

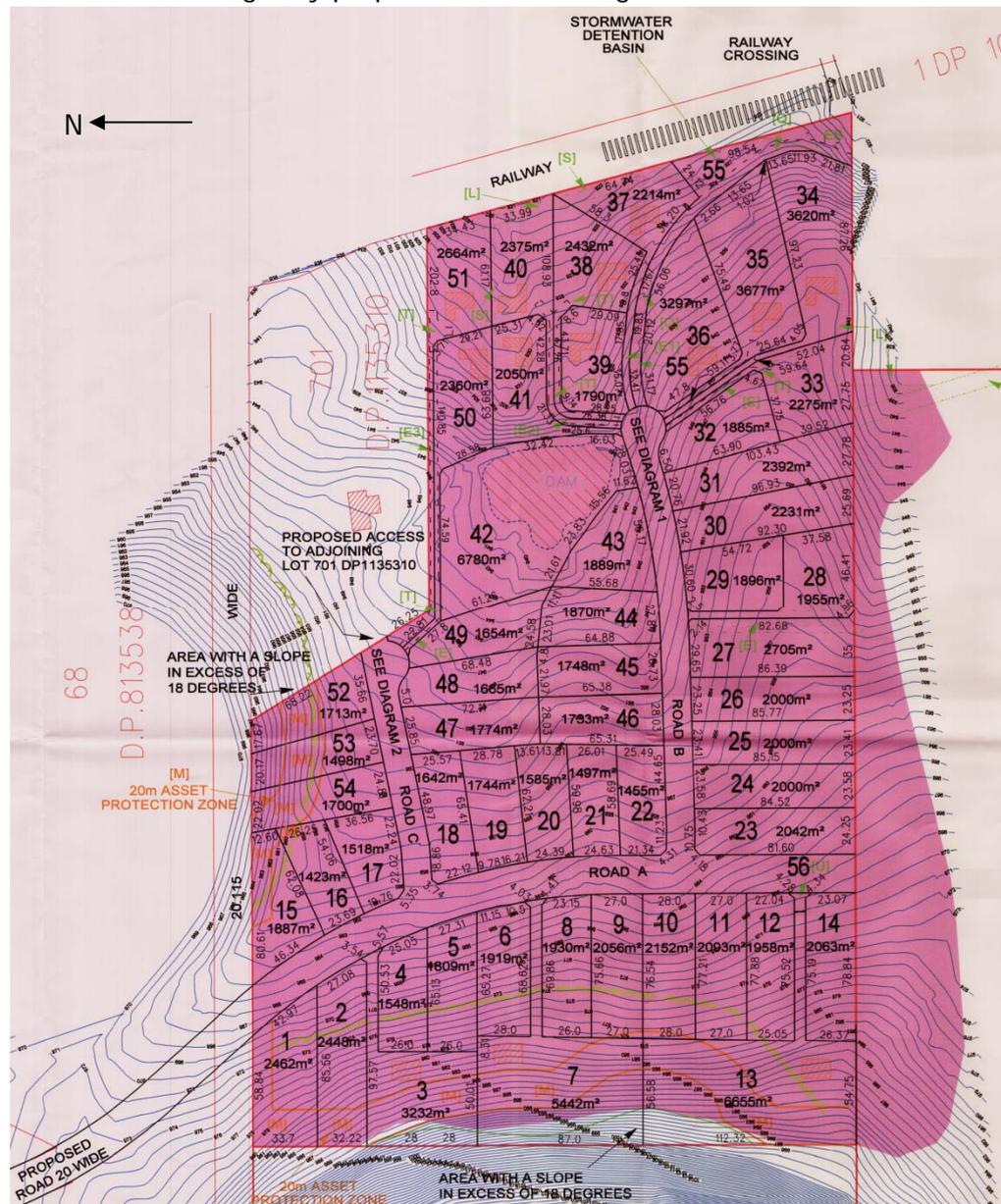
DEVELOPMENT ASSESSMENT REPORT - DA245/13 - PROPOSED SUBDIVISION 1 LOT INTO 61, GREAT WESTERN HIGHWAY BOWENFELS NSW 2790

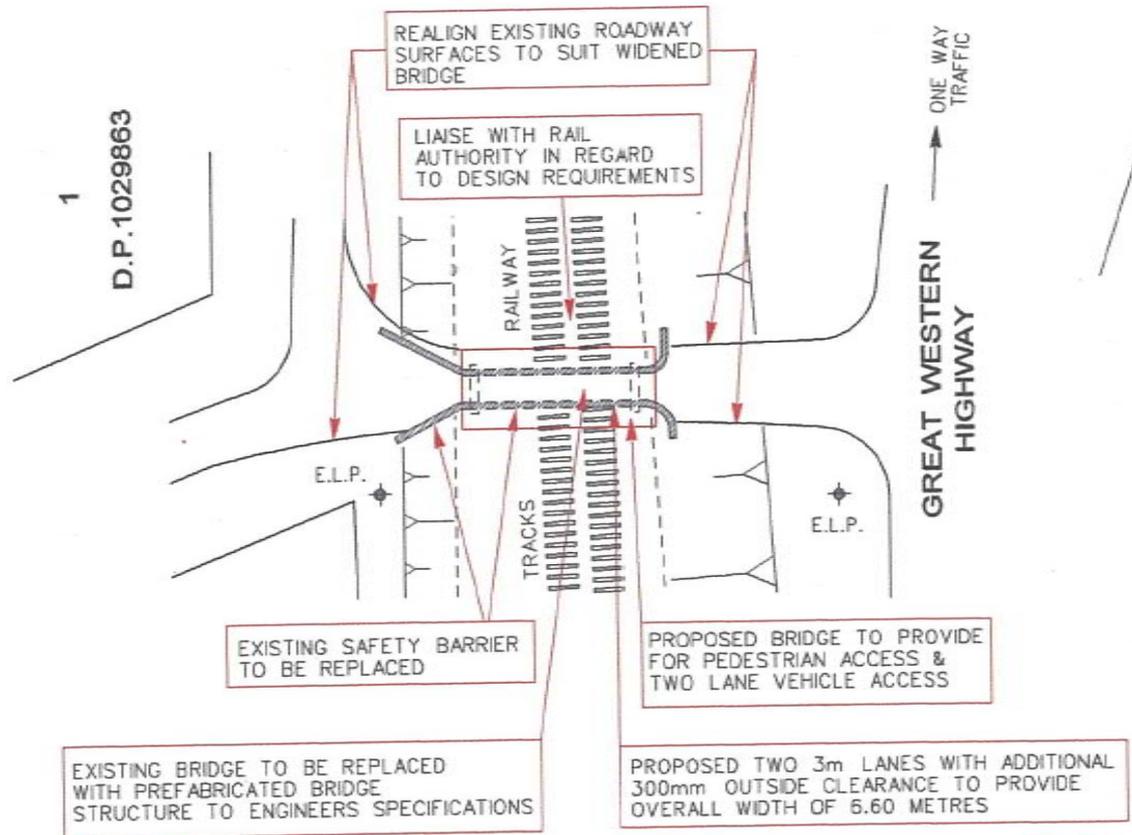
1. PROPOSAL

Council is in receipt of a Development Application DA245/13 from Marrangaroo Estate Pty Ltd for a subdivision of 1 lot into 61 on land known as Lot 702 DP 1135310, Great Western Highway Bowenfels NSW 2790.

Original application

The original application was submitted for a subdivision of 1 lot into 55, which included the replacement of the existing access bridge from Great Western Highway over the Western Railway to Girraween Drive, to a two lane and pedestrian bridge. This included providing alternative access to the existing Marangaroo Estate while the bridge was being constructed. These accesses were either via the level crossing south of the proposal or through Oakey Forest Road north of the proposal. A plan of the subdivision originally proposed and the bridge are shown below:

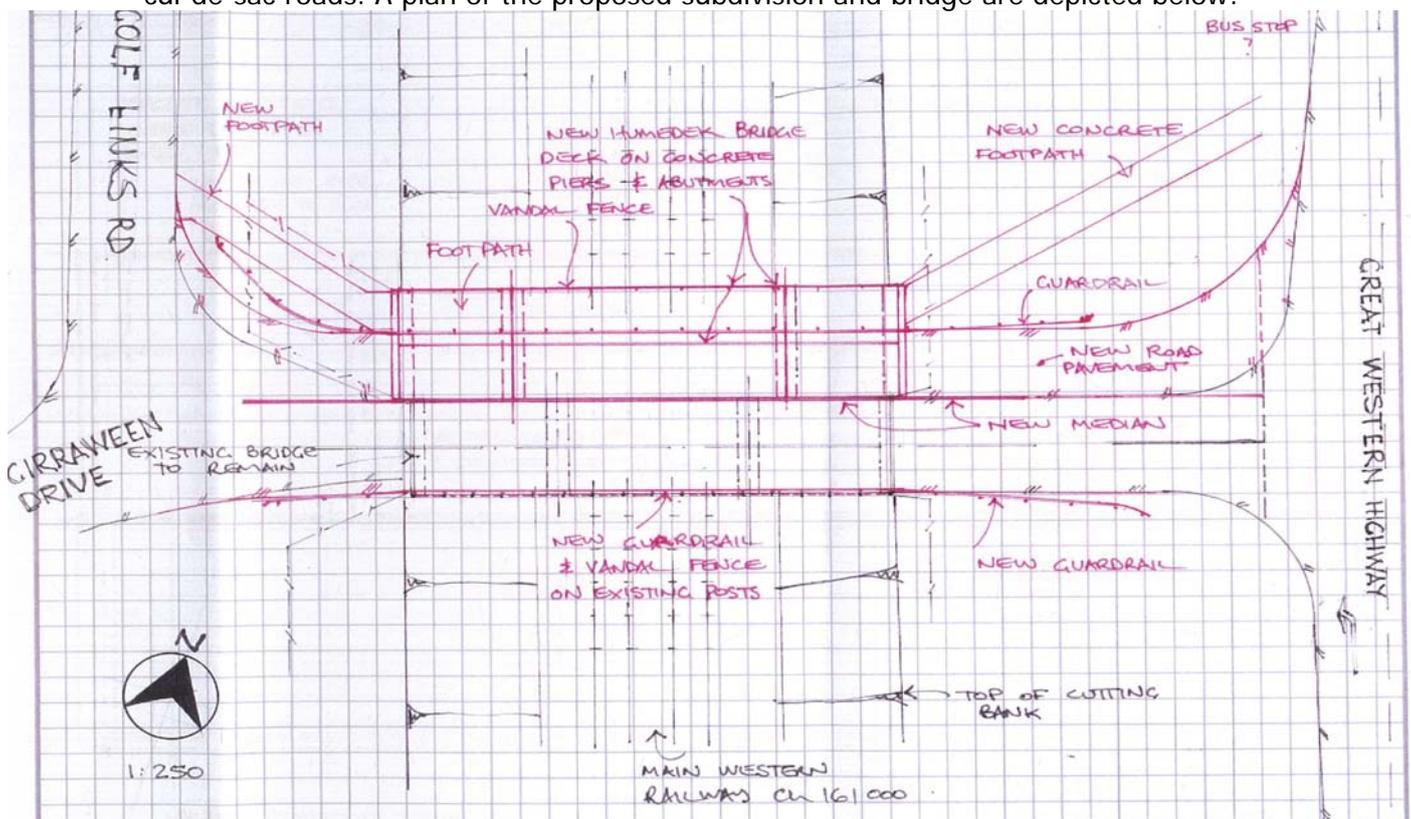


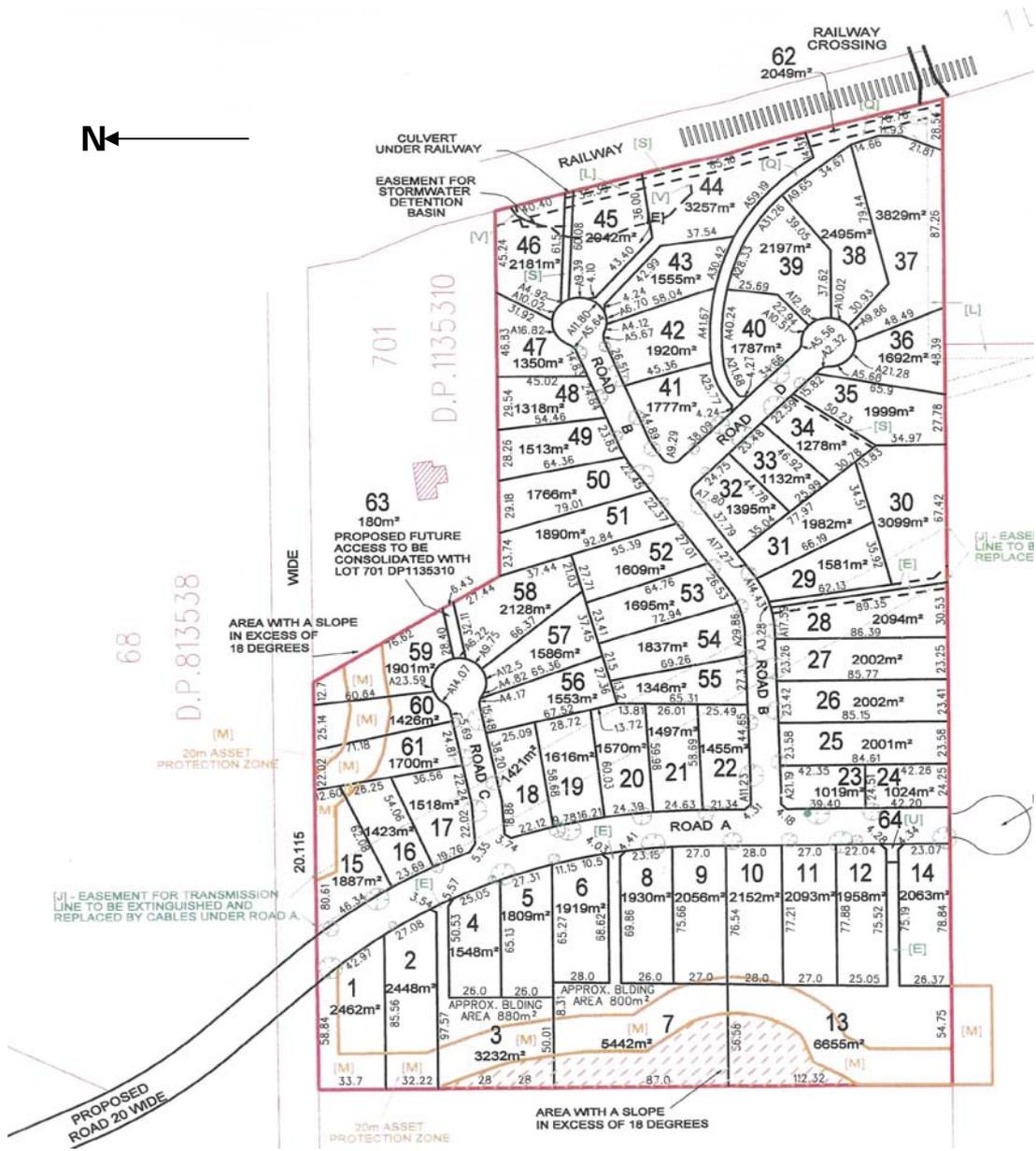


This proposal was then amended by the applicant due to issues with the bridge design and providing alternative access.

Amended Application

The amended proposal, the subject of this application, is for a subdivision of 1 lot into 61 with a proposed twin bridge to be placed next to the existing bridge access from the Great Western Highway over the Western Railway to Girraween Drive. The proposal also includes the extension of Bundarra Place over Council (Lot 68 DP813538) and Crown Lands (reserved road) properties and the creation of three cul-de-sac roads. A plan of the proposed subdivision and bridge are depicted below:





2. SUMMARY

To assess and recommend determination of DA245/13. Recommendation will be for approval subject to conditions.

3. LOCATION OF THE PROPOSAL

Legal Description : Lot 702 DP 1135310, Lot 68 DP 813538
 Property Address : GREAT WESTERN HIGHWAY BOWENFELS NSW 2790

4. ZONING: The land is zoned 2(a) Residential in accordance with Lithgow City Local Environmental Plan 1994.

5. PERMISSIBILITY: The development being a subdivision is considered permissible under Lithgow City Local Environmental Plan 1994 2(a) Residential (with no minimum allotment size), subject to development consent.

5.1 POLICY IMPLICATIONS (OTHER THAN DCP's)

Policy 7.7 -Calling in of Applications by Councillors

This application has been called in pursuant to Policy 7.7 "Calling in of Applications by Councillors" Item 3 that states:

Should written notice, signed by a minimum of one (1) Councillor, be received by the General Manager prior to determination of a development application or development application/construction certificate, the application shall not be determined under delegated authority but shall be:

- *Reported to the next Ordinary Meeting for the information of Council that the development application or development application/construction certificate has been "called in"; and*
- *Reported to an Ordinary Meeting of Council for determination.*

Determination of this application will therefore be by the elected Council.

Policy 1.3- Acquisition and Disposal of Assets

Should the proponent seek to purchase Council land for the purpose of constructing a road land then Policy 1.3 – Acquisition and Disposal of Assets would be applicable. However, this would be the subject of a separate process.

5.2 FINANCIAL IMPLICATIONS (eg Section 94)

PLANNING AGREEMENT

A Voluntary Planning Agreement (VPA) has been negotiated with the developer in relation to this subdivision proposal. The developer has agreed to make a contribution of \$1,700 per new allotment to go toward general community facilities and also an additional \$50,000 to be spent on improvements to the existing park/playground in Girraween Drive. The developer is of the view that a significant contribution is already being made to the community by improving the access situation and under these circumstances is not able to agree to a greater contribution. Whilst the details of the VPA will be separately reported to a future meeting a condition will be incorporated indicating the basic terms.

Water Management Act 2000

Under the Water Management Act 2000-Section 305, an Application for certificate of compliance must be submitted to Council. This Act states:

- (1) A person may apply to a water supply authority for a certificate of compliance for development carried out, or proposed to be carried out, within the water supply authority's area.*
- (2) An application must be accompanied by such information as the regulations may prescribe.*

Therefore Councils Section 64 contributions for water and sewer connections will be required to be paid prior to the release of the Final Subdivision Certificate. The following condition would be included in the conditions of consent:

- An application shall be submitted to Council for the supply of a Certificate of Compliance under Section 305 of the Water Management Act. A Final Occupation Certificate shall not be issued until such time as a Certificate of Compliance has been issued under Section 307 of that Act.

5.3 LEGAL IMPLICATIONS

Conveyancing Act 1919

The proposal if approved will have a restrictive covenant which will not allow the installation of coal burning appliances in the subdivision.

Additionally, the following restrictions/positive covenants have been requested from Water NSW (SCA):

Future Dwellings

- *There shall be a public positive covenant under Section 88E of the Conveyancing Act 1919, the prescribed authority being the Sydney Catchment Authority, placed over all proposed lots requiring that any future dwelling have a rainwater collection and reuse system that includes the following specifications and requirements:*
 - *rainwater tanks with a minimum total capacity of 10,000 litres above any volume required for mains top-up*
 - *roofs and gutters designed so as to maximise the capture of rainwater in the tanks*
 - *the tanks plumbed to toilets, laundry and other areas for non-potable use including use for gardens, and*
 - *rainwater tank overflow directed to a raingarden located on the lot.*

- *There shall be a public positive covenant under Section 88E of the Conveyancing Act 1919, the prescribed authority being the Sydney Catchment Authority, placed over all proposed lots requiring that future dwellings have a raingarden that incorporates the following specifications and requirements:*
 - *be located so as to capture all runoff from the lot including any rainwater tank overflow*
 - *be designed consistent with Chapter 6 of WSUD Engineering Procedures: Stormwater (Melbourne Water 2005) and Adoption Guidelines for Stormwater Biofiltration Systems (FAWB 2009)*
 - *have a minimum surface and filter area of 9 square metres*
 - *have an extended detention depth of 300 mm*
 - *have a filter depth (excluding transition layers) of 600 mm above the underdrain*
 - *have a filter media consisting of a clean sandy loam with a certified median particle diameter of 0.5 mm, a maximum orthophosphate concentration of 40 mg/kg and a maximum total nitrogen concentration of 400 mg/kg*
 - *be planted with appropriate deep-rooted, moisture-tolerant vegetation protected by rock mulch (grass and turf is not appropriate vegetation, and organic mulch is not suitable)*
 - *direct discharge and overflow to the inter-allotment drainage system*
 - *be protected from vehicular or other damage by fences, posts, slotted kerbs or similar permanent structures*
 - *be protected by sediment and erosion control measures during any construction and post-construction phase until the ground surface is revegetated or stabilised, and*
 - *no development take place within one metre of the raingarden once constructed.*

Environmental Protection and Biodiversity Conservation Act 1991

No federally listed Threatened Species or Endangered Ecological Community is required to be cleared as a result of this application. Accordingly, there are no legal implications of this act on the proposed development.

Local Government Act 1993

If this application is approved, the applicant must obtain a written Section 68 approval for connection to Council's water and sewerage supply. This must be lodged and approved prior to commencement of any work on site and shall be at full cost to the applicant.

The Section 68 application requires the submission of all detailed engineering drawings/design, specifications and any applicably supporting information for the proposed works. All conditions of the Section 68 Approval must be complied with prior to the release of the Subdivision Certificate.

Native Vegetation Act 2003

All proposed clearing of native vegetation is mainly for asset protection zones as per the Rural Fires Act. As part of the Arboriculture Report prepared by Meredith Gibbs it stated that 'overall the trees within the proposed asset protection zone are predominantly in poor health and not worthy of retention within an urban setting'. It is therefore considered that there are no legal implications of this act on the proposed development.

Roads Act 1993

The developments main access is from the Great Western Highway controlled by the Roads and Maritime Services and therefore their consent on the proposal was requested. The RMS provided no objection to the proposal subject to conditions of consent being imposed on the access from the highway.

Additionally, there will be new road construction which will be dedicated as public roads once the subdivision is finalised. This process is to comply with the Act and it is therefore considered that the development will be compliant under this Act.

Rural Fires Act 1997

The development is integrated under this Act (via Section 91 of the EP & A Act 1979). Accordingly the approval of the Rural Fire Service (RFS) is required prior to Council being in a position to determine the application. Approval from the RFS has been obtained subject to conditions of consent. It is considered that the development will be undertaken in accordance with this Act.

Threatened Species Conservation Act 1995

No state listed Threatened Species or Endangered Ecological Community is required to be cleared as a result of this application. Accordingly, there are no legal implications of this act on the proposed development.

Water Management Act 2000

A Certificate of Compliance is required under this act prior to the release of any subdivision certificate. See previous comments under "Financial Implications".

Environmental Planning and Assessment Act 1979

In determining a development application, a consent authority is required to take into consideration the matters of relevance under Section 79C of the *Environmental Planning and Assessment Act 1979*. These matters for consideration are as follows:

5.3.1 Any Environmental Planning Instruments

Lithgow City Local Environmental Plan 1994

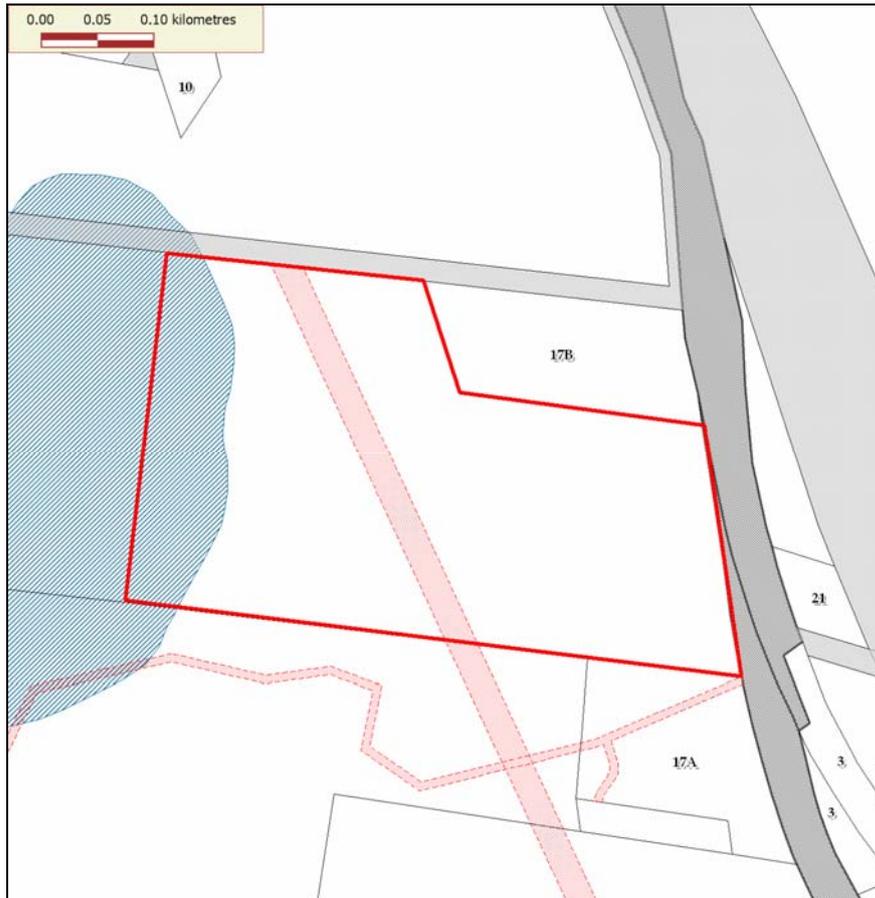
LEP 1994 – Compliance Check		
	Clause	Compliance
9	2(a) zoning table	Yes
21	Notification of certain development and development in Residential and Village Zones	Yes
26	Development along arterial roads	Yes
28	Environmentally sensitive land	Yes
30	Land subject to bushfire hazards	Yes

Comment:

The proposed subdivision meets the objectives of the zone as it allows for a variety of housing that is feasible and will be providing appropriate infrastructure for the increased loads. The proposal was notified to a large area surrounding the development given the increased development of the area with submissions detailed further in this report.

The proposal was also referred to the Roads and Maritime Services for access from an arterial road and the Rural Fire Service for assessment in relation to bushfire risks, with recommendations detailed further in this report.

Part of the land is known as environmentally sensitive as per the below mapping:



Blue hashed area depicts the Environmentally Sensitive zone.

The development is not a restricted development under Clause 28, and the trees to be removed as part of the development are considered young or of poor condition. The soil erosion will be addressed by conditions proposed by Council and Water NSW (Sydney Catchment Authority) and additionally through development of each specific allotment. There will be minimal scenic amenity lost in this area and there is only poor vegetation systems and natural wildlife that will be removed for bushfire risk purposes.

State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011

SEPP(Sydney Drinking Water Catchment) 2011 – Compliance Check		
	Clause	Compliance
10	Development consent cannot be granted unless neutral or beneficial effect on water quality	Yes
11	Development that needs concurrence of the Chief Executive	Yes

Comment: The application was required to be assessed under this SEPP and therefore a referral to Water NSW (Sydney Catchment Authority) was undertaken. Recommendations from Water NSW determined that the application will have a neutral or beneficial effect on water quality subject to conditions of consent being imposed. Therefore the application will meet the requirements of this SEPP.

State Environmental Planning Policy 44 – Koala Habitat Protection

SEPP 44 is applicable to the site given that it exceeds 1ha in size and is located within the Lithgow Local Government Area to which the SEPP applies. Part 2 of the SEPP requires Council to consider whether the land the subject of the application retains potential and subsequently core koala habitat. Many of the trees listed within Schedule 2 of the SEPP are common within the Lithgow Local Government area, however core koala habitat within this area is rare, with only 12 koala sightings ever reported on private land within the LGA. The nearest sighting to the subject site is over 5kms away.

It is considered that the area is not classed as critical habitat for koala under this SEPP and all clearing of native vegetation is mainly for asset protection zones as per the Rural Fires Act. As part of the Arboriculture Report prepared by Meredith Gibbs it stated that 'overall the trees within the proposed asset protection zone are predominantly in poor health and not worthy of retention within an urban setting'. Therefore it is unnecessary to proceed further with SEPP 44 assessment.

State Environmental Planning Policy (Infrastructure) 2007

SEPP (Infrastructure) 2007 – Compliance Check	
Clause	Compliance
13 Consultation with Councils- development with impacts on council-related infrastructure or services	Yes
85 Development immediately adjacent to rail corridors	Yes
86 Excavation in, above or adjacent to rail corridors	Yes
87 Impact of rail noise or vibration on non-rail development	Yes

Comment: Consultation with Council has been undertaken for the proposed development through the submission of the application in relation to impacts on existing infrastructure. It is considered that upgrades to sewer and water may be required given the infrastructure will be transferred to Council after subdivision certificate release. The stormwater design will also be adequate, so not to impact on existing services.

Some development will be immediately adjacent to the rail corridor as well and excavation in and above the existing rail corridor. This required referral to the rail authority being John Holland Rail, with recommendations provided for all works as part of the subdivision. However the comments provided only referenced the rail corridor work in relation to the new bridge construction and no other work. Therefore the following condition will be applied which has been previously imposed to comply with this SEPP:

- That secure fencing along the rail corridor to prevent unauthorised entry to the rail corridor is required. This may be in the form of a 1.8m chain wire fence or similar to prevent access to the rail corridor.

Any future development of the site including dwellings will need to consider Clause 87 of the SEPP in relation to ensuring the LAeq levels are not exceeded as below:

- in any bedroom in the building – 35dB(A) at any time between 10pm and 7am*
- anywhere else in the building (other than a garage, kitchen, bathroom or hallway)- 40dB(A) at any time.*

All road infrastructures will be to Council requirements given the road will be transferred to Council as the road authority. This work will require approval and a Construction Certificate to ensure works are carried out satisfactorily.

Clause 100 of the SEPP requires the RMS concurrence given the development is a subdivision over 50 lots as per Schedule 3 as it accesses off a road that connects to a classified road. The RMS has consented to the application subject to conditions of consent.

It is considered that with the concurrence of John Holland Rail Pty Ltd and Roads and Maritime Services, the development meets the requirements of the SEPP with conditions of consent as imposed.

5.3.2 Any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority

Draft Lithgow City Local Environmental Plan 2013 (Draft LEP 2013) was a draft at the time of lodgement of the application and therefore LEP 1994 is still the applicable LEP for which this development will be determined.

However, consideration to the now gazetted Draft LEP 2013 (Lithgow Local Environmental Plan 2014) is still to be assessed as part of this proposal and is discussed below:

The zoning under the LEP2014 is R2 Low Density Residential with a minimum lot size of 2000m². The development is proposed to provide for the housing needs of the community and will maintain the water quality of receiving water catchments which complies with the objectives of the zone. The proposal will have allotments ranging from 1019m² to 6655m² with majority of the allotments under 2000m². However all allotments will have adequate services and meet the requirements of the zone.

The property is also known to be of high biodiversity, sensitive land and comprising of groundwater vulnerability as per LEP 2014 mapping. However assessments undertaken as per LEP1994 and with authority concurrence found the proposal to be appropriate with conditions of consent.

5.3.3 Any Development Control Plan

Marrangaroo DCP

Marrangaroo DCP – Compliance Check		
Part B	Clause	Compliance
3	Subdivision design constraints & objectives	Yes
	Lot Design Standards MLS 2000m ² average 3000m ²	No
	Utility Service, roads	Yes

Comment:

This Development Control Plan does not apply to the subject area for this subdivision. However, a comparison of the proposal has been undertaken to provide a contrast with the large lot residential type setting already existing in that area.

The average lot size is 1983m² with a max lot size of 6655m² and a minimum of 1019m² which does not meet the Lot Design Standards set by the DCP. However, it is considered that the proposal will provide adequately sized allotments for a larger type residential development of the area.

All lots will have adequate water, sewer, drainage, electricity, telephone, natural gas, roads and street lighting services through conditions of consent. These provisions are to be in place prior to the subdivision certificate release. It is considered that overall the development will be similar to the existing residential area, but with a higher road standard due to the lay of the land.

The proposal may be subject to private covenant controlling the style of development for this subdivision; however this will be up to the developer and market demands.

5.3.4 Any planning agreement that has been entered into under Section 93F, or any draft planning agreement that a developer has offered to enter into under Section 93F?

PLANNING AGREEMENT

A Voluntary Planning Agreement (VPA) has been negotiated with the developer in relation to this subdivision proposal. The developer has agreed to make a contribution of \$1,700 per new allotment to go toward general community facilities and also an additional \$50,000 to be spent on improvements to the existing park/playground in Girraween Drive. The developer is of the view that a significant contribution is already being made to the community by improving the access situation and under these circumstances is not able to agree to a greater contribution. Whilst the details of the VPA will be separately reported to a future meeting a condition will be incorporated indicating the basic terms.

5.3.5 Any matters prescribed by the regulations that apply to the land

The development has been assessed in relation to the appropriate regulations and is reflected within this report.

5.3.6 The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality

Adjoining Landuse: The adjoining land uses include rural and residential developments. The location of the proposal although within an existing rural use site, is in close proximity to residential developments such as Marrangaroo Estate. The site will be intensified compared to current land use (being grazing), however the land is appropriately zoned and with proposed conditions of consent will be designed and implemented in a way that will minimise impact on the existing adjoining land uses. These conditions cover stormwater design, sewer & water services, road access, construction times, security, dust and sedimentation controls etc. The development will be subject to subsequent approval processes to ensure ongoing compliance, such as Section 68 approvals, Construction Certificates and the final Subdivision Certificate release.

Sewer:

The development will require connections to Council's reticulated sewer system, with conditions of consent proposed outlining the design specifications to ensure adequate provisions. Additionally given the further loading of the existing Farmer Creek Pumping Station, an upgrade will be essential as per NSW Water and Council requirements. This will allow for the future development of the site with minimal impact to existing services. All work will be subject to further design and calculation through the Section 68 process.

It is considered that with the conditions of consent imposed the development will have adequate sewerage services for a residential area.

Water:

Council engineers have reviewed the development in relation to water services and consider that with appropriate conditions of consent on the design there will be no impact on water pressure within the area. The development will as a result have adequate water services required for a residential development. This may include upgrades of existing services through the Section 68 process.

It is expected there will be minimal impacts on the natural water springs. Geotechnical reports will be prepared for any excavation works for services and/or road constructions to ensure minimal impact on natural springs of ground water.

The kerb and guttering will address the existing issue of pooling at Bundarra Place with the upgrades proposed. The road design and surface water drainage has been assessed and can be adequately addressed through the design and conditions of consent.

The stormwater quality and design has been assessed by Water NSW (SCA) and Council engineers and found to be adequate subject to conditions of consent being imposed. The stormwater detention basin will have an Owners Operating Environmental Management Plan that is the responsibility of owners and will be in the title of the land. A retention basin is required to filter all sedimentation out of the stormwater overflow prior to it being distributed into Council's stormwater systems and is a requirement for neutral or beneficial water quality by Water NSW. It is considered that all stormwater will be adequately controlled within the development and to Council's stormwater systems.

The existing dam is to be drained and filled to provide an area for development of the subdivision. Any fill proposed to be brought to sight will need to be tested for contamination prior to being brought to the site. This will be condition of consent.

Electricity, telecommunications and gas:

The site will have connections to electricity, telecommunications and natural gas as per proposed conditions of consent. Additionally, the existing services that run through the allotment will be moved and relocated to a more appropriate location. This is to be approved and monitored by the service authority responsible for those provisions. This includes telecommunications (optic fibre lines and telephone) and electricity provisions.

This will be covered by the implementation of the following conditions of consent:

- If the development is likely to disturb or impact upon telecommunications or electricity infrastructure, written confirmation from the service provider that they have agreed to the proposed works must be submitted to the Principal Certifying Authority prior to the issue of a Construction Certificate or any works commencing, whichever occurs first; and
- The arrangements and costs associated with any adjustment to telecommunications or electricity infrastructure as per above shall be borne in full by the applicant/developer.

Amenity:

The development is for a 61 lot subdivision in an existing rural and residential area and it is therefore considered that a condition to request an 88B restrictive covenant that prohibits the use of coal burning appliances is required. This will reduce any potential air pollution impact to the area. However, wood fired appliances will be dealt with on a case by case basis and not be restricted completely.

The subdivision is proposed within an appropriately zoned area for residential purposes. Fencing, landscaping and general development of the site, including street lighting and trees will minimise the overall impact of the development. In relation to privacy this should not be compromised as it is a development for residential purposes next to existing residential and rural uses.

The existing subdivision of Marrangaroo Estate is of residential nature with some rural attributes and it is considered that the proposed residential subdivision will be a compatible use in the area.

The amenity of the area, although changed is not expected to be detrimental with lighting and noise only attributed to residential uses.

Bridge:

The bridge is to be constructed first as agreed and will be designed for the largest class of vehicle as a requirement by the RMS. This will minimise any potential traffic issues or safety concerns as it improves the existing situation.

The bridge will be improved compared to the existing one way bridge as it will allow entry and exit simultaneously. Council has requested that no tonnage limit be placed on the bridge as it should be designed for the largest class of vehicle. This is to be controlled and designed as part of the Construction Certificate in consultation with the RMS and JHR.

Access, Transport and Traffic:

In relation to traffic the developer will be constructing an addition to the bridge making it a two lane bridge including pedestrian walkway. The turning lanes from the highway will be designed to the Roads and Maritime Services requirements for the largest class of vehicle, with the RMS providing comments on the entire proposal. There will be no closure of the bridge with the access over the existing bridge to be provided at all times with minimal disturbance to residents of the area or patrons to the golf club. The development has been referred to RMS and John Holland Rail Pty Ltd who did not object to the proposal subject to conditions of consent being imposed.

It will be a condition of consent that the bridge be constructed and completed (signed off by Council, RMS and John Holland Rail) prior to any other subdivision works commencing. This will ensure that ongoing access to the area is maintained and that minimal impact is experienced by the community. The original proposal for alternative access was not considered suitable, as it was not supported by Council or RMS. Therefore, this existing access will be fenced and not used other than for emergency services.

The existing road surfaces of Girraween Drive and Bundarra Place are being upgraded in the near future by Council and will meet the requirements for the new subdivision. This will include some stormwater improvements and resealing up to the new construction areas. Council's engineers have assessed the existing traffic arrangements of Bundarra Place and Girraween Drive and consider that some upgrades are required. However, kerb and gutter improvements will be required from the developer.

The existing Right of Carriageway (ROW) used by Lot 701 DP1135310 is to be maintained until an alternative arrangement can be provided to the landowners utilizing this ROW. This ensures that the lot will not have its access compromised during construction and development of the site.

Pedestrian access

Council cannot require the developer to provide footpaths in an area that is not part of the new development. However, footpaths will be required by condition of consent for the new subdivision with linkages to the bridge and the existing playground area within the Marrangaroo Estate. A pedestrian access will be provided in the design of the new bridge section. It is considered that this will improve the existing area and allow for a better pedestrian design.

Soils:

Dust, erosion and sedimentation controls and mitigation will be done as required through conditions of consent and will minimise any potential issues. There is no reason to believe the site would be affected by acid sulphate soil or contamination problem. Any fill to be brought to site will be tested prior to use onsite to reduce risk of contamination.

Flora and Fauna:

Majority of the property is devoid of native vegetation with scrub and forest type vegetation on the north and western edges. It is considered that there will be minimal impacts as part of the subdivision on native wildlife as the area has minimal wildlife to lose. The trees to be removed are of poor quality being scattered from the forests and young saplings. It is considered that the development will have minimal impact on flora and fauna.

Natural Hazards:

The land is known to be bushfire prone, with the RFS providing concurrence on the development. It is considered that the natural hazard of bushfire risk will be minimised through conditions of consent.

Noise and Vibration:

The property shares a boundary with the Western Railway Line which has the potential to cause vibration and noise to the proposed residential development. The construction will be monitored by JHR and any future development of the site including dwellings will need to consider Clause 87 of the SEPP in relation to ensuring the LAeq levels are not exceeded as below:

- c) in any bedroom in the building – 35dB(A) at any time between 10pm and 7am*
- d) anywhere else in the building (other than a garage, kitchen, bathroom or hallway)- 40dB(A) at any time.*

Streetscape:

The proposal is for a new residential estate with no existing streetscape in the locality. It is considered that lighting and tree planting along streets will help design and improved residential estate to provide an improved streetscape designs.

5.3.7 The Suitability of the site for the development

The land is currently zoned for residential purposes and therefore is strategically suitable to allow increased housing demands within the Lithgow area. The larger allotment sizes are only available further out of Lithgow CBD and this development is still within close proximity, allowing for condensed development to the city hub. The land was recently reviewed as part of the LEP 2014 process and found that it would be suitable for future residential allotments and was appropriately zoned.

The upgrade of the bridge and other utilities will allow for appropriate development of the site to a standard that is acceptable for residential uses close to the Lithgow township. Given the development is compatible with the zone it is considered that the site is suitable for the proposal.

5.3.8 Any submissions made in accordance with this Act or the Regulations

The proposal was sent to the Rural Fire Service (RFS), The Sydney Catchment Authority (SCA), John Holland Rail (JHR), NSW Trade & Investment- Crown Lands, Rural Fire Services (RFS), Roads and Maritime Services (RMS), Council's Engineers and, Council's Water & Wastewater Officer for commenting with recommendations detailed below:

Sydney Catchment Authority

The following documents have been considered in the assessment of the application:

- a Statement of Environmental Effects (dated October 2013) and Correspondence to Council (dated 12 June 2014) both prepared by Ingham Planning Pty Ltd
- Proposed General Arrangement Layout Plan and DA Drawings (dated 6 June and 18 July 2014) and MUSIC Model Assessment Report and associated MUSIC stormwater quality model (dated 18 July 2014) all prepared by LandTeam Australia Pty Ltd, and
- Correspondence to Council from Marrangaroo Estate Pty Ltd (dated 28 October 2014).

The SCA has undertaken a number of inspections of the subdivision site and reviewed the application documents and has the following concerns and comments:

- The SCA notes that the proposed subdivision layout involves cross over of sewerage and stormwater management systems. The SCA considers that the detailed subdivision design layout should avoid the cross over of sewerage and stormwater management systems.
- The SCA considers that Council shall ensure that the existing sewage pump station has adequate capacity to handle wastewater loads from the development. The sewage pump station shall have a minimum emergency storage volume equivalent to at least 3 hours peak wet weather flow and shall include a permanent standby pump to ensure continuity of operation in the event of pump failure. A power generator shall be hired in the event of power failure.
- The Statement of Environmental Effects and Concept Stormwater Drainage Plan specify swale drains and one-way crossfall on the accessway and driveways. This is inconsistent with the cross sections provided for the accessways. This needs to be addressed in the detailed design of the stormwater management for the subdivision which may require updating the MUSIC stormwater quality model to reflect any changes in regards to the location, length and low points of swales and on-site detention basin.
- The SCA considers that the subdivision site has a potential high risk to erosion. The Soil and Water Management Plans have not been developed in accordance with the Landcom (2004) Managing Urban Stormwater: Soils and Construction, in particular the sizing of the construction stage sediment basin/s. Detailed construction stage Soil and Water Management Plans should be provided to the SCA for review and comment prior to the issuance of the Construction Certificate and should include:
 - specific measures for works undertaken within the natural drainage line, and
 - specific measures for filling of the existing dam.

Based on the SCA's site inspection and the information provided, the proposed development has been assessed by the SCA as being able to achieve a neutral or beneficial effect on water quality provided appropriate conditions are included in any development consent and are subsequently implemented.

The Chief Executive would therefore concur with Council granting consent to the application, subject to the following conditions:

General

1. The lot layout of the subdivision shall be as shown on the Proposed General Arrangement Layout Plan prepared by LandTeam Australia Pty Ltd (Dwg No. 206152 DA01, Rev. B; dated 18 July 2014). No revised lot layout or staging of the subdivision that will impact on water quality shall be permitted without the agreement of the Sydney Catchment Authority.

Reason for Condition 1 - The Sydney Catchment Authority has based its assessment under State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 on this version of the subdivision.

Wastewater Management

2. There shall be no on-site wastewater management system on any of the proposed lots and all lots shall be connected to Council's sewerage system.

Reason for Conditions 2 - To ensure that all wastewater generated on each lot is disposed of and treated via Council's sewerage system so as to ensure a sustainable neutral or beneficial effect on water quality over the longer term.

Sewage Pump Station and Sewer Main

3. The sewer main serving the subdivision shall be designed and installed to ensure it has sufficient hydraulic capacity to accommodate wastewater load generated by the subdivision.
4. Detailed design of the subdivision shall address the risks of overflows from the proposed sewer main servicing the subdivision in the event of pump failure or blockage downstream. Mitigation strategies shall be put in place to minimise any overflows or discharges to stormwater treatment devices on the site including to the proposed on-site detention basin.

Reason for Conditions 3 & 4 – To ensure that the design and operation of the sewerage infrastructure is undertaken in a way that minimises the risk of sewage overflows so as to ensure a sustainable neutral or beneficial effect on water quality over the longer term.

Subdivision Roads and Access Ways

5. The subdivision roads and access ways shall be located and constructed as shown on the Proposed General Arrangement Layout Plan prepared by LandTeam Australia Pty Ltd (Dwg No. 206152 DA01, Rev. B; dated 18 July 2014), but with the following specifications and requirements:
 - be sealed and otherwise constructed in accordance with Council's engineering standards
 - incorporate a two-way crossfall, as appropriate, with runoff to be collected via a series of pits and pipes and directed to various water quality treatment measures detailed in the following conditions, and
 - incorporate inlet filters (Enviropod 200 or Sydney Catchment Authority approved equivalent) on all inlet pits.
6. All stormwater structures and drainage works associated with the proposed subdivision roads shall be wholly included in the road or drainage reserve or within suitably defined easements.

Reason for Conditions 5 & 6 – To ensure that the proposed subdivision roads and associated infrastructure will have a sustainable neutral or beneficial impact on water quality during the operational phase of the development.

Stormwater Management

7. All stormwater management measures as specified in the MUSIC Model Assessment Report (dated 18 July 2014) and Concept Drainage Plan (Dwg. No. 206152 DA24, Rev A; dated 6 June 2014.) all prepared by LandTeam Australia Pty Ltd, shall be implemented, in particular as elaborated or varied in the following conditions.
8. Detailed Stormwater Management Plans for the subdivision shall be submitted to the Sydney Catchment Authority for review and comments prior to the issuance of the Construction Certificate.

9. All stormwater quality management measures shall be inspected and certified by a consultant approved by the Sydney Catchment Authority, as having been constructed or undertaken as specified in these conditions.
10. An Operational Environmental Management Plan (OEMP) shall be prepared in consultation with the Sydney Catchment Authority by a person with knowledge and experience in the preparation of such plans. The OEMP shall be prepared prior to the issuance of a Subdivision Certificate of the subdivision. The OEMP shall include but not be limited to:
 - details on the location and nature of stormwater management structures such as pits, pipes, inlet filters, gross pollutant traps, swales, on-site detention basin, and any other stormwater structures and drainage works
 - an identification of the responsibilities and detailed requirements for the inspection, monitoring and maintenance of all stormwater management structures, including the frequency of such activities
 - the identification of the individuals or positions responsible for inspection and maintenance activities including a reporting protocol and hierarchy, and
 - checklists for recording inspections and maintenance activities.
11. No variation to stormwater treatment or management that will impact on water quality shall be permitted without agreement of the Sydney Catchment Authority.

Reason for Conditions 7 to 11 – To ensure that the stormwater quality management measures and structures for the proposed subdivision have a sustainable neutral or beneficial impact on water quality over the longer term.

Future Dwellings

12. There shall be a public positive covenant under Section 88E of the *Conveyancing Act 1919*, the prescribed authority being the Sydney Catchment Authority, placed over all proposed lots requiring that any future dwelling have a rainwater collection and reuse system that includes the following specifications and requirements:
 - rainwater tanks with a minimum total capacity of 10,000 litres above any volume required for mains top-up
 - roofs and gutters designed so as to maximise the capture of rainwater in the tanks
 - the tanks plumbed to toilets, laundry and other areas for non-potable use including use for gardens, and
 - rainwater tank overflow directed to a raingarden located on the lot.
13. There shall be a public positive covenant under Section 88E of the *Conveyancing Act 1919*, the prescribed authority being the Sydney Catchment Authority, placed over all proposed lots requiring that future dwellings have a raingarden that incorporates the following specifications and requirements:
 - be located so as to capture all runoff from the lot including any rainwater tank overflow
 - be designed consistent with Chapter 6 of WSUD Engineering Procedures: Stormwater (Melbourne Water 2005) and Adoption Guidelines for Stormwater Biofiltration Systems (FAWB 2009)
 - have a minimum surface and filter area of 9 square metres
 - have an extended detention depth of 300 mm

- have a filter depth (excluding transition layers) of 600 mm above the underdrain
- have a filter media consisting of a clean sandy loam with a certified median particle diameter of 0.5 mm, a maximum orthophosphate concentration of 40 mg/kg and a maximum total nitrogen concentration of 400 mg/kg
- be planted with appropriate deep-rooted, moisture-tolerant vegetation protected by rock mulch (grass and turf is not appropriate vegetation, and organic mulch is not suitable)
- direct discharge and overflow to the inter-allotment drainage system
- be protected from vehicular or other damage by fences, posts, slotted kerbs or similar permanent structures
- be protected by sediment and erosion control measures during any construction and post-construction phase until the ground surface is revegetated or stabilised, and
- no development take place within one metre of the raingarden once constructed.

14. An owner's Operational Environmental Management Plan, detailing the location and nature of the each lot's stormwater collection, reuse and treatment system, including gutters, rainwater tanks and raingarden shall be developed in consultation with the Sydney Catchment Authority and provided to each future owner of the lot.

Reason for Conditions 11 to 14 - To ensure stormwater runoff from the future dwellings and associated infrastructure is appropriately managed and maintained so as to ensure an overall and sustainable neutral or beneficial impact on water quality over the longer term.

Other

15. Conditions 3 to 10 and 14 above shall be carried out prior to the issuance of the Subdivision Certificate.

Reason for Condition 15 – To ensure there is an overall and sustainable neutral or beneficial impact on water quality during all stages of the proposed development.

Construction Activities

16. The Soil and Water Management Plans prepared by LandTeam Australia Pty Ltd (Dwg. No. 206152 DA22 and DA23, Rev A; dated 6 June 2014.) shall be updated by a person with knowledge and experience in the preparation of such plans for all works proposed or required including for the filling of the existing dam and works in the natural drainage lines. The Plans shall meet the requirements outlined in Chapter 2 of NSW Landcom's Soils and Construction: Managing Urban Stormwater (2004) manual - the "Blue Book" and shall be developed in consultation with the Sydney Catchment Authority **prior** to the issuance of a construction certificate.
17. Effective erosion and sediment controls shall be installed prior to any construction activity including site access, and shall prevent sediment or polluted water leaving the site or entering any stormwater drain or natural drainage system. The controls shall be regularly maintained and retained until works have been completed and ground surface stabilised or groundcover re-established.

Reason for Conditions 16 & 17 – To manage adverse environmental and water quality impacts during the construction phase of the development so as to minimise the risk of erosion, sedimentation and pollution within or from the site during this phase.

Subsequent Development Applications

Any subsequent applications for dwellings and/or other developments on the proposed lots will be subject to the provisions of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (the SEPP) and will need to be assessed according to the Neutral or Beneficial Effect (NorBE) test in relation to the potential effect of the development on water quality.

Rural Fire Service (RFS).

This response is to be deemed a bush fire safety authority as required under section 100B of the 'Rural Fires Act 1997' and is issued subject to the following numbered conditions:

Asset Protection Zones

The intent of measures is to provide sufficient space and maintain reduced fuel loads so as to ensure radiant heat levels of buildings are below critical limits and to prevent direct flame contact with a building. To achieve this, the following conditions shall apply:

1. At the issue of subdivision certificate and in perpetuity the entire property, excluding land greater than 18 degrees, shall be managed as an inner protection area (IPA) as outlined within Appendices 2 & 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.
2. A temporary 20 metre wide easement shall be provided adjoining the southern boundary of proposed Lot 14. The easement shall be managed as an APZ and can be removed when the adjoining lot is re-developed.

Water and Utilities

The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply:

3. Water, electricity and gas supplies shall comply with section 4.1.3 of 'Planning for Bush Fire Protection 2006'.

Access

The intent of measures for public roads is to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area. To achieve this, the following conditions shall apply:

4. The public road access shall comply with section 4.1.3 (1) of 'Planning for Bush Fire Protection 2006', except that a through road is not required at this stage.

5. Dead end roads shall incorporate a 12 metre outer radius turning circle and be clearly signposted as a dead end.

The intent of measures for property access is to provide safe access to/from the public road system for fire fighters providing property protection during a bush fire and for occupants faced with evacuation. To achieve this, the following conditions shall apply:

6. Battle axe handles shall be a minimum 6 metres wide to enable property access roads to comply with section 4.1.3 (2) of 'Planning for Bush Fire Protection 2006'.

John Holland Rail (JHR)

Please see the below response to Lithgow City Council's ("**Council**") letter received 5 November 2014 which summarises the conditions applied by John Holland Rail Country Regional Network and Transport for NSW for proposed development DA245/13 by Marangaroo Estate Pty Ltd (the "**Applicant**").

It is our understanding that Council has received an Approval in Principle letter from Heinz Beckers (representative of the Applicant) through unofficial correspondence that provides the conditions of consent.

I refer to the Applicant's application seeking Approval in Principle only for the above works on the operational rail corridor at Marrangaroo NSW. John Holland Rail Country Regional Network advise that as the Managing Agent for the Asset Owner Transport for NSW, endorse the Applicant's proposal, subject to the following conditions:

- i. The Applicant providing the final design, works methodology and safety documentation (to include the SWMS, competency certificates and protection officer details) for approval by John Holland Rail Country Regional Network and Transport for NSW;
- ii. Design and installation works complying to relevant Country Regional Network and Australian standards;
- iii. As-built data is to be provided to John Holland Rail Country Regional Network on completion of the works;
- iv. The Applicant to appropriately dispose of any soil removed during the boring process to a licensed facility (the soil is to be treated as 'industrial level' contaminated);
- v. Evidence of the Applicant and Council's public liability insurance (\$250 million) and professional indemnity insurance (\$20 million) with both John Holland Rail Pty Ltd and Transport for NSW named on the respective policies (as jointly insured). The Applicant's insurances to cover construction and defect liability periods and Council's insurances to cover the asset after the cessation of the defect liability period (as the end owner of the asset).
- vi. Council to enter into an Infrastructure Licence for ongoing ownership and maintenance of the asset;

- vii. The Road-Rail Interface Agreement with Council to be amended upon completion of construction;
- viii. Applicant to provide a Bank Guarantee to the value of the works;
- ix. The existing bridge is assessed for any possible heritage impacts;
- x. The new bridge should provide similar or improved load carrying capacity than the current;
- xi. The works shall not adversely impact maintenance accessibility;
- xii. An Environmental Impact Assessment (including community) to be undertaken before construction approval is granted;
- xiii. The design documentations (i.e. design drawings and reports) at its advance stages (i.e. 30%, 80%, 100% and for construction approval) shall be submitted for John Holland Rail Country Regional Network review and the applicant shall address whatever comments/queries.

No works are to commence in the corridor until John Holland Rail Country Regional Network has received and accepted information detailed at (i) to (xiii) and an additional agreement has been executed.

John Holland Rail Country Regional Network note to Council that the Applicant is also required to pay additional fees to John Holland Rail Country Regional Network for the assessment and processing of the Construction Application.

NSW Trade & Investment- Crown Lands

On the above subject, at a minimum this Office's response regarding the Crown road reserve intersection between Lot 68 DP813538 and Lot 702 DP1135310 is that the part of the Crown road reserve that will intersect with the proposed road construction must be transferred to Council.

I would like Council to also consider another option, transfer of all the Crown road south and east of Lot 68 DP 813538 to Council. As Lot 68 DP 813538 is considered/classed by Lithgow City Council under the Local Government Act as 'operational land', I think this option would provide a significant boost to the degrees of freedom for the future use of this land.

Comment: The following conditions have been formulated in response to the above comments:

- Regarding the Crown road reserve intersection between Lot 68 DP813538 and Lot 702 DP1135310, the part of the Crown road reserve that will intersect with the proposed road construction must be transferred to Council.
- The transfer of the Crown Road to Council will be at full cost of the applicant prior to Subdivision Certificate Release.

Roads and Maritime Services (RMS)

I refer to your letter received on 25 June 2014, forwarding additional information to Roads and Maritime Services in support of the above-mentioned development. Reference is also made to Roads and Maritime's submission to Council dated 21 July 2014, Roads and Maritime's letter to Mr Heinz Beckers dated 3 November 2014, and an email from Mr Heinz Beckers to Roads and Maritime on 4 November 2014.

The applicant has had further discussions with Roads and Maritime. As requested of the applicant Roads and Maritime grants concurrence to the proposed development pursuant to Section 138 of the Roads Act 1993, subject to the following conditions:

- The two lane bridge shall be designed and constructed in accordance with *Australia Standard AS 5100 Bridge Design*;
- Prior to the release of the Construction Certificate, the proponent shall submit information to Council and Roads and Maritime to confirm that:
 - The design of the proposed two lane bridge is adequate to accommodate the largest class of vehicle as described by the *Austrroads Vehicle Classification System*, and the maximum load that the bridge will need to carry.
 - The minimum clear zone requirements provided in the *Austrroads Guide to Road Design* and *Roads and Maritime Supplements*, for both the Great Western Highway and Girraween Drive will be achieved. This requires all non-frangible structures including utility poles to be located and relocated if necessary outside of the clear zones.
- Prior to opening of the two lane bridge to traffic, the intersection of Girraween Drive and the Great Western Highway shall be upgraded in accordance with *Austrroads Guide to Road Design* and any relevant *Roads and Maritime Supplement* to accommodate the largest class of vehicle that will access the bridge from the Great Western Highway, and without crossing the centreline of Girraween Drive. The largest class of vehicle turning left out of Girraween Drive must be able to do without crossing the centre line of Girraween Drive and the broken line between the slow and high speed westbound lanes of the Great Western Highway.
- As roads works are required on a State road, the developer will be required to enter into a Works Authorisation Deed (WAD) with Roads and maritime prior to the commencement of road works at the intersection of Girraween Drive and Great Western Highway.
- Prior to the commencement of construction works, the proponent shall contact Roads and Maritime's traffic Operations Coordinator to determine if a Road Occupancy Licence (ROL) is required. In the event that an ROL is required, the proponent shall obtain the ROL prior to works commencing within three (3) meters of the travel lanes in the Great Western Highway.

Prior to granting concurrence, Roads and Maritime would have preferred that the applicant provide plans demonstrating that our requirements for the intersection would be met. However, the applicant has expressed a strong desire for Roads and Maritime to grant concurrence, subject to conditions. The applicant hopes this will enable Council to determine the development application. Should development consent be granted, this would provide the applicant with the confidence to invest on continued planning work to design and budget for the works required to achieve compliance with the conditions. The applicant has undertaken to provide the required information and in this regard, it is important that the applicant provides this information in a timely manner, prior to works commencing.

Council's Engineers

It is advised that the Engineers have no objections in relation to the proposal, subject to the following conditions of consent being imposed if approved:

1. That a Construction Certificate be obtained prior to the commencement of any works.
2. That a Geotechnical Report be provided relating to the bridge design prior to a Construction Certificate being issued.
3. That a Geotechnical Report be provided for all proposed roads, including subgrade design prior to a Construction Certificate being issued.
4. That the approval of John Holland Rail Pty Ltd for the final bridge design be obtained prior to the issue of a Construction Certificate.
5. That the intersection design details for bridge be provided prior to the issue of a Construction Certificate. This covers the design of both approach intersections.
6. That the intersection of new bridge and Great Western Highway is to be approved by Roads and Maritime Services prior the issue of a Construction Certificate.
7. That full vehicular access to Marangaroo Fields be maintained during all works.
8. That the new bridge is to accommodate (as a minimum) a 3.5m traffic lane, 2 x 1m shoulders, 1 x 1.5m footpath and 2 x 0.75m safety barriers.
9. That the bridge and both intersections (Great Western Highway to bridge and Girraween Drive to bridge) is to be designed to accommodate all general access vehicles as per Roads and Maritime Services and Austroads specifications.
10. That the bridge and intersection construction is to be completed and signed off by a Structural Engineer, Council, John Holland Rail Pty Ltd and the Roads and Maritime Services prior to a Construction certificate being issued relating to the proposed subdivision.
11. That the road crossfall not exceed a maximum of 3%.
12. That the footpath crossfall not exceed a maximum of 4%.
13. That all batters do not exceed a maximum of 1:5.
14. That the maximum road grade does not exceed 12%.
15. Plans are to be lodged to Council for the issue of a Construction Certificate prior to the commencement of any Civil Works.

16. All engineering works are to be to the standard specified in Council's "Guidelines for Civil Engineering Design and Construction for Development". This document is available on Council's website or upon request from Council's administration desk.
17. Internal roads shall have a minimum of 150mm (subject to testing) of DGB-20 road base applied and compacted providing a smooth transitional surface. The road surface of roads 02, 03, and 04 are to be constructed to an 8m wide formation within a 15m minimum road reserve. The road surface of road 01 is to be constructed to a 13m wide formation within a 20m minimum road reserve. Where appropriate roads are to be surfaced with a finished seal to 14/7 hot bitumen spray. Turning circles are to be 40mm hotmix/AC Roll top kerb and guttering is to be provided on both sides of all internal roads. Geotechnical compaction tests and visual deflection testing are to be undertaken and to be approved by Council prior to the application of seal.
18. 2 x 3.5m wide footways are to be provided adjacent to all internal roads. In addition, one x 1200mm wide, 120mm thick concrete footpath is to be constructed adjacent to each internal road.
19. Cul-de-sacs are to be constructed at all dead-ends so that a minimum kerbline radius of 9.5 metres is achieved from the centre of the cul-de-sac. The boundary of the road reserve should be curved with a minimum radius of 14 metres, to provide for a 4.5 metre wide footpath. Where the head of the cul-de-sac is located on the low side of the road, special provision should be made to convey overland storm water flows through easements or drainage reserves.
20. Street signs are required at all road junctions. Signs shall be purchased from Council. The location of proposed street signs is to be shown on the Engineering Drawings submitted with the construction certificate.
21. Traffic signs, traffic signals, pavement markings, guide posts, delineators, safety barriers and the like, whether permanent or temporary, are to be designed and installed at all roads in accordance with guidelines contained within the Austroads publication, "Guide to Traffic Engineering Practice - Part 8: Traffic Control Devices", Australian Standard 1742 - Manual of Uniform Traffic Control Devices and the Roads and Traffic Authority "Road Design Guide". All traffic control devices and signage are to be detailed in the engineering drawings submitted with the construction certificate. The consent of Lithgow City Council's Group Manager of Operations or appointed officer will be required prior to the installation of any traffic control devices on existing roads.
22. Two street trees per lot are to be planted within the road reserve. The developer shall consult with and seek approval from Council regarding the species to be used. Only non-frangible trees, having a mature diameter of less than 100mm, shall be planted near road verges and medians. A landscaping plan showing, but not limited to, plant species and estimated height and spread of mature trees is to be provided to Council with the construction certificate.

23. Street lighting shall be provided on all internal access roads in accordance with Australian Standard 1158 - Road Lighting. Energy absorbing columns may be required where fallen columns would be particularly hazardous. The use of energy-saving lighting fixtures is encouraged; however no rebate will be issued to the developer if these types of lamps are approved.
24. A fully certified traffic control plan and road works signage will be required where machinery may obstruct traffic on any Public Road whilst construction work is being undertaken. A traffic control plan and certification of fully qualified contractors/persons will be required to be submitted to Council prior to any work commencing on the shoulder of any Public Road. Failure to comply may result in Work Cover Intervention and may also include Council stopping all work immediately until such time the developer complies with suitable traffic management procedures.
25. A maintenance bond of 5% of final construction costs shall be paid to Council upon final inspection and approval of all civil works. The value of the maintenance bond shall be approved by Council after witnessing a certified copy of the contract documentation showing all civil construction costs for the subdivision. The maintenance period will start from the date of final inspection for a period of 12 months. At the conclusion of the 12 month period a final inspection is to be undertaken by Council at the request of the developer to determine if any defects have arisen during this time. All deficiencies are to be rectified by the developer, should outstanding works remain Lithgow City Council reserves the right to expend bond monies on rectification works.
26. All stormwater drainage is the responsibility of the applicant and shall be satisfactorily disposed of into Council's existing stormwater infrastructure.
27. The following conditions apply to Stormwater Drainage design and construction:
 - (a) Stormwater Drainage plans shall submitted to Council as part of the construction certificate, drawn at a scale sufficient to show all necessary details, nominally 1:200, 1:500, 1:1000 or 1:2000. The following data is to be included with a contoured catchment area plan:
 - i. Catchment areas and sub-areas, watershed (catchment boundary), overland flow paths, existing and proposed pipe layout. For large catchments, the total catchment area should be shown at a large scale on a separate plan or inset.
 - ii. All sub-areas, drainage lines and pits are to be logically numbered.
 - iii. A schedule of pipe details, including pipe number, size, class, bedding type, joint type, invert levels at inlet and outlet, slope, and length.
 - iv. A schedule of pit details, including pit number, type, road chainage, surface level to the Australian Height Datum (AHD), invert level to AHD, depth, and lintel length.
 - v. North point and legend.
 - vi. Setout information.
 - vii. Accurate position and level of all services and utilities which cross underground drainage pipelines.

- viii. Identify those building allotments adjacent to channels and major storm flow paths which may be liable to flooding in major flood events, and the minimum design habitable floor level adjacent to prevent flooding in the design flood event.
- ix. Inlet and outlet treatments.
- x. Measures for the prevention of erosion and sedimentation.

(b) Stormwater Pit construction:

- i. Pits shall be provided in drainage lines at all changes in grade, level, and direction, and at all pipe junctions and shall be spaced at no more than 85m apart.
- ii. Drainage pits are to conform to Council's standard Drawings, or RTA standards for Classified Roads. Non-standard structures shall be constructed as detailed in the design drawings. Such designs shall comply with AS3600 –Concrete Code, AS4100 – Steel Structures, AS1657 – SAA code for fixed platforms, walkways, stairways and ladders; and any other relevant standard.
- iii. Pits used for storm water drainage shall be fitted with square lids to distinguish them from sewer manholes.
- iv. Junction pits shall be fitted with reinforced lids and approved lifting eyes.
- v. Grated inlet pits shall not be used for street or roadway drainage.
- vi. Precast pits, incorporating insitu bases, may be used if the prior approval of the pit type and design are approved by the Group Manager of Operations.
- vii. Every endeavour shall be made to maintain flow velocities through pits. Excessive drops will not be permitted.
- viii. Pipe grading across pits should be designed on the following basis:
 - No change in direction or diameter - minimum 50mm;
 - Direction change but no change in diameter - minimum 70mm;
 - Changes in pipe diameter should be graded from obvert to obvert;
- ix. At pit connections, a 3 metre length of approved subsoil drainage pipe enclosed in a geofabric sock shall be placed alongside the main pipe so as to enter the pit at the same invert level and adequately drain the main trench, in accordance with Council's standard drawing EN 1016 (copy attached).

(c) Location of pits in roadways, for the adopted minor drainage system annual exceedance probability:

- i. Inlet pits shall be located so as to restrict the maximum gutter flow width to 2.5 metres.
- ii. Maximum spacing between any two consecutive pits is 85 metres.
- iii. Pit bypass flows should be limited to 15% of the gutter flow at that location.
- iv. At intersections, kerb inlet pits shall be constructed adjacent to the upstream kerb return tangent point where flows exceed 20 litres per second or gutter flow width is more than 1 metre.
- v. The minimum clearance from the top of the manhole to the design pit water level should be 150mm.
- vi. The product of flow velocity and depth of flow in the kerb and gutter should not exceed 0.4 m²/s.

- vii. Kerb inlet pits should be located clear of horizontal curves, pedestrian desire lines, and vehicle driveways.
- viii. Inlet conditions shall be designed so that the potential for blockage by silt and debris is minimised. This may require special treatment of the inlet sump under some conditions.

(d) Hydraulic Design

- i. Pit inlet capacities shall be estimated from design charts and formulae, based on lintel size for on-grade pits and depth of ponding for sag pits. The calculated inlet capacity shall be reduced by a factor of 50% for sag pits, and 20% for on-grade pits, on the assumption that debris is preventing some inflow.
- ii. Standard lintel sizes of 1.8, 2.4, 3.0, or 3.6 metres should be used when possible.
- iii. The minimum internal lintel size on a sag should be 2.4 metres.
- iv. The head loss through pits shall be determined from Missouri Charts or other recognised methods.

28. A site investigation is to be performed which is to include logging of test holes to a depth not less than one metre below design subgrade levels (unless rock is encountered). Soil tests shall be taken at the design depth and samples taken for CBR testing in accordance with Australian Standard 1289. The design California Bearing Ratio (CBR) shall be selected following a careful assessment of the materials encountered in the site investigation and the variability of subgrade moisture and density conditions likely in service. The design CBR value should assume poor drainage and shall be determined from soaked CBR. A copy of the site investigation, including test results, is to be included with the Engineering Drawings. Where the design subgrade CBR is below 3, the subgrade shall be chemically stabilised to a minimum depth of 150mm, and the pavement design based on a CBR of 3.

29. Each layer of pavement shall be tested for compaction and deflection as detailed below. The Group Manager of Operations or his delegate must approve each layer prior to the placing and compaction of subsequent layers.

(a) Compaction Testing:

The subgrade, and all pavement layers, shall be density tested in-situ at the start and finish of the work (within the first/last five metres), and thereafter at intervals of no more than 50 metres, or as indicated by Council's Development Engineer. A minimum of two tests will be required for road pavements less than 50 metres in length. At cul-de-sacs, additional testing will be required at the turning head. The test sites selected should be representative of the likely minimum pavement compaction levels achieved. Density testing must be undertaken by an authorised representative of a laboratory registered by the National Association of Testing Authorities (NATA). Density testing may be conducted using either the sand replacement test, nuclear gauge, or other NATA approved method. Where a nuclear gauge in direct transmission mode is used to determine pavement density, the test method shall comply with RTA Test Method T173. Results of density testing shall be forwarded directly to Council for approval. No pavement layer shall be covered by a subsequent layer until the results of the density testing have been delivered to and approved by Council's

Development Engineer. Table 1 below sets out the minimum compaction requirement for each pavement layer.

Layer	Compaction Requirement	Standard
Subgrade	98% standard maximum dry density California Bearing Ratio (CBR) test	AS 1289.E1.1 AS 1289.F1.1
Sub-Base	100% standard maximum dry density	AS 1289.E1.1
Base	100% standard maximum dry density <ul style="list-style-type: none"> • <i>Unbound Materials</i> • <i>Cemented Materials</i> Density in place test California Bearing Ratio (CBR) test	AS 1289.E2.1 AS 1289.E3.1 AS 1289.E3.1 AS 1289.F1.1

Laboratory determination of maximum dry density for pavement materials which have been modified with cement must be undertaken within 4 hours of the cement being added to the material. Materials tested outside this time will be subject to an adjustment to correctly determine the maximum dry density of the sample. For either natural or modified material, the laboratory determination of maximum dry density shall be undertaken at a frequency of no less than one determination for each days production of material.

(b) Deflection Testing:

All pavement layers must be proof-rolled, and approved by Council's Development Engineer prior to the placement of subsequent pavement layers.

The proof-rolling will be conducted using either:

- (i) a roller having a load intensity of seven (7) tonnes per metre width of roller.
- (ii) a tandem axle rigid vehicle, having a maximum load of 15 tonnes per axle group (8 tyres), 12 tonnes per axle group (6 tyres), or 10 tonnes per axle group (4 tyres). Single axle vehicles should have maximum loads of 8.5 tonnes (dual tyres), or 5.4 tonnes (single tyres).

Any movement of the pavement layer under loading will be deemed a failure.

Although not a subdivision requirement at this stage, Council strongly encourages Developers to specify in their contracts the use of Benkelman Beam tests to test for any deflection in the pavement layers, and as a means of quality assurance.

(c) Final Road Profile:

The mean construction tolerance on pavement surface crossfalls should be within $\pm 5\%$ of the design crossfall. The maximum allowable construction tolerance is $\pm 5\%$, and the maximum standard deviation of crossfalls is 5%.

The vertical alignment should not deviate by more than 25mm from the value shown on the drawings.

- 30 All road, drainage, kerb and gutter, water and sewerage reticulation works associated with a development shall be inspected by Council's Operations Department. The whole of the works are to be carried out to the satisfaction of the Group Manager of Operations. Council shall inspect engineering works at the following stages as a minimum:

- Following site regrading and shaping, and prior to installation of footway services;
- Installation of erosion and sedimentation control measures;
- Storm water drainage lines prior to backfill;
- Water and sewer lines prior to backfill;
- Testing of water and sewer lines;
- Subgrade preparation, before placing pavement;
- Establishment of line and level for kerb and gutter placement;
- Completion of each pavement layer ready for testing;
- Road pavement surfacing;
- Completion of works

The developer or contractor shall give Council a minimum 24 hours' notice when requesting an inspection to ensure that development works are not delayed. The developer shall, if required by Council's Development Engineer, submit delivery dockets for all materials used, and all material and performance test results obtained in the development.

- 31 Works as Executed (WAE) Plans detailing all services and infrastructure are to be prepared by a registered surveyor or professional engineer, and submitted to Council. The WAE plans shall be lodged prior to the release of the linen plan. The applicant is required to submit three complete sets of hard copy plans (one A1-sized, two A3-sized) and one set of electronic plans in AUTOCAD format.
- 32 A "Work-As-Executed" (WAE) plan is required to be prepared by a Registered Surveyor or professional engineer and forwarded to Council prior to the final inspection. The WAE is to include, as a minimum:
- certification that all works have been completed generally in accordance with the approved plans and specification,
 - any departure from the approved plans,
 - any additional/deleted work,
 - the location of conduits, subsoil lines, stub mains and inter-allotment drainage lines,
 - pipeline long sections showing the constructed invert levels of each pipe at each pit and pipe dimensions,
 - details of overland flow provisions,
 - site regrading areas by new contours, and
 - all other details which have a bearing on the extent of works and their acceptance by Council
- 33 All Engineering Drawings submitted to Council for approval are to have a title block showing the following:
- Applicant's Name,
 - Consultant's Name, Address, Phone No. and Contact Name,
 - Drawing Number, Sheet Number and Amendment Number,
 - Schedule showing Date and Nature of Amendments,
 - Site Address, including Lot and Deposited Plan (DP) Number,
 - Council's File Reference,
 - Stage Number,
 - Drawing Title,
 - Scale with Scale Bar, and
 - Signature of Authorised Person

Council's Water & Wastewater Officer

I refer to the abovementioned development application in regards to your referral dated 12 November 2013 and 20 June 2014 provide the following comments.

Please be advised of the following Draft Conditions

1. Approval for water and sewer works as per Section 68 of the Local Government Act 1993 shall be required prior to release of Construction Certificate.
2. The applicant shall provide detailed sewerage design, including longitudinal sections for each main, minimum depth and cover, maximum depth, grade, chainage, inverts, size, depths, manholes, manhole numbers, manhole depths, pipe velocity, proposed material and positions of junctions and dead ends for all Lots.
3. Maximum grade is to be approved subject to appropriate design and approval from Lithgow City Council for gravity sewer design purposes.
4. Where appropriate, Applicant is to obtain owners consent for any easements required for water and sewer works prior to release of Construction Certificate.
5. The applicant shall consult with Council's Water and Wastewater Department regarding the point of water and sewer connections prior to the submission of the Construction Certificate.
6. Sewer mains shall not impede storm water detention basin. The applicant shall provide detailed information regarding any bypass, piercing, or cement lining prior to the release of the Construction Certificate.
7. The applicant shall obtain approval to under bore the railway line for any water or sewer works from relevant authorities prior to the issue of the Section 68 Approval under Local Government Act 1993 and the release of the Construction Certificate.
8. The sewerage design shall include gravity connections for each proposed Lot. Privately owned Low Pressurised Sewer Systems and Package Pump Stations shall not be accepted.
9. Sewer mains located within lots adjacent to stormwater drainage lines shall be a minimum of 750 mm clear of the stormwater pipe.
10. Easements are to be created over all water and sewer infrastructure unless they are within the road reserve.
11. Upgrade works to Farmers Creek Pump Station shall be completed at the applicants full cost, including:
 - (a) The two (2) existing pumps shall be replaced. The replacement pump type and size shall be determined by Council's Water and Wastewater Department. The pumps are to be to a "Duty Assist" setup.
 - (b) Increase in wet weather storage, to provide a minimum Eight (8) hours Peak Wet Weather Flows.

- (c) Upgrade of power supply as required to meet all requirements of the electricity supplier and Council requirements. An Electrical design report to be submitted prior to approval under Section 68 of Local Government Act 1993 and Construction Certificate Approval.
 - (d) Full design details for Pump Station upgrade works to be submitted to Council prior to the release of the Construction Certificate.
12. All Water and Sewer works, including minimum and maximum flows and velocities, shall be designed in accordance WSA code.
 13. Full vehicular access and easements shall be provided to all sewer man holes.
 14. The applicant shall provide detailed water design details to include a ring main design. The new water supply network shall connect into the Fish River network via two points of connection, being Bundarra Place and the Great Western Highway.
 15. The design of water reticulation shall generally be in accordance with the latest version of the Water Services Association of Australia (WSAA) "Water Supply Code of Australia" (WSA 03).
 16. The applicant shall obtain approval for any water supply works within the Rail Corridor from relevant authorities prior to the issue of a Section 68 Approval under Local Government Act 1993 and the release of the Construction Certificate.
 17. All cost incurred by the applicant/developer in connecting to the Fish River Water Supply shall be at the applicants/developers cost.
 18. The applicant shall provide fire flow analysis for all water supply networks prior to the release of the Construction Certificate, to ensure that the network is capable of providing the performance for the design of pressure for spring hydrants. Maximum spacing of hydrants shall be 60 metres.
 19. Construction Certificate design drawings and specifications shall clearly address the following:
 - (a) Location of pipelines, valves, hydrants, pipe materials, size, pressure class, jointing methods and corrosion protection measures.
 - (b) Specifications for products, materials, site investigation, excavation / trench details and other technical matters.
 - (c) Documentation of design assumptions, constraints and issues relevant to the design and not otherwise noted in the Concept Plan.
 20. Water supply design to provide Desirable Minimum Static Pressure of 350kpa. Static Pressure shall not to exceed 500kpa at each house hold boundary.
 21. Stop (dividing and isolating) and control valves shall be positioned to give required control of the system and to provide an alternative means of supply when a distribution main is taken out of service.
 22. Minimum and maximum allowable service pressures will not be exceeded in each zone.

23. Minimum and maximum flows and velocities shall be in accordance with the WSAA Code.
24. A geotechnical report for sewer and water shall be submitted to Council prior to the release of the Construction Certificate. All Pipe and fitting materials must be suitable for application and environment.
25. The spacing and positioning of valves shall allow for isolation of individual zones.
26. Water mains shall only be installed in undisturbed ground as per WSAA code.
27. All stop valves shall be anticlockwise closing and be positioned at a minimum of every 300 metres. Valves shall be positioned adjacent to branch take offs.
28. Each lot shall have an individual water meter, which shall be purchased from Council at the applicants full cost. Water meter numbers associated with each lot shall be provided to Council prior to Linen Plan release.

Public Submissions

The proposal was also sent to surrounding landowners, landowners in the Marrangaroo Estate and placed on public display in Council's Administration Building for a period of 14 days for the original proposal and again for the amended proposal. From these two notification periods there were a total of 53 submissions made, which are summarised and discussed below. A community meeting was also held on 18 December 2014 as resolved by Council, with discussions undertaken with Councillors, Council Officers, the developer and surrounding landowners.

Traffic

- *The increase in traffic to the new subdivision will create greater congestion especially in peak hour times entering and leaving the highway.*
- *The congestion and safety of residents trying to enter and leave the highway which has a 100km speed limit is a concern.*
- *It is a major inconvenience for the closure of the one lane bridge for upgrading, which may take several months to complete, resulting in increased traffic flow and inconvenience to existing residents and Golf Club patrons. It is proposed that traffic will be diverted via Giraween Drive onto Bundarra Place, accessing a temporary road through to the new development and then onto the highway.*
- *The continual flow of heavy vehicles in the development stage of the new estate for several years will create further congestion, noise and dust to the existing residents of Marrangaroo Fields.*
- *The existing road surface is not capable of taking any increased traffic especially heavy vehicles. Most of the road surface is comprised of a series of patches with only gravel on the edges which washes into front lawns.*
- *The new subdivision should have its own access from the Great Western Highway due to the increased traffic in an already congested area.*
- *The upgrading to the bridge should be done first prior to any other works being undertaken.*
- *There are no formal plans submitted for the construction of the new bridge, and it does not seem that there was consultation with authorities.*
- *It is unclear why the proposed alternative access proposed during bridge construction cannot be the permanent access for the subdivision as it should be sealed given the amount of traffic to utilise it.*

- *It should be considered that the developer pay for any impact on the existing roadways as part of construction and ongoing impact of the subdivision.*
- *The intersection of Giraween Drive and Bundarra Place needs to be addressed as it would not be adequate for the increased traffic movements in this section.*
- *The intersection onto the highway needs to be addressed as the current egress and ingress laneways are not long enough to allow for safe access especially in a 100km/hr zone.*

Comments:

In relation to traffic the developer will be constructing an addition to the bridge making it a two lane bridge including pedestrian walkway. The turning lanes from the highway will be designed to the Roads and Maritime Services requirements for the largest class of vehicle, with the RMS providing comments on the entire proposal. There will be no closure of the bridge and access is to be provided at all times with minimal disturbance to residents of the area or patrons to the golf club. The development has been referred to RMS and John Holland Rail Pty Ltd, for the new bridge and access construction who do not object to the proposal subject to conditions of consent being imposed. With the implementation of the new bridge, it is not expected that there will be ongoing congestion for the area, as it will be improved from existing.

It will be a condition of consent that the bridge be constructed and completed (signed off by Council, RMS and John Holland Rail) prior to any other subdivision works commencing. This will ensure that the issues raised with access to the subdivision are met and that minimal impact to the community is made. It is also not practical to have an additional access for this subdivision from the highway given the site constraints and potential for further safety issues along the highway. This includes the originally proposed alternative access off the Great Western Highway at the level crossing (south of development) which was not suitable or supported by John Holland Rail, Council or the RMS as a permanent access to the development. This access will be conditioned to be fenced and not used other than for emergency services purposes.

Conditions will be imposed on the development to minimise dust at all times during construction.

The existing road surfaces in Marrangaroo Estate are to be upgraded in the near future by Council and will meet the requirements for the new subdivision. This will include some stormwater improvements and resealing up to the new construction areas.

Council's engineers have assessed the existing traffic arrangements of Bundarra Place and Girraween Drive and consider that some upgrades are required. Some works will be undertaken by Council and others by the developer where conditioned.

Alternative access during bridge construction

- *The proposed development seeks to use a right of carriageway on private property while constructing the new bridge. Owner's consent was not obtained by these owners or users of this Right of Carriageway.*
- *The existing property boundary currently cuts the proposed access in half and the track should be resurveyed to ensure the Right of Carriageway is carried through to allow ongoing access once the subdivision is completed.*

- *The existing level crossing is steep descent towards the highway and is not good condition that would be considered safe for increased traffic.*

Comments:

The concerns raised for the alternative access were originally provided when the proposal was first submitted and on exhibition. The application has since been amended to not require any alternative access, as a different bridge construction (an additional lane) is now proposed.

This bridge is to be constructed prior to any other works. Conditions will be imposed that no access be available to the site by alternative means.

The existing Right Of Carriageway (ROW) is to be maintained until an alternative arrangement can be provided to the landowners utilizing this ROW and an appropriate condition will be imposed for such.

Safety

- *The safety of residents in the case of emergencies, such as evacuations and emergency services entering and leaving the two subdivisions with only one entry and exit point is not acceptable.*
- *The proposed temporary access is unsafe over a level crossing, unless boom gates can be installed due to fast speeds of trains in this location. It is particularly unsafe at night.*
- *The holding lanes with the temporary access will not be adequate off or onto the highway.*
- *With only one entrance to the subdivision it means that if the bridge was disabled for any reason all residents in this area would be stranded.*
- *The increase in traffic will affect the safety of children using bikes etc. in the streets as there is no formal footpath for them to use.*
- *During construction it is anticipated that large trucks will need to access the subdivision which will cause major traffic issues and degrade the existing roads which is not safe for the whole estate. This will continue to go on due to trucks needing to enter the new subdivision for the construction of the houses on the new lots.*
- *The current bridge does not provide for separate pedestrian pathway over the railway and the new design should consider this as school children utilise this bridge.*
- *No facility exists for a bus shelter for children; the bus currently stops in the 100km zone and picks the children up in the laneway.*
- *The maximum tonnage limit of the bridge needs to be adequately assessed given the types of vehicles to use the access and that it would increase to two lanes.*

Comments:

In relation to the points above and safety in an evacuation, there is an alternative emergency access via the level crossing and existing track. Although this access exists it will be conditioned that it be fenced and only accessed by emergency services and Council.

Again the temporary access is no longer required as part of this proposal and concerns raised for this are no longer valid.

Council cannot require the developer to provide footpaths in an area that is not part of this proposal and where they were not historically provided. This is an issue for Council to consider for the entire Marrangaroo Estate. However footpaths will be requirement by condition of consent for the new subdivision with linkages to the bridge (and on bridge) and the existing playground area within the Marrangaroo Estate.

The bridge is to be constructed first which will be designed for the largest class of vehicle as a requirement by the RMS. This will minimise any potential traffic issues or safety concerns as it improves the existing situation.

There is an existing bus shelter within Marrangaroo Estate which is provided for school children pickup and drop offs for local schools.

Council has requested that no tonnage limit be placed on the bridge as it should be designed for the largest class of vehicle. This is to be controlled and designed as part of the construction certificate in consultation with the Council, RMS and JHR.

Solid Fuel Heaters

- *A condition should be imposed on the consent that does not allow solid fuel heaters in the estate as the bush area around Marrangaroo Fields is already being denuded by wood cutters from the estate and Lithgow.*

Comments:

It is considered that Council will impose a condition to request an 88B restrictive covenant that prohibits the use of coal burning appliances on the allotments. However, wood fired appliances will be dealt with on a case by case basis and not restricted completely due to specification improvements of solid fuel heater systems.

Water

- *The development may impact on the water supply which already has low pressure in the Marragaroo Fields Estate.*

Comments:

Council's engineers have reviewed the development in relation to water services and consider that with appropriate conditions of consent on the design, there will be no impact on water pressure within the area. This may include upgrades of existing services through the Section 68 process.

Sewer

- *There is no plan to show where the sewer will hook up with the town sewer. This could have a profound effect on some of the properties that lay to the east of the proposed subdivision. Also it should be discussed with rail if the sewer is to cross their land.*
- *The development may impact on the sewer supply which may then have low pressure in the Marragaroo Fields Estate.*

Comments:

The development will not require a new under bore of the highway as the services are to be connected to the existing services under the railway. If another under bore is required, this will require separate approval prior to any works being undertaken and will be a condition of consent.

Upgrades will be required for adequate sewer services to be provided to the subdivision. This is to be done in accordance with Council, JHR and Water NSW (Sydney Catchment Authority) guidelines and conditions of consent. All work will be subject to further design and calculation through the Section 68 process.

Extensive upgrades of Council's existing sewer pumping station are expected due to the increase in services required and will be at the cost of the developer.

Stormwater

- *It is unclear what will happen to storm water once a road has been built from the top of Bundarra Place to the new subdivision and how will the water be diverted and where will it be diverted to.*
- *Presently in heavy rains the water runs off the road at Bundarra Place and into properties with a river forming at the front of these properties. This will magnify when the new section of road is built.*
- *There should be kerb and gutter applied to Marragaroo due to ongoing issues.*
- *The plans claimed there will be no flooding in this subdivision, however there are no figures in the plans to show how much excess water will run off the Subdivision when developed. If there are no flooding issues why is there a need for a retention basin.*
- *Storm water issues at the Bundarra Place cul-de-sac is already an issue without addition storm water impacts.*
- *Surface water drainage needs to be addressed especially with road grades*

Comments:

The stormwater quality and design has been assessed by Water NSW (SCA) and Council engineers who have found it to be adequate subject to conditions of consent being imposed. The kerb and guttering will address the existing issue of Bundarra Place with the upgrades proposed. The kerb and guttering cannot be applied to the entire subdivision as part of this application as it is an existing historical issue. However, the current issue of Bundarra Place will be addressed given the connection of the new subdivision on this area.

A retention basin is required to filter all sedimentation out of the stormwater overflow prior to it being distributed into Council's stormwater systems and is a requirement for neutral or beneficial water quality by Water NSW.

The road design and surface water drainage has been assessed and can be adequately addressed through the design and conditions of consent.

Other

- *Security and privacy of land will be compromised*
- *The existing estates rural nature will be compromised*
- *The development will change the existing relaxed lifestyle of the area*
- *Dust and noise pollution during construction will impact residents.*
- *Increased bugs/vermin from proposed storm water detention center will impact the surrounding area.*
- *Concerns raised about running sewer and water through adjoining properties impacting future use of land.*
- *Increased lighting and noise in the area will impact on the amenity*
- *That there will be a decrease in sub-soil moisture from natural runoff*
- *Decrease in wildlife in the area due to residential development.*
- *Loss of natural water springs as the area is built up.*

Comments:

The subdivision is proposed within an appropriately zoned area for residential purposes. Fencing, and street lighting should minimise security issues. In relation to privacy this should not be compromised as it is a development for residential purposes next to existing residential and rural uses.

The existing Marrangaroo Estate subdivision is of residential nature with some rural attributes; however it is considered that residential subdivision is compatible use in the area. Dust, erosion and sedimentation controls and mitigation will minimise any potential issues.

The storm water detention basin will have an owners operating environmental management plan that is the responsibility of owners and is within the title of the land. This will be a condition of consent and should minimise vermin and pests within these areas. The detention basin is within an allotment and it is considered that it is the owners responsibility to control vermin and pests.

Owners consent will be required as part of the Section 68 applications to Council in relation to any potential easements through adjoining properties.

The amenity of the area, although changed is not expected to be detrimental as it is an adjoining residential use. Lighting and noise will only be attributed to residential uses and is expected to be minimal with appropriate conditions of consent.

Water NSW have addressed potential impacts on water and have no objections to the proposal subject to conditions of consent being imposed.

The majority of the property is devoid of native vegetation with scrub and forest type vegetation on the north and western edges. It is considered that there will be minimal impacts as part of the subdivision on native wildlife as the area has minimal wildlife to be lost.

It is expected there will be minimal impacts on the natural water springs. However geotechnical reports will be prepared for any excavation works for services and/or road constructions.

5.3.9 The public interest

Bridge: Upgrading of the bridge is within the public interest as it will allow for a safer access to the Marrangaroo Estate area and the new subdivision. This bridge will meet current legislative requirements and be a positive outcome for the area.

Roads: The development requires additional roads to service all the allotments within the subdivision. As a result, these roads will be dedicated to Council. Therefore, Council is required to be satisfied that these roads will be at a standard acceptable to be the roads authority. This is of public interest as the additional roads will be required to be maintained by Council resulting in future costs to the community.

Sewer: The development requires additional connections to Council's reticulated sewer. This requires potential upgrades of existing services to allow for the additional loadings. The cost of these of upgrades will be borne by the developer; however the ongoing maintenance of the services will be the responsibility of Council. It is important for Council to ensure that these services are properly provided to minimise potential unnecessary maintenance in the future. This is of public interest as there are additional sewer services that will be required to be maintained by Council resulting in future costs to the community.

Water: The development requires additional connections to the reticulated water services. This requires potential upgrades of the existing pumping mechanisms to allow for the additional loadings. The cost of these of upgrades will be borne by the developer; however the ongoing maintenance of the services will be the responsibility of Council. It is important for Council to ensure that these services are properly provided to minimise potential unnecessary maintenance in the future. This is of public interest as there are additional water services that will be required to be maintained by Council resulting in future costs to the community.

6. DISCUSSION AND CONCLUSIONS

The proposal is considered to generally comply with the relevant provisions of the applicable Environmental Planning Instruments. The proposal is not considered likely to have any significant negative impacts upon the environment or upon the amenity of the locality subject to conditions of consent. As such it is recommended that development consent is issued subject to the conditions outlined below.

7. ATTACHMENTS

Schedule A- Conditions of consent.

8. RECOMMENDATION

THAT development application DA245/13 is approved subject to conditions set out in Schedule A.

Report prepared by: Jessica Heath Supervisor: Andrew Muir

Signed:..... Signed:.....

Dated:..... Dated:.....

REASONS FOR CONDITIONS

The conditions in Schedule A have been imposed for the following reasons:

- To ensure compliance with the terms of the relevant Planning Instruments
- To ensure no injury is caused to the existing and likely future amenity of the neighbourhood
- Due to the circumstances of the case and the public interest.
- To ensure that adequate road and drainage works are provided.
- To ensure access, parking and loading arrangements will be made to satisfy the demands created by the development.
- To protect the environment.
- To prevent, minimise, and/or offset adverse environmental impacts.
- To ensure lots are adequately serviced.
- To ensure there is no unacceptable impact on the water quality.
- To ensure compliance with the requirements of the Rural Fire Services.
- To ensure adequate soil conservation and protect against movement of soil and sediments.

Schedule A

Conditions of Consent (Consent Authority) and General Terms of Approval (Integrated Approval Body)

Please Note: It should be understood that this consent in no way relieves the owner or applicant from any obligation under any covenant affecting the land.

ADMINISTRATIVE CONDITIONS

1. That the development be carried out in accordance with the application, Statement of Environmental Effects, accompanying information, plans listed in the approval and any further information provided during the process unless otherwise amended by the following conditions.
2. The Applicant must enter into a planning agreement under section 93F of the *Environmental Planning and Assessment Act 1979* with Council that is in the terms outlined in the email correspondence containing the offer dated 23 February 2015. The general terms of the agreement will be that the developer shall make a contribution of \$1,700 per additional residential allotment for community facilities in the local government area and an additional \$50,000 to the improvement/embellishment of the existing park/playground in Girraween Drive, Marrangaroo. Such agreement must be entered into prior to the issue of a Construction Certificate for subdivision works.
3. That a Subdivision Certificate Application be lodged to Council for approval.
4. That the subdivision release fee, Registered Surveyors Plans (original & 11 copies) along with associated 88B instrument, be submitted to Council for finalisation following the compliance with all conditions of this consent.
5. The applicant shall consult with an Authorised Telecommunications, Electricity and Gas Authorities for the provision of underground telephone, electricity, and natural gas services to each allotment. A Notification of Arrangement or confirmation of connection be supplied from each of the authorities is to be lodged with Lithgow City Council prior to the release of a final 'Subdivision Certificate'.
6. An application shall be submitted to Council for the supply of a Certificate of Compliance under Section 305 of the Water Management Act. A Final Subdivision Certificate shall not be issued until such time as a Certificate of Compliance has been issued under Section 307 of that Act at full cost to the applicant.
7. All right of carriageways are to be maintained until a legal alternative access arrangement can be made for landowners of Lot 701 DP1135310.
8. That no driveway access is to be provided from the existing track and level crossing south of the subdivision. This access is to be fenced at the boundary of existing Lot 702 DP1135310, and locked with appropriate mechanisms to allow emergency services and Council access only.
9. The owner's Operational Environmental Management Plan, as required by Condition 119, is to be provided to each future owner of the lot by a positive covenant on the 88B instrument for each associated allotment. Wording is to be provided and approved by Council prior to the Subdivision Certificate release.
10. That a validation Report pertaining for any fill brought to the site is to be submitted to Council prior to the materials being placed onsite.

11. If the development is likely to disturb or impact upon telecommunications and electricity infrastructure, written confirmation from the service provider that they have agreed to the proposed works must be submitted to the Principal Certifying Authority prior to the issue of a Construction Certificate or any works commencing, whichever occurs first; and
12. The arrangements and costs associated with any adjustment to telecommunications and electricity infrastructure as per Condition 11 above shall be borne in full by the applicant/developer.
13. Council's Environment and Development Department must be contacted to arrange the appropriate address numbers to be allocated to the subdivision prior to Subdivision certificate release.
14. The applicant shall place a restrictive covenant on the title of each allotment under the provision of Section 88B of the Conveyancing Act prohibiting the use of coal burning appliances. The 88B instrument shall vest authority in Council for the covenant.
15. The applicant shall submit options for road names to Council for consideration in accordance with the NSW Road Naming Policy 2013. The road names for the subdivision will be required to be gazetted prior to release of the Subdivision Certificate.
16. That secure fencing along the rail corridor to prevent unauthorised entry to the rail corridor is required. This may be in the form of a 1.8m chain wire fence or similar to prevent access to the rail corridor. This shall be installed prior to Subdivision Certificate release.
17. Prior to Lot 62 being dedicated to Council, the track is to be upgraded to a suitable standard as determined by Council's Group Manager Operations.

Water & Wastewater Requirements

18. Approval for water and sewer works as per Section 68 of the Local Government Act 1993 shall be required prior to release of Construction Certificate.
19. The applicant shall provide detailed sewerage design, including longitudinal sections for each main, minimum depth and cover, maximum depth, grade, chainage, invert, size, depths, manholes, manhole numbers, manhole depths, pipe velocity, proposed material and positions of junctions and dead ends for all Lots.
20. Maximum grades are to be approved subject to appropriate design and approval from Lithgow City Council for gravity sewer design purposes.
21. Where appropriate, the Applicant is to obtain owners consent for any easements required for water and sewer works prior to release of the Construction Certificate.
22. The applicant shall consult with Council's Water and Wastewater Department regarding the point of water and sewer connections prior to the submission of the Construction Certificate.
23. Sewer mains shall not impede storm water detention basin. The applicant shall provide detailed information regarding any bypass, piercing, or cement lining prior to the release of the Construction Certificate.
24. The applicant shall obtain approval to under bore the railway line for any water or sewer works

from relevant authorities prior to the issue of the Section 68 Approval under Local Government Act 1993 and the release of the Construction Certificate.

25. The sewerage design shall include gravity connections for each proposed Lot. Privately owned Low Pressurised Sewer Systems and Package Pump Stations shall not be accepted.
26. Sewer mains located within lots adjacent to stormwater drainage lines shall be a minimum of 750 mm clear of the stormwater pipe.
27. Easements are to be created over all water and sewer infrastructure unless they are within the road reserve.
28. Upgrade works to Farmers Creek Pump Station shall be completed at the applicants full cost, including:
 - (a) The two (2) existing pumps shall be replaced. The replacement pump type and size shall be determined by Council's Water and Wastewater Department. The pumps are to be to a "Duty Assist" setup.
 - (b) Increase in wet weather storage, to provide a minimum Eight (8) hours Peak Wet Weather Flows.
 - (c) Upgrade of power supply as required to meet all requirements of the electricity supplier and Council requirements. An Electrical design report to be submitted prior to approval under Section 68 of Local Government Act 1993 and Construction Certificate Approval.
 - (d) Full design details for Pump Station upgrade works to be submitted to Council prior to the release of the Construction Certificate.
29. All Water and Sewer works, including minimum and maximum flows and velocities, shall be designed in accordance WSA code.
30. Full vehicular access and easements shall be provided to all sewer man holes.
31. The applicant shall provide detailed water design details to include a ring main design. The new water supply network shall connect into the Fish River network via two points of connection, being Bundarra Place and the Great Western Highway.
32. The design of water reticulation shall generally be in accordance with the latest version of the Water Services Association of Australia (WSAA) "Water Supply Code of Australia" (WSA 03).
33. The applicant shall obtain approval for any water supply works within the Rail Corridor from relevant authorities prior to the issue of the a Section 68 Approval under Local Government Act 1993 and the release of the Construction Certificate.
34. All cost incurred by the applicant/developer in connecting to the Fish River Water Supply shall be at the applicants/developers cost.
35. The applicant shall provide fire flow analysis for all water supply networks prior to the release of the Construction Certificate, to ensure that the network is capable of providing the performance for the design of pressure for spring hydrants. Maximum spacing of hydrants shall be 60 metres.
36. Construction Certificate design drawings and specifications shall clearly address the following:
 - (a) Location of pipelines, valves, hydrants, pipe materials, size, pressure class, jointing methods and corrosion protection measures.
 - (b) Specifications for products, materials, site investigation, excavation / trench details and

other technical matters.

- (c) Documentation of design assumptions, constraints and issues relevant to the design and not otherwise noted in the Concept Plan.

37. Water supply design to provide Desirable Minimum Static Pressure of 350kpa. Static Pressure shall not to exceed 500kpa at each house hold boundary.
38. Stop (dividing and isolating) and control valves shall be positioned to give required control of the system and to provide an alternative means of supply when a distribution main is taken out of service.
39. Minimum and maximum allowable service pressures will not be exceeded in each zone.
40. Minimum and maximum flows and velocities shall be in accordance with the WSAA Code.
41. A geotechnical report for sewer and water shall be submitted to Council prior to the release of the Construction Certificate. All Pipe and fitting materials must be suitable for application and environment.
42. The spacing and positioning of valves shall allow for isolation of individual zones.
43. Water mains shall only be installed in undisturbed ground as per WSAA code.
44. All stop valves shall be anticlockwise closing and be positioned at a minimum of every 300 metres. Valves shall be positioned adjacent to branch take offs.
45. Each lot shall have an individual water meter, which shall be purchased from Council at the applicants full cost. Water meter numbers associated with each lot shall be provided to Council prior to the issue of a Subdivision Certificate.

Amenity

46. The applicant shall ensure that during the construction works all measures are taken to eliminate/suppress any dust nuisance emanating from the site.

Engineering Requirements

47. That a Construction Certificate be obtained prior to the commencement of any works.
48. That a Geotechnical Report be provided relating to the bridge design prior to a Construction Certificate being issued.
49. That a Geotechnical Report be provided for all proposed roads, including subgrade design prior to a Construction Certificate being issued.
50. That the approval of John Holland Rail Pty Ltd for the final bridge design be obtained prior to the issue of a Construction Certificate.
51. That the intersection design details for bridge be provided prior to the issue of a Construction Certificate. This covers the design of both approach intersections.
52. That the intersection of new bridge and Great Western Highway is to be approved by Roads and Maritime Services prior the issue of a Construction Certificate.

53. That full vehicular access to Marangaroo Fields be maintained during all works.
54. That the new bridge is to accommodate (as a minimum) a 3.5m traffic lane, 2 x 1m shoulders, 1 x 1.5m footpath and 2 x 0.75m safety barriers.
55. That the bridge and both intersections (Great Western Highway to bridge and Girraween Drive to bridge) is to be designed to accommodate all general access vehicles as per Roads and Maritime Services and Austroads specifications.
56. That the bridge and intersection construction is to be completed and signed off by a Structural Engineer, Council, John Holland Rail Pty Ltd and the Roads and Maritime Services prior to a Construction certificate being issued relating to the proposed subdivision. *(NB – The issue of the construction certificate for subdivision works cannot occur until the bridge and intersections are completed in accordance with this condition)*
57. That the road crossfall not exceed a maximum of 3%.
58. That the footpath crossfall not exceed a maximum of 4%.
59. That all batters do not exceed a maximum of 1:5.
60. That the maximum road grade does not exceed 12%.
61. Plans are to be lodged to Council for the issue of a Construction Certificate prior to the commencement of any Civil Works.
62. All engineering works are to be to the standard specified in Council's "Guidelines for Civil Engineering Design and Construction for Development". This document is available on Council's website or upon request from Council's administration desk.
63. Internal roads shall have a minimum of 150mm (subject to testing) of DGB-20 road base applied and compacted providing a smooth transitional surface. The road surface of roads 02, 03, and 04 are to be constructed to an 8m wide formation within a 15m minimum road reserve. The road surface of road 01 is to be constructed to a 11m wide formation within a 20m minimum road reserve. Where appropriate roads are to be surfaced with a finished seal to 14/7 hot bitumen spray. Turning circles are to be 40mm hotmix/AC Roll top kerb and guttering is to be provided on both sides of all internal roads. Geotechnical compaction tests and visual deflection testing are to be undertaken and to be approved by Council prior to the application of seal.
64. 2 x 3.5m wide footways are to be provided adjacent to all internal roads. In addition, one 1200mm wide, 120mm thick concrete footpath is to be constructed adjacent to each internal road. Linkages within the existing Marrangaroo Estate from the new subdivision should be provided using footpaths to the existing playground area and the new bridge construction.
65. Cul-de-sacs are to be constructed at all dead-ends so that a minimum kerbline radius of 9.5 metres is achieved from the centre of the cul-de-sac. The boundary of the road reserve should be curved with a minimum radius of 14 metres, to provide for a 4.5 metre wide footpath. Where the head of the cul-de-sac is located on the low side of the road, special provision should be made to convey overland storm water flows through easements or drainage reserves.
66. Street signs are required at all road junctions. Signs shall be purchased from Council. The

location of proposed street signs is to be shown on the Engineering Drawings submitted with the construction certificate.

67. Traffic signs, traffic signals, pavement markings, guide posts, delineators, safety barriers and the like, whether permanent or temporary, are to be designed and installed at all roads in accordance with guidelines contained within the Austroads publication, "Guide to Traffic Engineering Practice - Part 8: Traffic Control Devices", Australian Standard 1742 - Manual of Uniform Traffic Control Devices and the Roads and Traffic Authority "Road Design Guide". All traffic control devices and signage are to be detailed in the engineering drawings submitted with the construction certificate. The consent of Lithgow City Council's Group Manager of Operations or appointed officer will be required prior to the installation of any traffic control devices on existing roads.
68. Two street trees per lot are to be planted within the road reserve. The developer shall consult with and seek approval from Council regarding the species to be used. Only non-frangible trees, having a mature diameter of less than 100mm, shall be planted near road verges and medians. A landscaping plan showing, but not limited to, plant species and estimated height and spread of mature trees is to be provided to Council with the construction certificate.
69. Street lighting shall be provided on all internal access roads in accordance with Australian Standard 1158 - Road Lighting. Energy absorbing columns may be required where fallen columns would be particularly hazardous. The use of energy-saving lighting fixtures is encouraged; however no rebate will be issued to the developer if these types of lamps are approved.
70. A fully certified traffic control plan and road works signage will be required where machinery may obstruct traffic on any Public Road whilst construction work is being undertaken. A traffic control plan and certification of fully qualified contractors/persons will be required to be submitted to Council prior to any work commencing on the shoulder of any Public Road. Failure to comply may result in Work Cover Intervention and may also include Council stopping all work immediately until such time the developer complies with suitable traffic management procedures.
71. A maintenance bond of 5% of final construction costs shall be paid to Council upon final inspection and approval of all civil works. The value of the maintenance bond shall be approved by Council after witnessing a certified copy of the contract documentation showing all civil construction costs for the subdivision. The maintenance period will start from the date of final inspection for a period of 12 months. At the conclusion of the 12 month period a final inspection is to be undertaken by Council at the request of the developer to determine if any defects have arisen during this time. All deficiencies are to be rectified by the developer, should outstanding works remain Lithgow City Council reserves the right to expend bond monies on rectification works.
72. All stormwater drainage is the responsibility of the applicant and shall be satisfactorily disposed of into Council's existing stormwater infrastructure.
73. The following conditions apply to Stormwater Drainage design and construction:
 - a) Stormwater Drainage plans shall submitted to Council as part of the construction

certificate, drawn at a scale sufficient to show all necessary details, nominally 1:200, 1:500, 1:1000 or 1:2000. The following data is to be included with a contoured catchment area plan:

- i. Catchment areas and sub-areas, watershed (catchment boundary), overland flow paths, existing and proposed pipe layout. For large catchments, the total catchment area should be shown at a large scale on a separate plan or inset.
 - ii. All sub-areas, drainage lines and pits are to be logically numbered.
 - iii. A schedule of pipe details, including pipe number, size, class, bedding type, joint type, invert levels at inlet and outlet, slope, and length.
 - iv. A schedule of pit details, including pit number, type, road chainage, surface level to the Australian Height Datum (AHD), invert level to AHD, depth, and lintel length.
 - v. North point and legend.
 - vi. Setout information.
 - vii. Accurate position and level of all services and utilities which cross underground drainage pipelines.
 - viii. Identify those building allotments adjacent to channels and major storm flow paths which may be liable to flooding in major flood events, and the minimum design habitable floor level adjacent to prevent flooding in the design flood event.
 - ix. Inlet and outlet treatments.
 - x. Measures for the prevention of erosion and sedimentation.
- b) Stormwater Pit construction:
- i. Pits shall be provided in drainage lines at all changes in grade, level, and direction, and at all pipe junctions and shall be spaced at no more than 85m apart.
 - ii. Drainage pits are to conform to Council's standard Drawings, or RTA standards for Classified Roads. Non-standard structures shall be constructed as detailed in the design drawings. Such designs shall comply with AS3600 –Concrete Code, AS4100 – Steel Structures, AS1657 – SAA code for fixed platforms, walkways, stairways and ladders; and any other relevant standard.
 - iii. Pits used for storm water drainage shall be fitted with square lids to distinguish them from sewer manholes.
 - iv. Junction pits shall be fitted with reinforced lids and approved lifting eyes.
 - v. Grated inlet pits shall not be used for street or roadway drainage.
 - vi. Precast pits, incorporating insitu bases, may be used if the prior approval of the pit type and design are approved by the Group Manager of Operations.
 - vii. Every endeavour shall be made to maintain flow velocities through pits. Excessive drops will not be permitted.
 - viii. Pipe grading across pits should be designed on the following basis:
 - No change in direction or diameter - minimum 50mm;
 - Direction change but no change in diameter - minimum 70mm;
 - Changes in pipe diameter should be graded from obvert to obvert;
 - ix. At pit connections, a 3 metre length of approved subsoil drainage pipe enclosed in a geofabric sock shall be placed alongside the main pipe so as to enter the pit at the same invert level and adequately drain the main trench, in accordance with Council's standard drawing EN 1016 (copy attached).
- c) Location of pits in roadways, for the adopted minor drainage system annual exceedance probability:
- i. Inlet pits shall be located so as to restrict the maximum gutter flow width to 2.5 metres.
 - ii. Maximum spacing between any two consecutive pits is 85 metres.
 - iii. Pit bypass flows should be limited to 15% of the gutter flow at that location.

- iv. At intersections, kerb inlet pits shall be constructed adjacent to the upstream kerb return tangent point where flows exceed 20 litres per second or gutter flow width is more than 1 metre.
- v. The minimum clearance from the top of the manhole to the design pit water level should be 150mm.
- vi. The product of flow velocity and depth of flow in the kerb and gutter should not exceed 0.4 m²/s.
- vii. Kerb inlet pits should be located clear of horizontal curves, pedestrian desire lines, and vehicle driveways.
- viii. Inlet conditions shall be designed so that the potential for blockage by silt and debris is minimised. This may require special treatment of the inlet sump under some conditions.

b) Hydraulic Design

- i. Pit inlet capacities shall be estimated from design charts and formulae, based on lintel size for on-grade pits and depth of ponding for sag pits. The calculated inlet capacity shall be reduced by a factor of 50% for sag pits, and 20% for on-grade pits, on the assumption that debris is preventing some inflow.
- ii. Standard lintel sizes of 1.8, 2.4, 3.0, or 3.6 metres should be used when possible.
- iii. The minimum internal lintel size on a sag should be 2.4 metres.
- iv. The head loss through pits shall be determined from Missouri Charts or other recognised methods.

74. A site investigation is to be performed which is to include logging of test holes to a depth not less than one metre below design subgrade levels (unless rock is encountered). Soil tests shall be taken at the design depth and samples taken for CBR testing in accordance with Australian Standard 1289. The design California Bearing Ratio (CBR) shall be selected following a careful assessment of the materials encountered in the site investigation and the variability of subgrade moisture and density conditions likely in service. The design CBR value should assume poor drainage and shall be determined from soaked CBR. A copy of the site investigation, including test results, is to be included with the Engineering Drawings. Where the design subgrade CBR is below 3, the subgrade shall be chemically stabilised to a minimum depth of 150mm, and the pavement design based on a CBR of 3.

75. Each layer of pavement shall be tested for compaction and deflection as detailed below. The Group Manager of Operations or his delegate must approve each layer prior to the placing and compaction of subsequent layers.

(a) Compaction Testing:

The subgrade, and all pavement layers, shall be density tested in-situ at the start and finish of the work (within the first/last five metres), and thereafter at intervals of no more than 50 metres, or as indicated by Council's Development Engineer. A minimum of two tests will be required for road pavements less than 50 metres in length. At cul-de-sacs, additional testing will be required at the turning head. The test sites selected should be representative of the likely minimum pavement compaction levels achieved. Density testing must be undertaken by an authorised representative of a laboratory registered by the National Association of Testing Authorities (NATA). Density testing may be conducted using either the sand replacement test, nuclear gauge, or other NATA approved method. Where a nuclear gauge in direct transmission mode is used to determine pavement density, the test method shall comply with RTA Test Method T173. Results of density testing shall be forwarded directly to Council for approval. No pavement layer shall be covered by a subsequent layer until the results of the density testing have been delivered to and

approved by Council's Development Engineer. Table 1 below sets out the minimum compaction requirement for each pavement layer.

Layer	Compaction Requirement	Standard
Subgrade	98% standard maximum dry density California Bearing Ratio (CBR) test	AS 1289.E1.1 AS 1289.F1.1
Sub-Base	100% standard maximum dry density	AS 1289.E1.1
Base	100% standard maximum dry density <ul style="list-style-type: none"> • <i>Unbound Materials</i> • <i>Cemented Materials</i> Density in place test California Bearing Ratio (CBR) test	AS 1289.E2.1 AS 1289.E3.1 AS 1289.E3.1 AS 1289.F1.1

Laboratory determination of maximum dry density for pavement materials which have been modified with cement must be undertaken within 4 hours of the cement being added to the material. Materials tested outside this time will be subject to an adjustment to correctly determine the maximum dry density of the sample. For either natural or modified material, the laboratory determination of maximum dry density shall be undertaken at a frequency of no less than one determination for each days production of material.

(b) Deflection Testing:

All pavement layers must be proof-rolled, and approved by Council's Development Engineer prior to the placement of subsequent pavement layers.

The proof-rolling will be conducted using either:

- (i) a roller having a load intensity of seven (7) tonnes per metre width of roller.
- (ii) a tandem axle rigid vehicle, having a maximum load of 15 tonnes per axle group (8 tyres), 12 tonnes per axle group (6 tyres), or 10 tonnes per axle group (4 tyres). Single axle vehicles should have maximum loads of 8.5 tonnes (dual tyres), or 5.4 tonnes (single tyres).

Any movement of the pavement layer under loading will be deemed a failure.

Although not a subdivision requirement at this stage, Council strongly encourages Developers to specify in their contracts the use of Benkelman Beam tests to test for any deflection in the pavement layers, and as a means of quality assurance.

(c) Final Road Profile:

The mean construction tolerance on pavement surface crossfalls should be within $\pm 5\%$ of the design crossfall. The maximum allowable construction tolerance is $\pm 5\%$, and the maximum standard deviation of crossfalls is 5%.

The vertical alignment should not deviate by more than 25mm from the value shown on the drawings.

76. All road, drainage, kerb and gutter, water and sewerage reticulation works associated with a development shall be inspected by Council's Operations Department. The whole of the works are to be carried out to the satisfaction of the Group Manager of Operations. Council shall inspect engineering works at the following stages as a minimum:

- Following site regrading and shaping, and prior to installation of footway services;
- Installation of erosion and sedimentation control measures;
- Storm water drainage lines prior to backfill;
- Water and sewer lines prior to backfill;
- Testing of water and sewer lines;
- Subgrade preparation, before placing pavement;
- Establishment of line and level for kerb and gutter placement;
- Completion of each pavement layer ready for testing;

- Road pavement surfacing;
- Completion of works

The developer or contractor shall give Council a minimum 24 hours' notice when requesting an inspection to ensure that development works are not delayed. The developer shall, if required by Council's Development Engineer, submit delivery dockets for all materials used, and all material and performance test results obtained in the development.

77. Works as Executed (WAE) Plans detailing all services and infrastructure are to be prepared by a registered surveyor or professional engineer, and submitted to Council. The WAE plans shall be lodged prior to the release of the linen plan. The applicant is required to submit three complete sets of hard copy plans (one A1-sized, two A3-sized) and one set of electronic plans in AUTOCAD format.
78. A "Work-As-Executed" (WAE) plan is required to be prepared by a Registered Surveyor or professional engineer and forwarded to Council prior to the final inspection. The WAE is to include, as a minimum:
- certification that all works have been completed generally in accordance with the approved plans and specification,
 - any departure from the approved plans,
 - any additional/deleted work,
 - the location of conduits, subsoil lines, stub mains and inter-allotment drainage lines,
 - pipeline long sections showing the constructed invert levels of each pipe at each pit and pipe dimensions,
 - details of overland flow provisions,
 - site regrading areas by new contours, and
 - all other details which have a bearing on the extent of works and their acceptance by Council
79. All Engineering Drawings submitted to Council for approval are to have a title block showing the following:
- Applicant's Name,
 - Consultant's Name, Address, Phone No. and Contact Name,
 - Drawing Number, Sheet Number and Amendment Number,
 - Schedule showing Date and Nature of Amendments,
 - Site Address, including Lot and Deposited Plan (DP) Number,
 - Council's File Reference,
 - Stage Number,
 - Drawing Title,
 - Scale with Scale Bar, and
 - Signature of Authorised Person

Civil Construction

80. Only those areas involved in the construction of the civil works shall be disturbed, with all other areas of the site to be maintained with existing vegetation cover.
81. Construction noise shall be in accordance with the 'Noise Control Guidelines' for construction noise standards. Hours of operation shall be permitted between 7am – 6pm Monday to Friday and 8am – 1pm Saturdays. No heavy machinery work or usage shall be permitted on Sundays or Public Holidays.

TRADE & INVESTMENT- CROWN LANDS REQUIREMENTS

82. Regarding the Crown road reserve intersection between Lot 68 DP813538 and Lot 702 DP1135310, the part of the Crown road reserve that will intersect with the proposed road construction must be transferred to Council.
83. The transfer of the Crown Road to Council will be at full cost of the applicant prior to Subdivision Certificate Release.

ROADS AND MARITIME SERVICES REQUIREMENTS

84. The two lane bridge shall be designed and constructed in accordance with *Australia Standard AS 5100 Bridge Design*.
85. Prior to the release of the Construction Certificate, the proponent shall submit information to Council and Roads and Maritime to confirm that:
 - o The design of the proposed two lane bridge is adequate to accommodate the largest class of vehicle as described by the *Austrroads Vehicle Classification System*, and the maximum load that the bridge will need to carry.
 - o The minimum clear zone requirements provided in the *Austrroads Guide to Road Design and Roads and Maritime Supplements*, for both the Great Western Highway and Girraween Drive will be achieved. This requires all non-frangible structures including utility poles to be located and relocated if necessary outside of the clear zones.
86. Prior to opening of the two lane bridge to traffic, the intersection of Girraween Drive and the Great Western Highway shall be upgraded in accordance with *Austrroads Guide to Road Design* and any relevant Roads and Maritime Supplement to accommodate the largest class of vehicle that will access the bridge from the Great Western Highway, and without crossing the centreline of Girraween Drive. The largest class of vehicle turning left out of Girraween Drive must be able to do without crossing the centre line of Girraween Drive and the broken line between the slow and high speed westbound lanes of the Great Western Highway.
87. As roads works are required on a State road, the developer will be required to enter into a Works Authorisation Deed (WAD) with Roads and maritime prior to the commencement of road works at the intersection of Girraween Drive and Great Western Highway.
88. Prior to the commencement of construction works, the proponent shall contact Roads and Maritime's traffic Operations Coordinator to determine if a Road Occupancy Licence (ROL) is required. In the event that an ROL is required, the proponent shall obtain the ROL prior to works commencing within three (3) meters of the travel lanes in the Great Western Highway.

RURAL FIRE SERVICE REQUIREMENTS

Asset Protection Zones

89. At the issue of subdivision certificate and in perpetuity the entire property, excluding land greater than 18 degrees, shall be managed as an inner protection area (IPA) as outlined within Appendices 2 & 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.
90. A temporary 20 metre wide easement shall be provided adjoining the southern boundary of

proposed Lot 14. The easement shall be managed as an APZ and can be removed when the adjoining lot is re-developed.

Water and Utilities

91. Water, electricity and gas supplies shall comply with section 4.1.3 of 'Planning for Bush Fire Protection 2006'.

Access

92. The public road access shall comply with section 4.1.3 (1) of 'Planning for Bush Fire Protection 2006', except that a through road is not required at this stage.
93. Dead end roads shall incorporate a 12 metre outer radius turning circle and be clearly signposted as a dead end.
94. Battle axe handles shall be a minimum 6 metres wide to enable property access roads to comply with section 4.1.3 (2) of 'Planning for Bush Fire Protection 2006'.

JOHN HOLLAND RAIL REQUIREMENTS

95. The Applicant providing the final design, works methodology and safety documentation (to include the SWMS, competency certificates and protection officer details) for approval by John Holland Rail Country Regional Network and Transport for NSW.
96. Design and installation works complying to relevant CRN and Australian standards.
97. As-built data is to be provided to John Holland Rail Country Regional Network on completion of the works.
98. The Applicant to appropriately dispose of any soil removed during the boring process to a licensed facility (the soil is to be treated as 'industrial level' contaminated).
99. Evidence of the Applicant and Council's public liability insurance (\$250 million) and professional indemnity insurance (\$20 million) with both John Holland Rail Pty Ltd and Transport for NSW named on the respective policies (as jointly insured). The Applicant's insurances to cover construction and defect liability periods and Council's insurances to cover the asset after the cessation of the defect liability period (as the end owner of the asset).
100. Council to enter into an Infrastructure Licence for ongoing ownership and maintenance of the asset.
101. The Road-Rail Interface Agreement with Council to be amended upon completion of construction.
102. Applicant to provide a Bank Guarantee to the value of the works.
103. The existing bridge is assessed for any possible heritage impacts.
104. The new bridge should provide similar or improved load carrying capacity than the current.
105. The works shall not adversely impact maintenance accessibility.
106. An Environmental Impact Assessment (including community) to be undertaken before

construction approval is granted.

107. The design documentations (i.e. design drawings and reports) at its advance stages (i.e. 30%, 80%, 100% and for construction approval) shall be submitted for John Holland Rail Country Regional Network review and the applicant shall address whatever comments/queries.
108. No works are to commence in the corridor until John Holland Rail Country Regional Network has received and accepted information detailed at 95 to 107 and an additional agreement has been executed. John Holland Rail Country Regional Network note that the Applicant is also required to pay additional fees to John Holland Rail Country Regional Network for the assessment and processing of the Construction Application.

SYDNEY CATCHMENT AUTHORITY REQUIREMENTS

General

109. The lot layout of the subdivision shall be as shown on the Proposed General Arrangement Layout Plan prepared by LandTeam Australia Pty Ltd (Dwg No. 206152 DA01, Rev. B; dated 18 July 2014). No revised lot layout or staging of the subdivision that will impact on water quality shall be permitted without the agreement of the Sydney Catchment Authority.

Wastewater Management

110. There shall be no on-site wastewater management system on any of the proposed lots and all lots shall be connected to Council's sewerage system.

Sewage Pump Station and Sewer Main

111. The sewer main serving the subdivision shall be designed and installed to ensure it has sufficient hydraulic capacity to accommodate wastewater load generated by the subdivision.
112. Detailed design of the subdivision shall address the risks of overflows from the proposed sewer main servicing the subdivision in the event of pump failure or blockage downstream. Mitigation strategies shall be put in place to minimise any overflows or discharges to stormwater treatment devices on the site including to the proposed on-site detention basin.

Subdivision Roads and Access Ways

113. The subdivision roads and access ways shall be located and constructed as shown on the Proposed General Arrangement Layout Plan prepared by LandTeam Australia Pty Ltd (Dwg No. 206152 DA01, Rev. B; dated 18 July 2014), but with the following specifications and requirements:
 - be sealed and otherwise constructed in accordance with Council's engineering standards
 - incorporate a two-way crossfall, as appropriate, with runoff to be collected via a series of pits and pipes and directed to various water quality treatment measures detailed in the following conditions, and
 - incorporate inlet filters (EnviroPod 200 or Sydney Catchment Authority approved equivalent) on all inlet pits.
114. All stormwater structures and drainage works associated with the proposed subdivision roads shall be wholly included in the road or drainage reserve or within suitably defined easements.

Stormwater Management

115. All stormwater management measures as specified in the MUSIC Model Assessment Report (dated 18 July 2014) and Concept Drainage Plan (Dwg. No. 206152 DA24, Rev A; dated 6 June 2014.) all prepared by LandTeam Australia Pty Ltd, shall be implemented, in particular as

elaborated or varied in the following conditions.

116. Detailed Stormwater Management Plans for the subdivision shall be submitted to the Sydney Catchment Authority for review and comments prior to the issuance of the Construction Certificate.
117. All stormwater quality management measures shall be inspected and certified by a consultant approved by the Sydney Catchment Authority, as having been constructed or undertaken as specified in these conditions.
118. An Operational Environmental Management Plan (OEMP) shall be prepared in consultation with the Sydney Catchment Authority by a person with knowledge and experience in the preparation of such plans. The OEMP shall be prepared prior to the issuance of a Subdivision Certificate of the subdivision. The OEMP shall include but not be limited to:
 - details on the location and nature of stormwater management structures such as pits, pipes, inlet filters, gross pollutant traps, swales, on-site detention basin, and any other stormwater structures and drainage works
 - an identification of the responsibilities and detailed requirements for the inspection, monitoring and maintenance of all stormwater management structures, including the frequency of such activities
 - the identification of the individuals or positions responsible for inspection and maintenance activities including a reporting protocol and hierarchy, and
 - checklists for recording inspections and maintenance activities.
119. No variation to stormwater treatment or management that will impact on water quality shall be permitted without agreement of the Sydney Catchment Authority.

Future Dwellings

120. There shall be a public positive covenant under Section 88E of the *Conveyancing Act 1919*, the prescribed authority being the Sydney Catchment Authority, placed over all proposed lots requiring that any future dwelling have a rainwater collection and reuse system that includes the following specifications and requirements:
 - rainwater tanks with a minimum total capacity of 10,000 litres above any volume required for mains top-up
 - roofs and gutters designed so as to maximise the capture of rainwater in the tanks
 - the tanks plumbed to toilets, laundry and other areas for non-potable use including use for gardens, and
 - rainwater tank overflow directed to a raingarden located on the lot.
121. There shall be a public positive covenant under Section 88E of the *Conveyancing Act 1919*, the prescribed authority being the Sydney Catchment Authority, placed over all proposed lots requiring that future dwellings have a raingarden that incorporates the following specifications and requirements:
 - be located so as to capture all runoff from the lot including any rainwater tank overflow
 - be designed consistent with Chapter 6 of WSUD Engineering Procedures: Stormwater (Melbourne Water 2005) and Adoption Guidelines for Stormwater Biofiltration Systems (FAWB 2009)
 - have a minimum surface and filter area of 9 square metres
 - have an extended detention depth of 300 mm
 - have a filter depth (excluding transition layers) of 600 mm above the underdrain
 - have a filter media consisting of a clean sandy loam with a certified median particle diameter of 0.5 mm, a maximum orthophosphate concentration of 40 mg/kg and a

maximum total nitrogen concentration of 400 mg/kg

- be planted with appropriate deep-rooted, moisture-tolerant vegetation protected by rock mulch (grass and turf is not appropriate vegetation, and organic mulch is not suitable)
- direct discharge and overflow to the inter-allotment drainage system
- be protected from vehicular or other damage by fences, posts, slotted kerbs or similar permanent structures
- be protected by sediment and erosion control measures during any construction and post-construction phase until the ground surface is revegetated or stabilised, and
- no development take place within one metre of the raingarden once constructed.

122. An owner's Operational Environmental Management Plan, detailing the location and nature of the each lot's stormwater collection, reuse and treatment system, including gutters, rainwater tanks and raingarden shall be developed in consultation with the Sydney Catchment Authority and provided to each future owner of the lot.

Other

123. Conditions 111 to 119 and 122 above shall be carried out prior to the issuance of the Subdivision Certificate.

Construction Activities

124. The Soil and Water Management Plans prepared by LandTeam Australia Pty Ltd (Dwg. No. 206152 DA22 and DA23, Rev A; dated 6 June 2014.) shall be updated by a person with knowledge and experience in the preparation of such plans for all works proposed or required including for the filling of the existing dam and works in the natural drainage lines. The Plans shall meet the requirements outlined in Chapter 2 of NSW Landcom's Soils and Construction: Managing Urban Stormwater (2004) manual - the "Blue Book" and shall be developed in consultation with the Sydney Catchment Authority **prior** to the issuance of a construction certificate.

125. Effective erosion and sediment controls shall be installed prior to any construction activity including site access, and shall prevent sediment or polluted water leaving the site or entering any stormwater drain or natural drainage system. The controls shall be regularly maintained and retained until works have been completed and ground surface stabilised or groundcover re-established.

ADVISORY NOTES

Construction Certificate

- AN1. Prior to any civil works being undertaken for the subdivision a Construction Certificate will be required.

Section 68 Approvals

- AN2. The applicant must obtain written Section 68 approval from Council; this will be required prior to any construction works. The Section 68 application requires the submission of all detailed engineering drawings/design, specifications and any applicably supporting information for the proposed works.

Threatened Species

- AN3. No Threatened Species or Endangered Ecological Community listed under the Threatened Species Conservation Act 1995, the Environment Protection and Biodiversity Conservation Act 1999 or the associated Regulations are to be cleared as result of this Approval. This includes for

fencing or accessways.

Subsequent Development Applications

- AN4. Any subsequent applications for dwellings and/or other developments on the proposed lots will be subject to the provisions of State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (the SEPP) and will need to be assessed according to the Neutral or Beneficial Effect (NorBE) test in relation to the potential effect of the development on water quality.