision of pot sizes and spacing of shrubs, climbers and ground cover in Central Park - Additional tree types within Central Park - Additional tree types within Community Park

4.3 ROADS

The following amendments are proposed to roadways and footpaths:

- Services and tree pits have been coordinated. The trees have an allowance of a tree pit size of 1200x900mm with a minimum soil depth of 1000mm.
- The Epping Road access way design has been modified in order to ensure connectivity of footpaths. The footpath to Epping Road has been increased from 1.5m to 1.6m wide
- An additional service vehicle access point is proposed from Epping Road to Lot 104, immediately east of the Spine Road access point.
- Access ways with minimal width of 7.0m are now proposed.
- The Plaza Street / Park Street bus zone has been revised to provide sufficient length for 2 no bus drop off / layover areas and 1 no bus stop / boarding point. ‘
- Additional line marking enhancements to improve the visual cue of ‘No Stopping’ restrictions are now included.
- Line marking is proposed to reinforce ‘no stopping’ at Lot 106.

- Allocation of bus stops and layover zones has been included in the amended Civil Plans. Two bus stops are proposed to be provided on Spine Street (one in each direction) and on the Park Street / Plaza Street clockwise loop where the proposed bus zone length is sufficient to provide two bus setting down / layover spaces and one bus stop boarding point. Revised carriageways and footpath areas are provided adjacent to bus stops on Plaza Street and Spine Road.
- A revised share way on Park Street from 4.5m to 4m
- Increased carriageway and revision of shared path and verge on Spine Road adjacent to Bushland Reserve
- Revision to Porters Creek upgrade layout with construction of a new culvert under the Spine Road, of the same size as the existing culvert.
- Revision to stormwater treatment devices on street verges.
- Relocated gas main shown on the Civil Plans (C-0-3-00).

4.4 SUMMARY OF THE PROPOSED DEVELOPMENT

In summary, staged development consent is sought for:

- A Concept Proposal for development of the M2 site in stages as described in the Concept Proposal described below; and
- Section 83B(3)(b) Works as described in Section 4.1.2.

4.4.1 CONCEPT PROPOSAL

The Concept Proposal seeks consent for:

- Subdivision of the site into 12 development lots, 5 public open space lots, and 2 public road lots as shown on the draft Subdivision Plan B1505-B1612-Overall-F prepared by Project Surveyors (refer **Appendix A**).
- Allocation of maximum gross floor area on the development lots of 238,919sqm as described in **Table 15** with the buildings for residential accommodation, retail, commercial and business premises to be the subject of subsequent detailed applications for consent.
- Allocation of maximum gross floor area on the public open space Lot 104 of 2,500sqm for a community facility building which is to be the subject of a subsequent development application for consent.

TABLE 14 – PROPOSED GFA ALLOCATION

PROPOSED LOT DESCRIPTION	MAXIMUM GFA ALLOCATION (SQM)
Development Lot 104	51,836
Development Lot 105	21,684
Development Lot 107	4,332
Development Lot 201	42,949
Development Lot 202	25,626
Development Lot 203	28,468

PROPOSED LOT DESCRIPTION	MAXIMUM GFA ALLOCATION (SQM)
Development Lot 204	15,764
Development Lot 205	29,210
Development Lot 206	5,413
Development Lot 207	6,883
Development Lot 208	6,754
TOTAL	238,919

It is proposed that, in accordance with Section 83B(3)(a) of the *Environmental Planning and Assessment Act 1979*, consent will be sought separately to erect and use buildings and ancillary development on the development lots and the community facility on Lot 104.

4.4.2 SECTION 83B(3)(B) WORKS

Under Section 83B(3)(b) of the *Environmental Planning and Assessment Act 1979*, development consent is sought for the following development ("**Section 83B(3)(b) Works**"), without the need for a further development consent, as follows:

- Subdivision of the site into 12 development lots, 5 public open space lots, and 2 public road lot as shown on the draft Subdivision Plans B1505-B1612-Plan 3-D prepared by Project Surveyors (refer **Appendix A**).
- Staging of the above subdivision in the following manner:

TABLE 15 – PROPOSED SUBDIVISION STAGING

STAGE	DEVELOPMENT IN THE STAGE
Stage 1	All works listed in Section 4.4.3 below.
Stage 2	2A. The subdivision shown in the draft Subdivision Plans B1505-B1612-Plan 3 D prepared by Project Surveyors (refer Appendix A) 2B. All works listed in Section 4.4.4 below.
Stage 3	Construction of the pedestrian/cycle bridge across Delhi Road to the North Ryde Station will be completed prior to the release of the first occupation certificate for residential development on the site.
Stage 4	Creation of Lot 201
Stage 5	Creation of Lot 202
Stage 6	Creation of Lot 203
Stage 7	Creation of Lot 204
Stage 8	Creation of Lot 205
Stage 9	Creation of Lot 206

STAGE	DEVELOPMENT IN THE STAGE
Stage 10	Creation of Lot 207
Stage 11	Creation of Lot 208

Despite the staging described above, it is proposed that Stage 1 must be carried out first followed by Stage 2. Stages 4 to 11 both inclusive may be carried out in any order and any combination of stages 4 to 11 both inclusive may be combined or carried out simultaneously.

4.4.3 LIST OF WORKS FORMING STAGE 1

The works forming part of Stage 1 and referred in the right hand column of **Table 15** are:

- Site preparation works:
 - Demolition, site clearing and vegetation removal.
 - Remediation works.
 - Bulk earth works including site regrading, box-out of roads and removal of surplus fill material.
 - Temporary stormwater detention.
 - Sedimentation and erosion controls.
 - Rehabilitation of riparian zone along the Porters Creek within the Northern Bushland Park.

4.4.4 LIST OF WORKS FORMING PART OF STAGE 2

The works forming part of Stage 2 and numbered “2B” and referred to in the right hand column of **Table 15** are:

- Public Land works associated with roads and intersections:
 - Signalised intersection of Waterloo Road and Wicks Road including pedestrian crossing.
 - Extension of Waterloo Road through the M2 Site to Epping Road to create a Spine Road.
 - A left-in intersection for the M2 Site on Epping Road.
- Public Land construction and upgrade to pedestrian pathway and cycleway networks, including:
 - Shared ways for pedestrian and cycleway connectivity along the Spine Road and around the central open space from Wicks Road to the pedestrian/cycle bridge.
- Establishment of the following areas of open space on the Public Land open space lots:
 - Northern Bushland Park.
 - Community Linear Park.
 - Central public open space.
 - Community Plaza
- The enabling works for the subsequent construction of a community facility building.

- Drainage and Water Sensitive Urban Design (WSUD) works on the Public Land, including:
 - Stormwater drainage and water quality infrastructure.
 - Porters Creek culvert.
 - Rehabilitation of riparian zone along the Porters Creek within the Northern Bushland Park.
- Public domain works on the Public Land, including:
 - Civil works, trenching in road corridors with provision of utility infrastructure for electricity, gas, potable water, sewer and telecommunications.
 - Open space embellishment.
 - Street planting and installation of furniture.
 - Street lighting along all new roads.
 - Public art installation.
 - Public toilet block in Central Park.

The project also includes the following associated works:

- Delhi Road footpath connection and landscape works to the site frontage.
- Epping Road footpath upgrade and landscape works to the site frontage.
- Wicks Road footpath upgrade and landscape works to the site frontage, intersection upgrade and stormwater and drainage augmentation works at the Wicks/Waterloo road intersection.
- Water main from the M2 Site, under Epping Road and along Ryrie Street to connect to Cox's Road.
- Sewer main from the Wicks and Waterloo Roads intersection along Wicks Road.
- An electricity feeder main from Macquarie Park substation along Waterloo Road into the M2 Site.
- Electricity feeder main/s from Top Ryde substation along a number of local roads into the M2 Site.
- Relocation of the existing gas main to along the eastern and northern boundaries of the M2 site.

The Section 83B(3)(b) works listed in Table 15 are proposed to be undertaken in two stages, with separate Construction Certificates for:

- Stage 1 Construction Certificate – Site preparation works; and
- Stage 2 Construction Certificate – Civil and public domain works

4.5 REFERENCE DRAWINGS

This section lists the amended Draft Plans of Subdivision, Urban Design and Landscape Plans and Civil Plans referred to in the preparation of the response to submissions and additional information for which consent is sought.

4.5.1 DRAFT PLANS OF SUBDIVISION

DRAWING NUMBER	DRAWING TITLE	DATE
DRAFT SUBDIVISION PLANS prepared by Project Surveyors		
B1505-B1612-Overall -E	Plan of Subdivision of Lot 10 in DP (Plan 2)	20/10/2014
B1505-B1612-PLAN3-D	Plan of Subdivision of Lot 10 in DP (Plan 2)	20/10/2014

4.5.2 URBAN DESIGN AND LANDSCAPE DRAWINGS

DRAWING NUMBER	DRAWING TITLE	DATE
DA1 EXISTING CONDITIONS & LOCATION PLANS prepared by Bates Smart		
DA1-001 B	Cover Sheet / Location Plan NTS	26.05.2014
DA1-002 B	Site Analysis 1:2000	26.05.2014
DA1-003 B	GFA - Allocation Plan 1:1000	26.05.2014
DA3 PUBLIC DOMAIN PLANS prepared by Aspect		
DA3-001 D	Site Plan 1:1000	27.10.2014
DA3-002 D	Public Domain Plan - North 1:500	27.10.2014
DA3-003 D	Public Domain Plan - South 1:500	27.10.2014
DA3-004 D	Street Tree Master Plan & Planting Strategy 1:1000	27.10.2014
DA4 KEY PUBLIC SPACE PLAN prepared by Aspect		
DA4-001 D	Key Public Space Plan & Section - Bushland Reserve 1:250	27.10.2014
DA4-002 D	Key Public Space Plan & Section - Community Park 1:250	27.10.2014
DA4-003 D	Key Public Space Plan & Section - Central Park 1:250	27.10.2014
DA4-004D	Key Public Space Plan - Community Plaza 1:250	27.10.2014
DA5 STREET TYPOLOGY PLANS AND SECTIONS prepared by Aspect		
DA5-001 D	Street Typologies 1:100	27.10.2014
DA5-002 D	Street Typologies 1:100	27.10.2014
TOILET BLOCK PLAN prepared by Leffler Simes Architects		
SK05 B	Lachlan's Line Macquarie Park Central Park Toilet Block	07.10.14

4.5.3 CIVIL DRAWINGS

DRAWING NUMBER	DRAWING TITLE	DATE
CIVIL PLANS prepared by Robert Bird Group		
GENERAL		
C-0-0-00	Cover Sheet	21.10.14
C-0-0-02	Civil Details Plan Sheet 1 of 2	21.10.14
C-0-0-03	Civil Details Plan Sheet 2 of 2	21.10.14
C-0-0-04	Aerial Image and Site Layout	21.10.14
C-0-0-05	Survey Plan Sheet 1 of 2	21.10.14
C-0-0-06	Survey Plan Sheet 2 of 2	21.10.14
EROSION AND SEDIMENT CONTROL		
C-0-1-00	Erosion and Sediment Control Plan Stage 1 Works	21.10.14
C-0-1-01	Erosion and Sediment Control Plan Stage 2 Works	21.10.14
C-0-1-10	Erosion and Sediment Control Notes and Details Sheet 1 of 2	21.10.14
C-0-1-11	Erosion and Sediment Control Notes and Details Sheet 2 of 2	21.10.14
BULK EARTHWORKS		
C-0-2-00	Bulk Earthworks Sheet 1 of 2	21.10.14
C-0-2-01	Bulk Earthworks Sheet 2 of 2	21.10.14
C-0-2-20	Bulk Earthworks Cross Sections Sheet 1 of 3	21.10.14
C-0-2-21	Bulk Earthworks Cross Sections Sheet 2 of 3	21.10.14
C-0-2-22	Bulk Earthworks Cross Sections Sheet 3 of 3	21.10.14
ROADWORKS		
C-0-3-00	General Arrangement Plan Sheet 1 of 2	21.10.14
C-0-3-01	General Arrangement Plan Sheet 2 of 2	21.10.14
C-0-3-15	Typical Sections Plan Sheet 1 of 3	21.10.14
C-0-3-16	Typical Sections Plan Sheet 2 of 3	21.10.14
C-0-3-17	Typical Sections Plan Sheet 3 of 3	21.10.14
C-0-3-20	Spine Street Longitudinal Section Sheet 1 of 2	21.10.14
C-0-3-21	Spine Street Longitudinal Section Sheet 2 of 2	21.10.14

C-0-3-25	Park, Plaza and Retail Street Longitudinal Section Sheet 1 of 2	21.10.14
C-0-3-26	Park, Plaza and Retail Street Longitudinal Section Sheet 2 of 2	21.10.14
C-0-3-40	Swept Path Analysis Plan Sheet 1 of 3	21.10.14
C-0-3-41	Swept Path Analysis Plan Sheet 2 of 3	21.10.14
C-0-3-42	Swept Path Analysis Plan Sheet 3 of 3	21.10.14
PAVEMENT		
C-0-4-00	Pavement Layout Plan Sheet 1 of 2	21.10.14
C-0-4-01	Pavement Layout Plan Sheet 2 of 2	21.10.14
C-0-4-10	Pavement Details Plan	21.10.14
SIGNS AND LINEMARKING		
C-0-5-00	Signs And Line Marking Plan Sheet 1 of 7	21.10.14
C-0-5-01	Signs And Line Marking Plan Sheet 2 of 7	21.10.14
C-0-5-02	Signs And Line Marking Plan Sheet 3 of 7	21.10.14
C-0-5-03	Signs And Line Marking Plan Sheet 4 of 7	21.10.14
C-0-5-04	Signs And Line Marking Plan Sheet 5 of 7	21.10.14
C-0-5-05	Signs And Line Marking Plan Sheet 6 of 7	21.10.14
C-0-5-06	Signs And Line Marking Plan Sheet 7 of 7	21.10.14
STORMWATER		
C-0-6-00	Stormwater Layout Plan Sheet 1 of 2	21.10.14
C-0-6-01	Stormwater Layout Plan Sheet 2 of 2	21.10.14
C-0-6-02	Porters Creek Culvert Upgrade Layout Plan	21.10.14
C-0-6-03	Porters Creek Culvert Upgrade Sections Plan	21.10.14
C-0-6-10	Stormwater Details Sheet 1 of 7	21.10.14
C-0-6-11	Stormwater Details Sheet 2 of 7	21.10.14
C-0-6-12	Stormwater Details Sheet 3 of 7	21.10.14
C-0-6-13	Stormwater Details Sheet 4 of 7	21.10.14
C-0-6-14	Stormwater Details Sheet 5 of 7	21.10.14
C-0-6-15	Stormwater Details Sheet 6 of 7	21.10.14
C-0-6-16	Stormwater Details Sheet 7 of 7	21.10.14

C-0-6-17	Pit Schedule Sheet 1 of 2	21.10.14
C-0-6-18	Pit Schedule Sheet 2 of 2	21.10.14
C-0-6-50	Stormwater Catchment Plan Sheet 1 of 2	21.10.14
C-0-6-51	Stormwater Catchment Plan Sheet 2 of 2	21.10.14
SERVICES		
C-0-9-01	Combined Services Plan Sheet 1 of 7	21.10.14
C-0-9-02	Combined Services Plan Sheet 2 of 7	21.10.14
C-0-9-03	Combined Services Plan Sheet 3 of 7	21.10.14
C-0-9-04	Combined Services Plan Sheet 4 of 7	21.10.14
C-0-9-05	Combined Services Plan Sheet 5 of 7	21.10.14
C-0-9-06	Combined Services Plan Sheet 6 of 7	21.10.14
C-0-9-07	Combined Services Plan Sheet 7 of 7	21.10.14
C-0-9-10	Combined Services Section Plan	21.10.14
M2 SITE EXTERNAL INTERSECTION WORKS		
C-1-3-00	Wicks and Waterloo Road General Arrangement Plan	21.10.14
C-1-3-01	Epping Road Deceleration Lane	21.10.14
C-1-3-20	Wicks Road Longitudinal Section	21.10.14
C-1-3-21	Wicks Road Cross Sections Sheet 1 of 2	21.10.14
C-1-3-22	Wicks Road Cross Sections Sheet 2 of 2	21.10.14
C-1-3-40	Wicks and Waterloo Road Swept Path Analysis Plan	21.10.14
C-1-4-00	Wicks and Waterloo Road Pavement Layout Plan	21.10.14
C-1-4-01	Epping Road Pavement Layout Plan Sheet 1 of 2	21.10.14
C-1-4-02	Epping Road Pavement Layout Plan Sheet 2 of 2	21.10.14
C-1-4-10	Wicks and Waterloo Road Pavement Details	21.10.14
C-1-4-11	Epping Road Pavement Details	21.10.14
C-1-5-00	Wicks and Waterloo Signs and Line Marking Plan	22.10.14
C-1-5-01	Epping Road Deceleration Lane Signs and Line Marking Plan	21.10.14
C-1-6-00	Wicks and Waterloo Road Stormwater Layout Plan	21.10.14

4.5.4 BRIDGE DRAWINGS

DRAWING NUMBER	DRAWING TITLE	DATE
Pedestrian and Cycle Bridge Plans prepared by KT Studio		
S-300 P1	Cover Sheet	28.10.14
S-301 P1	General Notes – Sheet 1	28.10.14
S-310 P4	Site Plan	28.10.14
S-320 P1	General Arrangement and Elevations	

5 Revised Mitigation Measures

A range of mitigation measures were proposed to reduce any potential environmental and social impact of the proposal in Section 9 of the EIS. With consideration to the submissions received and the additional information prepared, amendments and additions to these mitigation measures are now proposed (as shown in red).

Table 16 and **Table 17** provide amended versions of the environmental management measures proposed. Following approval of the Section 83B(3)(b) Works, the conditions of consent would guide the subsequent phases of the proposal. Any consortium or contractor selected to undertake further planning, detailed design, construction and/or operation of the proposal would be required to undertake all works in accordance with these specified environmental management measures and conditions of approval.

5.1 DETAILED DESIGN

Environmental management measures to be implemented during the detailed design phase of the proposal are listed in **Table 17**.

TABLE 16 – DETAILED DESIGN ENVIRONMENTAL MANAGEMENT MEASURES

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
A. Ecology	
A.1	Opportunities to further reduce the clearing of native vegetation would be investigated during detailed design.
B. Pedestrian Bridge	
B.1	The colour of the shared pedestrian and cycle bridge is to be selected to avoid reflection.
B.2	A community engagement plan for the construction of the bridge to the satisfaction of Roads and Maritime.
C. Footpath and Road Design	
C.1	All roads will be constructed with concrete pavement and in accordance with Council's specifications.
C.2	Footpath crossings will be constructed where vehicles cross the footpath in accordance with the <i>Ryde Environmental Standards - Development Criteria Section 4 - Public Civil Works</i> , and all relevant Australian Codes and Standards. Crossings will be constructed to match the granite paving and finished levels.
C.3	An independent design road safety audit is to be undertaken, for the full public road architecture, in accordance with RMS Guidelines.
C.4	An independent bicycle road safety audit of the bridge design will be undertaken to consider the transition points from the bridge to the adjoining footway/shared path at both ends.
C.5	The provision of the new traffic control signals and civil works at the intersection of Wicks Road/Waterloo Road/Spine Road shall be designed to meet Roads and Maritime requirements and endorsed by a suitably qualified practitioner. The design requirements shall be in accordance with Roads and Maritime Road Design Guide, Roads and Maritime Traffic Signal Design Manual

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
	and other Australian Codes of Practice. The submitted design shall be in accordance with Austroads Guide to Road Design in association with relevant Roads and Maritime supplements.
C.6	Road, bridge and traffic control facility works associated with the bridge to be undertaken by a pre-qualified contractor. The traffic management arrangements for construction to be to the satisfaction of Roads and Maritime.
C.7	The left in only access shall be designed and constructed in accordance with Austroads Guide to Road Design in association with relevant Roads and Maritime supplements
D. Bus Stops	
D.1	All bus stops will be designed in accordance with <i>Disability Standards for Accessible Public Transport 2002</i> .

5.2 CONSTRUCTION

Environmental management measures to be implemented during the construction phase of the proposal are listed in **Table 17**.

TABLE 17 – CONSTRUCTION ENVIRONMENTAL MANAGEMENT MEASURES

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
C. Ecology	
C.1	a) Works are to be undertaken in accordance with the VMP prepared by EcoLogical Australia. b) Specific environmental safeguards and mitigation measures to be adopted as identified in the "M2 Site SSDA VMP", prepared by Eco Logical Australia, dated 1 May 2014. c) In addition, the environmental safeguards recommended in the VMP would be implemented.
C.2	All workers would be provided with an environmental induction prior to commencing work on-site. The induction should include items such as: I. Sensitivity of vegetation in the Porters Creek riparian corridor and adjacent Northern Bushland Park. II. Site environmental procedures (vegetation management, sediment and erosion control, protective fencing, noxious weeds). II. What to do in case of emergency (sediment fence failure, injured fauna). ✓. Key contacts in case of environmental emergency e.g. WIRES, Sydney Wildlife Rescue

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
C.3	a) Accurately and clearly mark out the limits of clearing and trees / vegetation to be retained. b) Identify, retain and protect trees close to the work areas which are at risk during construction and install protective fencing (temporary fluoro orange 'para-web' fencing or similar). This high visibility fencing would reduce risk during construction phases of the development. c) Do not store materials / vehicles under the drip-line (canopy) of retained vegetation
C.4	a) Qualified ecologist to conduct pre-clearing surveys of habitat trees in Sandstone Ridgetop Woodland (SRW) within the site and the weed infested areas adjoining the Red-crowned Toadlet habitat on the western boundary of the site.
C.5	a) Where trees require felling, retain the timber, particularly sections with hollows - as Coarse Woody Debris for enhancement of the riparian corridor. b) Cease work immediately if any previously unknown threatened flora or fauna species are encountered. WIRES or Sydney Wildlife Rescue should be consulted if any injured fauna are encountered.
C.6	a) Construct and place six nest boxes in the riparian zone at the northern end of the M2 Site. Boxes should be designed for use by micro-chiropteran bats.
C.7	a) Provide appropriate controls to manage exposed soil surfaces and stockpiles to prevent erosion and subsequent sediment discharge into surrounding areas including the Porters Creek and Lane Cove River catchments. b) Clearly identify stockpile and storage locations and provide erosion and sediment controls around stockpiles. c) Stockpiles of topsoil to be stored in windrows no higher than 2m and be maintained free of weeds. d) Undertake dust suppression where required in accordance with the <i>Protection of the Environment Operations Act 1997</i> (POEO Act) where there is a risk of increased dust outside of acceptable levels
C.8	a) Clearly demarcate riparian areas from construction / work areas and protect riparian areas with para-web fencing or similar. No access or works would occur outside the 2m works buffer to the retaining wall or boardwalk. b) Ensure all works within proximity to riparian zones have adequate sediment and erosion controls, in particular construction of the retaining wall and raised boardwalk. No materials or vehicles are to be stored within the riparian zone, drip zone of trees or the 30 m creek buffer zone. Works are to be timed to avoid heavy rain periods and no earth works are to be conducted during rain events. Soils must be immediately stabilised following works to prevent sedimentation of Porters Creek.
C.9	a) Incorporate stormwater management techniques that control stormwater quality and quantity by adopting stormwater treatment measures to remove gross pollutants, including sediments, from urban runoff to mimic pre-construction water quality and quantity, minimising impacts on downstream receiving waters (see Storm Consulting 2011).

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
C.10	a) Ensure site office and plant storage areas are located outside of vegetated areas.
C.11	a) No night works would be allowed within the riparian corridor. b) Use low-pressure sodium lamps instead of high-pressure sodium or mercury lamps where lights are required, where possible. Restrict column heights such that lights are mounted at the lowest heights possible. Avoid lighting of the Bushland Park Reserve raised timber boardwalk and landings to minimise light spill to the riparian corridor and to minimise human disturbance at night.
C.12	a) Establish and implement a Hygiene Protocol for vehicles entering and leaving the site to minimise spread of weeds and other biological risks such as Phytophthora management protocol. b) Inspect all construction machinery and vehicles and thoroughly clean with a high pressure hose or similar prior to entry to site so that no vegetative matter or soil is brought onto the site in tacks or wheels. c) Implement inspection/maintenance procedures to reduce the carriage of weed material on machinery.
C.13	a) Develop a monitoring program during construction (including a weekly checklist) to ensure that all mitigation measures proposed have been undertaken. The checklist should include items such as fencing and sediment and erosion control.
C.14	In accordance with the Ecological Impact Assessment: a) Ensure all works within proximity to riparian zones and sensitive vegetation have adequate sediment and erosion controls, in particular construction of the retaining wall, scour protection structures, raised boardwalk and cycle and pedestrian bridge. b) Use directional lighting on the pedestrian and cycle bridge to limit light spill into the Bundara Reserve and RMS Site. No floodlighting is to be used in this area. c) Consider contributions to Bushcare works in Bundara Reserve to mitigate against potential impacts as a result of shading from the bridge.
D. Noise and vibration	
D.1	a) A Construction Noise and Vibration Management Plan (CNVMP) is to be prepared by the relevant contractor to be included as part of CEMP. The CNVMP would take into consideration measures for reducing the source noise levels of construction equipment by construction planning and equipment selection where practicable. b) The CNVMP is to address each major stage of the construction works and identify the appropriate mitigation and management measures, consistent with the requirements of the <i>Interim Construction Noise Guideline</i> . c) Use of localised acoustic hoarding around all significantly noise generating items of plant where practicable. This would expect to provide between 5dB and 10dB of additional noise

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
	attenuation provided the line of sight between all receivers and construction equipment is broken. Barriers are most effective when located either close to the noise source of the receiver. d) Scheduling of the higher Noise Management Level exceedance activities/locations to be undertaken predominately during less noise sensitive periods, where available and possible. e) Avoid the coincidence of noise plant working simultaneously close together and adjacent to sensitive receivers. f) Briefing of the work team in order to create awareness of the locality of sensitive receivers and the importance of minimising noise emissions. g) Use of less noise intensive equipment, where reasonable and feasible. h) Use of non tonal reversing alarms fitted to all construction vehicles. i) Loading and unloading should be carried out away from sensitive receivers, where practical.
D.3	a) Relocate vibration generating plant and equipment to areas within the site in order to lower the vibration impacts at affected locations.
D.4	a) Construction works should be carried out Monday to Friday, 7.00 am to 6.00 pm, where possible. Work generating high vibration levels should be scheduled during less sensitive periods.
D.5	a) Use lower vibration generating items of excavation plant and equipment where feasible.
D.6	a) Minimise consecutive works in the same locality (if applicable).
D.7	a) High vibration generating activities such as vibratory rolling, hydraulic hammering and piling should only be carried out in continuous blocks, not exceeding 3 hours each, which a minimum respite period of 1 hour between each block where these works are proposed in proximity to sensitive receivers.
E. Design and visual amenity	
E.1	a) Temporary hoardings, barriers, traffic management and signage would be removed when no longer required.
E.2	a) Work/site compounds would be screened, with shade cloth (or similar material) (where necessary) to minimise visual impacts from elevated locations.
E.3	a) Graffiti would be required to be managed by the contractor throughout construction.
F. Access, traffic and transport	
F.1	a) A Construction Traffic Management Plan (CTMP) will be prepared once all construction details are finalised. The CTMP is to include: ▪ Construction schedule, including a breakdown to peak demolition/construction phases ▪ Construction staff numbers during across all demolition/construction phases ▪ Construction vehicle numbers during across all demolition/construction phases

ITEM AND REFERENCE NUMBER	ENVIRONMENTAL MANAGEMENT MEASURE
	▪ Construction vehicle travel routes, including routes to be used by oversized vehicles and vehicles carrying hazardous materials ▪ Traffic and parking management strategies to minimise impacts to the local traffic, pedestrian and cyclist environment ▪ Traffic management plans for key demolition/construction phases, including (but not limited to) the following: - – The construction/upgrade of the intersection of Wicks Road, Waterloo Road and Spine Road – The construction of the intersection of Epping Road and Spine Road – The construction of the shared pedestrian and cycle bridge
G. Non-Indigenous Heritage	
G.1	a) A short program of archaeological monitoring will be required to re-identify the cistern/well, and ensure it is uncovered without further damage. The monitoring program will commence within the 15 metre perimeter buffer around the known location of the cistern/well. The monitoring program will also identify any additional archaeological remains within the study area. If unexpected archaeological remains are encountered during the monitoring phase, adequate time and resources should be afforded to the archaeologist/s on site to identify, excavate and record the remains (if necessary).
G.2	a) Archaeological excavation of the cistern/well should be conducted by a suitably qualified archaeologist. It is recommended that the material within the structure be manually excavated to a depth of 1.5 metres. This excavation phase will allow the archaeologist/s to identify and record the structure, and take samples of any material within the fill. If the structure is more than 1.5 metres in depth the remainder of the fill will need to be excavated by machine to meet occupational health and safety requirements. Appropriate samples will be taken. Artefacts will be collected and examined by specialists.
H. Aboriginal heritage	
H.1	a) If Aboriginal objects are located during future construction, work should stop immediately and the OEH, the Aboriginal stakeholder groups, and an archaeologist should be contacted. Further archaeological work may be required.
I. Contamination	
I.1	a) A detailed site investigation will be undertaken in accordance with the Remediation Action Plan prepared by Douglas Partners and dated April 2014.
I.2	a) The RAP will be subject to revision upon completion of the site investigation and any subsequent investigations deemed necessary to delineate and define the extent of remediation. The revised RAP will include the following: ▪ Background information as outlined in this current version; ▪ A summary of the results of the DSI and any subsequent investigations;

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	▪ An updated CSM, incorporating the results of the DSI; ▪ Development of Tier 2 RAC; ▪ Identification of areas / zones / media requiring remediation; ▪ A discussion on the remediation options; ▪ Decision process for determining the preferred remediation strategies; ▪ Remediation goal; ▪ The remediation process / sequence in detail; ▪ The remediation acceptance criteria and validation requirements; ▪ Waste classification process; ▪ An unexpected finds protocol; ▪ Contingency actions; ▪ A worker health and safety plan to be implemented during the remediation works; ▪ A construction environmental management plan (CEMP) to be implemented during the remediation works; ▪ A list of relevant persons and their role and responsibility during the remediation process; and ▪ Any legislative requirements that need to be met prior to or during the remediation process.
I.3	a) Should the site assessment determine that no remediation is required for the M2 Site, a report titled “site works’ plan” or similar will be prepared by the Environmental Consultant as an alternative to the RAP. The report will include the following: ▪ Background information as outlined in this current version; ▪ A summary of the results of the DSI and any subsequent investigations; ▪ Waste classification process; ▪ An unexpected finds protocol; and ▪ Contingency actions.
1.4	Compliance with the POEO Act and associated regulations must be met with regard to: ▪ Prevent pollution of waters ▪ Prevent land pollution ▪ Ensure activities are not carried out in an environmentally unsatisfactory manner. "Environmentally unsatisfactory manner" is defined in Section 95 of POEO Act; and

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	Ensure the EPA is notified of any pollution incidents that may cause or threaten material harm to the environment. Any notification must be reported to Environment Line on 131 555.
J. Geotechnical	
J.1	a) Further geotechnical investigation(s) appropriate for the proposed development should be carried out for detailed design purposes, as required for the shared pedestrian and cycle bridge structures and civil works. b) Detailed CBR testing of the subgrade will be required for pavement design as the subgrade materials vary across the sites. c) Further investigation and assessment of impacts on the ECRL from temporary and permanent works should be undertaken in accordance with the ECRL Protection Guidelines and Railcorp requirements.
K. Surface and groundwater	
K.2	a) Implement the WSUD principles provided in the Integrated Water Management Plan including: - Safe conveyance of stormwater; - Water quality treatment of runoff, in order to minimise adverse impacts on downstream waterways; - Source control, and - Incorporating stormwater management measures into the streetscape.
L. Soils and earthworks	
L.1	a) Implement the erosion and sediment control plan prepared by Robert Bird Group and including: - Sediment basins with sediment storage volume and “clean water channel” catch drains for discharge into Porters Creek; - Sediment fences around stockpiles and construction zones where soils are exposed; - Catch drains/bunds to collect construction site runoff and convey flows to the settling basin; and - Sediment protection devices on existing and proposed inlet pits i.e. filter socks.
M. Air quality	
M.1	a) Air quality mitigation measures to be included in CEMP as per recommendation in AAQCA (refer Appendix L of the SSDA). Construction air quality management will include recommendations relating to good site management, good housekeeping measures, vehicle maintenance and applying appropriate dust mitigation measures where required. This will be compiled prior to any works commencing on site. Implication will be by the site manager and project manager for the works.

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	b) CEMP to also include monitoring program as follows: ▪ Regular environmental inspections. ▪ Complaints handling. ▪ Reactive response procedures.
M.2	Dust mitigation measures from construction works include: ▪ Silt and other material removed from around erosion control structures to ensure deposits do not become a dust source. ▪ Amending of dust-generating construction activities during adverse wind conditions blowing in the direction of sensitive receptors. ▪ Minimising the use of material stockpiles and locating them away from sensitive receptor locations. ▪ Reducing the truck speeds on site will reduce wheel generated dust. It is noted that the physical size and layout of the site will act to limit truck speeds. ▪ If access track is causing problems, manual brushing of the truck's flanks and wheels could be implemented as a further precaution. Also, trucks exiting the site should be observed to determine if the both wheels travel over the shaker grid.
M.3	Control measures for emissions from plant and machinery include: ▪ Ensuring vehicles and machinery are maintained in accordance with manufacturer's specifications. ▪ Minimising truck queuing and unnecessary trips through logistical planning of materials delivery and work practices. ▪ Stationary trucks should switch off engines if idling time on-site is likely to exceed 2 minutes ▪ Fixed plant should be located as far from local receptors as practicable.
M.4	Control measures for fugitive emissions from fuel storage that may be implemented during the construction phase include: ▪ Locate fuel storage and handling areas as far from local receptors as practicable. ▪ Storage areas for all liquids should be appropriately bunded. ▪ Spill kits including absorbing materials should be provided nearby handling and storage areas. ▪ Where possible, the delivery of liquid fuels should utilise reciprocal feeds, so that tank vapours are displaced into the delivery vehicle rather than being emitted to the atmosphere as a fugitive emission. ▪ Empty containers should be managed and disposed of in appropriate manner.

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N. Sustainability	
N.1	Implement the sustainability initiatives identified in the ESD Report prepared by Cardno dated May 2014.
O. Utilities	
O.1	The Electrical Works involved in construction of the High Voltage feeders from Macquarie Park Zone Substation and Top Ryde Zone Substation would be designed and installed in accordance with: ▪ Ausgrid Network Standard and Policy NUS 174C "Environmental Procedures" May 2006 ▪ Ausgrid NUS 174A EIA Worksheet version 1.10 ▪ Ausgrid NUS174B EIA Guideline Supplementary Note – Version 11 ▪ Ausgrid NUS174C Environment Handbook for Construction and Maintenance
O.2	During design stage of the works, the Level 3 Accredited Service Provider (with assistance of the design team members, inclusive of specialist consultants, e.g. heritage, environmental consultant, arborist, etc.) undertake a computer based Environmental Impact Assessment (EIA). The EIA provides the following information: ▪ Project details and description of the environment where the works will take place. ▪ Possible approvals and licences which may be required for the works ▪ Sensitive areas and issues that may affect the project, including standard controls to mitigate these issues. ▪ Project specific environmental controls that are required in addition to the controls within Ausgrid's Environmental Policy/Handbook. The EIA must be verified by Ausgrid's Environmental Planning department prior to the design's certification and commencement of construction. Construction work would be carried out by the Level 1 Accredited Service Provider in accordance with Ausgrid's NUS174C Policy/Handbook and the completed EIA.
O.3	All telecommunications and utility services are to be placed underground.
P. Construction Management	
P.1	The Construction Environmental Management Plan must include: ▪ Contingency plan to manage any unintended or unpredicted impacts; ▪ Measures to address any environmental emergencies; ▪ Awareness training of employees and contractors of their environmental obligations; ▪ Communication strategies that involves reporting of any incidents and outcomes of monitoring to

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	appropriate regulatory authorities (ARA) and the local community; ▪ Compliance strategies to conditions and management plan requirements are being satisfied; and ▪ Complaint handling systems that provides a 24 hour contact for the community and ARAs.
P.2	Community engagement plan for the construction of the bridge is to be prepared to the satisfaction of Roads and Maritime.
P.3	Road, bridge and traffic control facility works associated with the bridge is to be undertaken by a pre-qualified contractor.
P.4	The traffic management arrangements for construction are to be to the satisfaction of RMS.
P.5	A Waste Management Plan is to be prepared prior to any construction taking place on the site. The Waste Management Plan will include information on waste generated during demolition, remediation and construction. Waste is to be classified as recommended by the EPA and the relevant guidelines.

6 Conclusion

This Response to Submissions and Additional Information Report has been prepared to respond to the letter issued by the Department of Planning and Environment dated 23 September 2014 in relation to the Staged Development Application for State Significant Development SSD_5093. The report has provided the following:

- A response to key issues raised by DPE including GFA allocation, pedestrian and cycle bridge, traffic and access and open space.
- Provision of additional information where requested or considered necessary.
- A response to the submissions received during public exhibition of the application.

In providing the additional information and response to submissions, the following has been provided to ensure that these issues are adequately addressed:

- Amendments to the proposal including:
 - Revised bridge design to directly respond to City of Ryde Council and DPE comments and landing of the bridge on Lot 103.
 - Relocation of the community facility lot from Lot 103 to Lot 104
 - Lot 103 is proposed as an Open Space Dedication Lot for dedication to Council.
 - Adjustments to the subdivision plan and lot areas.
 - A number of amendments to the proposed public open space areas including play area arrangements, landscaping treatment and species types and street tree planting.
 - Revision to Porters Creek upgrade layout with construction of a new culvert under the Spine Road, of the same size as the existing culvert.
 - An additional service vehicle access point proposed from Epping Road to Lot 104, immediately east of the Spine Road access point.
- Additional technical justification and assessment including:
 - An amended Ecological Impact Assessment and Vegetation Management Plan assessing the impact of the structure and overshadowing of the bridge on Bundara Reserve and the gas main relocation on the Northern Bushland Park.
 - Additional traffic impact assessment with regard to queuing on Wicks Road.
- Revised Mitigation Measures with additional recommendations relating predominantly to:
 - Design of the pedestrian bridge.
 - Footpath, road design and bus stops.
 - Construction management.

The amended design responds to the issues raised and results in a superior outcome for the amenity of local and future residents. The additional assessments by specialist consultants demonstrate that potential impacts associated with the proposal are considered to be acceptable. A range of recommendations have been included in the revised Mitigation Measures. The revised mitigation measures ensure that issues raised in the submissions are addressed and that appropriate measures have been incorporated to reflect the amended design.

The amended design and particularly the revised bridge design positively responds to the issue of architectural quality as raised by Council in their submission. The amendments do not constitute a change to the extent that would warrant re-exhibition of the application as it does not fundamentally alter the essence of the approval being sought. It is expected the DPE will notify the agencies and the public of the revisions to the proposal on its website.

All issues raised in the DPE's correspondence have been suitably addressed and overall, SSD_5093 as amended is considered to be in the public interest having regard to the following positive environmental, social and economic benefits:

- Recreation and pedestrian or bicycle connectivity throughout the site which links with key transport and access nodes. These will provide significant pedestrian and cycleway upgrades and new links to improve connectivity to North Ryde Station and the MPC.
- Development of a series of linked public open space areas, providing for both active and passive recreation.
- Provision of a spine road linking Epping Road to Wicks Road and providing the main vehicular connection through the site.
- Allows for future connectivity with the land (mainly of a commercial nature) immediately to the west. This can be achieved by future connections to internal roads on the M2 site.
- A shared pedestrian and cycle bridge sited at the southern end of the M2 site connecting the site with North Ryde Station.
- A future community facility is accommodated which will respond to the needs of the area and the demographic profile of the current and future population.
- Best practice sustainability measures including the use of native plants grown with locally sourced seed, WSUD measures and rehabilitation of the riparian zones adjoining Porters Creek in the northern portion of the M2 Site to create a natural open space area, thereby mitigating impacts on the nearby Bundara Reserve and Lane Cove National Park.

Given the merits of the amended proposal, it is requested that the Minister approve the proposal subject to the mitigation measures and recommendations outlined in this report.

Disclaimer

This report is dated September 2014 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of UrbanGrowth NSW (**Instructing Party**) for the purpose of Planning Report (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

Appendix A

Draft Subdivision Plans

Appendix B

Amended Urban Design and Landscape Plans

Appendix C

Amended Civil Plans and Reports

Appendix D

Amended Pedestrian Bridge Plans and Report

Appendix E

Traffic and Transport Response

Appendix F

Amended Ecological Impact Assessment

Appendix G

Amended Vegetation Management Plan

Appendix H

Letter from Australand Regarding Bridge Landing

Appendix I

Submissions

Appendix J

VPA Letter of Offer

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