DEVELOPMENT ASSESSMENT REPORT – DA269/17- SUBDIVISION 1 LOT INTO 11 – LOT 14 DP1202238, 7 BOWEN CHASE SOUTH BOWENFELS NSW 2790

1. PROPOSAL

Council is in receipt of a Development Application (DA269/17) for a subdivision of 1 Lot into 11 Lots at Lot 14 DP1202238, 7 Bowen Chase South Bowenfels.

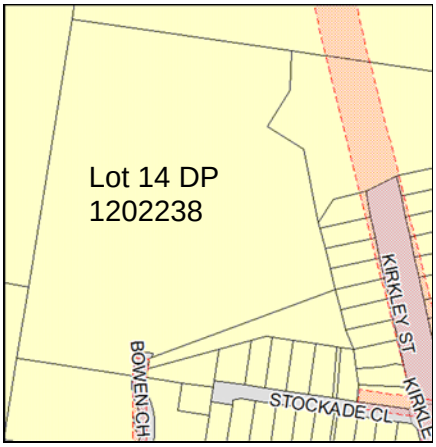
The proposal is to development 11 residential lots, 2 new public roads and a public open space area to be dedicated to Council. The proposed area for the private open space is 10300m^2.

The property contains an area of 9.033ha and is proposed to be subdivided as per the following:

- Proposed Lot 1 is to contain an area of 10380m^2,
- Proposed Lot 2 is to contain an area of 6760m^2,
- Proposed Lot 3 is to contain an area of 6120m^2,
- Proposed Lot 4 is to contain an area of 13620m^2,
- Proposed Lot 5 is to contain an area of 8180m^2,
- Proposed Lot 6 is to contain an area of 5760m^2,
- Proposed Lot 7 is to contain an area of 4680m^2,
- Proposed Lot 8 is to contain an area of 4000m^2,
- Proposed Lot 9 is to contain an area of 4810m^2,
- Proposed Lot 10 is to contain an area of 4750m^2 and
- Proposed Lot 11 is to contain an area of 4720m^2.
- Open space area is to contain an area of 10300m^2.

The property contains cleared grassed land with a ridgeline located to the west and cleared agricultural land to the north. The development involves the extension of the Bowen Vista residential estate that adjoins the property to the east and south. The proposal also seeks to relocate the existing playground onto land to be dedicated as open space to Council.

The current lot layout is shown below:



The proposed subdivision layout is shown below:

The property is shown in the photo below:

Surrounding Residential Subdivision Approvals
DA067/10 – Subdivision into 23 Lots
DA225/16 – Subdivision into 25 Lots
DA213/04 – Subdivision- stage 1 of the Bowen Vista Estate

2. SUMMARY

To assess DA269/17 with a recommendation for approval subject to conditions.

3. LOCATION OF THE PROPOSAL

Legal Description:	Lot 14 DP 1202238
Property Address:	7 BOWEN CHASE SOUTH BOWENFELS NSW 2790

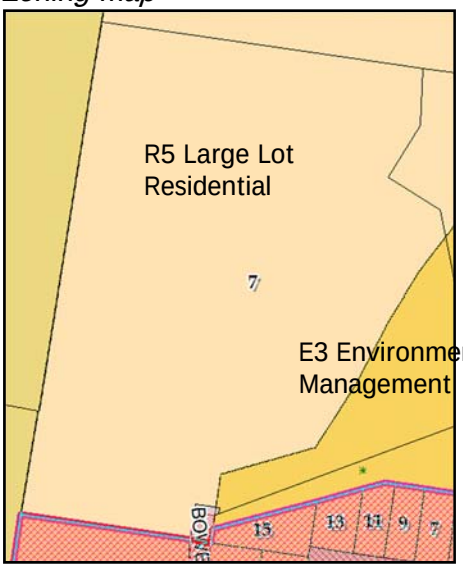
4. ZONING: The land is zoned R5 Large Lot Residential and E3 Environmental Management in accordance with Council's current planning instrument, being Lithgow Local Environmental Plan (LEP) 2014.

5. PERMISSIBILITY: At the time of lodgement (5 October 2017) the development being a 'subdivision' was not permissible under Lithgow Local Environmental Plan 2014, as it did not comply with the minimum lot size provisions of Clause 4.1 (3) below.

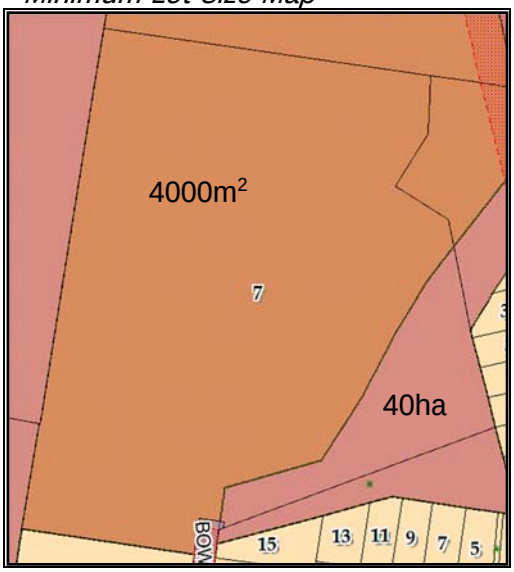
4.1 Minimum subdivision lot size

(3) The size of any lot resulting from a subdivision of land to which this clause applies is not to be less than the minimum size shown on the Lot Size Map in relation to that land.

Zoning map



Minimum Lot Size Map



The development being a 'subdivision' of land in the R5 Large Lot Residential zone is permissible for the residential allotments of Lots 1 to 11 under Clause 4.1 as each lot meets the minimum lot size (MLS) of 4000m^2 as per the Lot Size Map under LEP2014.

The area within the E3 Environmental Management zone is proposed to be dedicated to Council as public open space. As the minimum allotment size for subdivisions within the E3 zone is 40ha, the subdivision was not permissible under Council's LEP 2014 at the time of lodgement of the development application.

However, LEP 2014 has since been amended to incorporate a clause that accommodates for split zoning situations. This allows for the subdivision of land through the following additional clause:

4.1B Minimum subdivision lot size for certain split zones

(1) The objectives of this clause are as follows:

(a) to provide for the subdivision of lots that are within more than one zone but cannot be subdivided under clause 4.1, 4.1AA or 4.2C,

(b) to ensure that the subdivision occurs in a manner that promotes sustainable land uses and development.

*(2) This clause applies to any lot (an **original lot**) that contains:*

(a) land in a residential, business or industrial zone, and

(b) land in a rural or environment protection zone.

(3) Development consent may be granted to the subdivision of an original lot to create other lots if:

(a) one of the resulting lots will contain:

(i) all of the land of the original lot that is in a rural or environment protection zone, and

(ii) land in a residential, business or industrial zone that has an area not less than the minimum size shown on the Lot Size Map in relation to that land, and

(b) each of the other resulting lots will have an area that is not less than the minimum size shown on the Lot Size Map in relation to that land.

(4) Development consent may be granted to the subdivision of an original lot to create another lot that:

(a) contains land in an environment protection zone, and

(b) is less than the minimum size shown on the Lot Size Map in relation to that land, but only if the consent authority is satisfied that the resulting lot will be used for a public purpose.

(5) Subclauses (3) and (4) have effect despite clauses 4.1, 4.1AA and 4.2C.

(6) Land identified as "Area 1" or "Area 2" on the Lot Size Map may not be subdivided under this clause.

(7) Development consent may only be granted under this clause if the consent authority is satisfied that the subdivision:

(a) is not likely to have a significant adverse impact on the environmental values of the land, and

(b) will not compromise the continued protection or long-term maintenance of any land in an environment protection zone, and

(c) is not likely to have a significant adverse impact on the primary production value of land in a rural zone.

(8) In this clause, ***rural zone*** *means Zone RU1 Primary Production, Zone RU2 Rural Landscape or Zone RU3 Forestry.*

The land within the E3 zone is proposed to be dedicated to Council public open space which would comply with the provisions of proposed Clause 4.1B(4). It is considered the development is permissible under the amended clause.

The LEP amendment was approved by Council at Council's Ordinary Meeting held on 25 September 2017 and subsequently gazetted on 13 October 2017.

Council is satisfied that the development complies with Clause 4.1B(7) as the proposed residential allotments are located within the R5 Large Lot Residential Zone. The public open space area is proposed to be wholly within the E3 Zone. The development is not proposed to impact the environmental values of the land as surrounding land uses are for residential purposes. There is minimal flora and fauna identified on the property that will not be affected by the development. The development will not impact primary production on the property due to the size of the land being 9.033ha and topography of the land having a steep slope. The proposal will not have a significant impact on the environmental values of the land or the continued protection, or long term maintenance of the area, subject to conditions.

5.1 POLICY IMPLICATIONS (OTHER THAN DCP's)

Policy 1.2 Acquisition and Disposal of Assets

This Policy needs to be considered when Council is considering the acquisition and/or development of assets. A swale is proposed to be created on the dedicated open space lot to treat water runoff from the roads and lots. Each lot will be required to have a minimum 8,000 litre water tank to catch roof runoff which will be plumbed back into

the future dwellings for re-use. The lots will require inter-allotment drainage with the construction of pit and pipe to direct the stormwater across the site and into the swale for treatment.

It is proposed that Council will take ownership and maintenance of the swale, the open space land and the two new roads as part of the Subdivision Certificate release process.

Council's Director of Operations has advised that these assets satisfy the criteria identified within this Policy. The developer will be required to construct the assets to Council's specifications prior to a maintenance period and subsequent dedication.

Policy 7.1 Filling and Levelling of Land
Unless otherwise provided by an Environmental Planning Instrument or Development Control Plan, a development application be required in the following circumstances:
1. Where land is subject to inundation by floodwaters, or
2. Where excavation or the depth of fill exceeds 900mm.
Separate development applications are not required where the cut and/or fill is identified in a development application for a structure on the land.

The development proposes earthworks to be undertaken for the two new road networks, water and sewer connections and drainage works including the construction of a swale. These are included as part of the development application.

Policy 7.2 Subdivision – Release Of Subdivision Plans
The proposed development, being for a subdivision, will require compliance with this policy as part of the Subdivision Certificate release.

Policy 7.5 Notification Of Development Applications
This policy applies to all applications as below:

5. Who will be notified under this Policy and how long is the notification period?
5.1 Except for specified types of development outlined in 6.3 below, written notice of a development application will be given to landowners adjoining the Lithgow City Council Policy 7.5 – Notification of Development Applications land on which the development is proposed for a period of 14 calendar days. For the purposes of this policy adjoining land is land that directly abuts the subject site; shares a common boundary; or is situated directly opposite to the site where separated by a road, pathway or driveway.

Therefore the proposal was notified to surrounding landowners and placed on display for a period of 21 days as the development is over 10 allotments within the R5 Zone and therefore complies with Council's Policy.

Policy 7.10 Voluntary Planning Agreements
- A Voluntary Planning Agreement (VPA) has been negotiated with the developer in relation to this proposal. The developer has agreed to make a contribution of $66,000 ($6,000 per residential lot) to go toward community facilities and infrastructure.

5.2 FINANCIAL IMPLICATIONS (eg Section 94)

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 under Local Government Act 1993 for water and sewer connections will be required to be paid prior to the release of the Subdivision Certificate release.

Following condition would be included in the condition 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 or Subdivision Certificate shall not be issued until such time as the contributions applicable to release the Certificate of Compliance are paid in full to Council. The calculations will be based on 11 new residential allotments. These contributions may be found in the current Lithgow Council Fees and Charges or any applicable document adopted by Council in relation to contributions under Section 64 of the Local Government Act 1993.

Section 94A Development Contributions Plan 2015
The Section 94A plan does not apply to this development given it is for a subdivision.

Planning Agreements
A Voluntary Planning Agreement (VPA) has been negotiated with the developer in relation to this proposal. The developer has agreed to make a contribution of $66,000 ($6,000 per residential lot) to go toward community facilities and infrastructure.

5.3 LEGAL IMPLICATIONS

Conveyancing Act 1919
A Positive Covenant is to be implemented for services around the subdivision and the use of coal burning appliances to be prohibited with Council having the right to vary, modify or release the restrictions.

Local Government Act 1993
If this application is approved, the applicant must obtain a written Section 68 application 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.

Biosecurity Act 2015
The following condition will be implemented to ensure the provisions of the act are met:

- *Prior to the issue of the Subdivision Certificate, Council is to be provided with a report from Upper Macquarie County Council indicating:*
    - *Noxious plants are under adequate management; or*
    - *Noxious plant management has been undertaken and adequate control measures are in place; or*
    - *Noxious plants are not a concern for the property.*

Roads Act 1993

The proposed road with this subdivision is to be dedicated to Council under this Act. Council will become the controlling authority for the road once construction works are satisfactory and the subdivision certificate release. The proposal will meet the requirements of the Act subject to conditions of consent.

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 Local Environmental Plan 2014

LEP 2014 – Compliance Check		
Clause		**Compliance**
Land Use table	R5 Large Lot Residential	Yes
	E3 Environmental Management	Yes
4.1	Minimum subdivision lot size -4000m^2 in the R5 Zone -40ha in the E3 Zone	Yes
7.1	Earthworks	Yes
7.2	Flood Planning	Yes
7.3	Stormwater management	Yes
7.4	Terrestrial biodiversity	Yes
7.5	Groundwater vulnerability	Yes
7.7	Sensitive lands	Yes
7.10	Essential Services	Yes

Comment: The proposed subdivision of land is consistent with the zone objectives. The objectives of the zone are:

1 Objectives of the R5 Zone

• To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.
• To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.
• To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.
• To minimise conflict between land uses within this zone and land uses within adjoining zones.
• To limit development to areas in reasonable proximity to the settled town centres of Lithgow, Wallerawang and Portland to strengthen settlement hierarchy.
• To maintain or improve the water quality of receiving water catchments.

The proposed subdivision would allow lots to be developed for future residential purposes. The development is surrounded by residential uses. The development is not expected to impact facilities or services in the area. Water quality would be maintained and not be impacted upon. The development was referred to WaterNSW whose comments are found later in this report.

1 Objectives of the E3 Zone

• To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.
• To provide for a limited range of development that does not have an adverse effect on those values.
• To facilitate the management of environmentally sensitive lands and riparian areas.
• To protect and conserve the vegetation and escarpment landscape surrounding Lithgow.
• To maintain or improve the water quality of receiving water catchments.

The size of the property is currently 9.033ha and is currently vacant land. The development is proposed to be compatible with adjoining landuses being for residential purposes. The development is not expected to impact services or facilities in the area as all services exist within the vicinity of the property. The E3 zoning area is proposed to be designated to Council as public open space. The proposed development will maintain the ecological and aesthetic features of the area while providing a limited range of developments in the E3 Environmental Management zoning. The development has been designed to have a neutral or beneficial effect on water quality subject to conditions of consent being imposed.

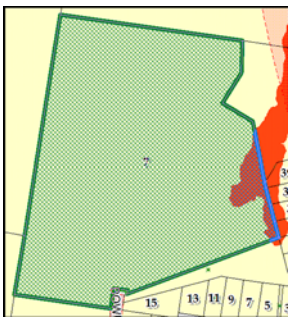
As discussed under section 5 of this report the subdivisions was not permissible under Clause 4.1 or 4.6 of the LEP2014. However, Clause 4.1B as the gazetted LEP Amendment, on 13 October 2017, allows development of split zones, permitting the proposal.

The proposal is required to undertake earthworks for drainage reserves and roads works which will be controlled through conditions of consent to ensure minimal impact to existing soils and groundwater. The development has also been assessed by Water NSW to ensure that the proposal will have minimal impacts to water quality.

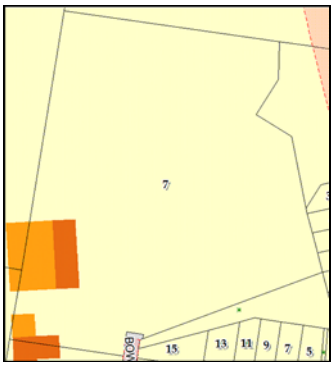
The site drains towards an intermittent drainage line which crosses the south eastern ridge of the site. A swale is proposed to be created on the dedicated open space lot to treat water runoff from the roads and lots. Each lot will be required to have a minimum 8,000 litre water tank to catch roof runoff which will be plumbed back into the dwelling for re-use. The lots will require inter-allotment drainage with the construction of pit and pipe to direct the stormwater across the site and into the swale for treatment. This is considered satisfactory for the development. It would be conditioned on the consent that future dwellings on each lot will be required to have a minimum of 8,000 litre water tank to catch roof runoff. This is to be placed on a restrictive covenant created through an 88(b) Instrument of the *Conveyancing Act 1919* with Council having the right to vary, modify or release this restriction.

The property is located within the flood prone area (Council's flood study 2017). The property is not located near any free flowing water courses, as Farmers Creek is located approximately 1209m to the north of the property. The area located within the flood mapped area is proposed to contain the open space area (the drainage swale) and a

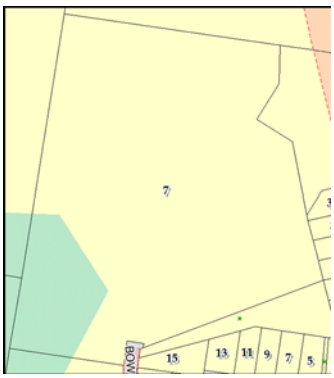
road. The property also has a slope to the north east. As no residential allotments are proposed to be located within the flood mapped area and the area is to be designated for open space purposes, the development would have minimal impact on flooding. The flood map is shown below:



The property is identified as containing Biodiversity. The proposed subdivision is not expected to have any adverse impact on ecological value or significant flora and fauna on the property as no building structures are proposed at this stage. Biodiversity is shown on the map below:

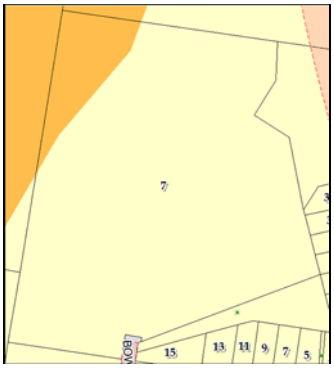


The property is subject to groundwater vulnerability. The development is designed and will be managed to avoid any significant adverse environmental impact. The development is not expected to have contamination impacts as the use of the land will remain. A NorBE assessment was undertaken for the development and was found to be satisfied. The NorBE assessment is found later in this report. The groundwater vulnerability is shown on the map below:



The property is identified as being sensitive land. The location of the development has a slight slope that is less than 25%. The land is not subject to high erosion potential, salinity, impeded drainage or expected to be subject to regular or permanent

inundation. The development is designed, sited and will be managed to avoid significant adverse environmental impact. The sensitive land map is shown below:



Each proposed Lot will have connections to Council's reticulated water and reticulated sewer services that are located within Bowen Chase. The development requires the extension of the services with a water meter to be located on each lot. The development was referred to Council's Water and Waste Water Officer whose comments are found later in this report.

Additionally, there is access to electricity and telecommunication services nearby.

The land is deemed suitable for the proposal and is considered to comply with Council's LEP 2014.

State Environmental Planning Policy 44 – Koala Habitat Protection

SEPP 44 is applicable to 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.

Comment: Given that minimal trees are to be removed as part of the development, and the section of the subject site relevant to the application is devoid of native vegetation it is considered unnecessary to proceed further with SEPP 44 assessment.

State Environmental Planning Policy (Infrastructure) 2007

SEPP (Infrastructure) 2007 – Compliance Check		
	Clause	**Compliance**
Subdivision 2 Development likely to affect an electricity transmission or distribution network		
45	Determination of development applications—other development	Yes

Comment: The application was forwarded to Transgrid and Endeavour Energy as per the requirements of Clause 45 of the SEPP. No objection to the proposal has been made subject to conditions of consent being imposed on the development.

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 has been referred to Water NSW in accordance with the SEPP for an assessment of neutral or beneficial water quality. Water NSW has advised that no objection to the proposal is made subject to conditions of consent being imposed. Therefore the development complies with the provisions of the SEPP.

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

At the time of the submission of the Development Application the following Draft Amendment was made to Council's LEP 2014. It is to be noted that the Clause was gazetted on the 13 October 2017, during the assessment of the application.

Planning Proposal – Lithgow Local Environmental Plan (Amendment 2)
Split Zones Clause

The development being a 'subdivision' of land in the R5 Large Lot Residential zone is permissible for the residential allotments of Lots 1 to 11 under Clause 4.1 as each lot meets the minimum lot size (MLS) of 4000m^2 as per the Lot Size Map under LEP2014.

The area within the E3 Environmental Management zone is proposed to be dedicated to Council as public open space. As the minimum allotment size for subdivisions within the E3 zone is 40ha, the subdivision was not permissible under Council's LEP 2014 at the time of lodgement of the development application.

However, LEP 2014 has since been amended to incorporate a clause that accommodates for split zoning situations. This allows for the subdivision of land through the following additional clause:

4.1B Minimum subdivision lot size for certain split zones

(1) The objectives of this clause are as follows:

(a) to provide for the subdivision of lots that are within more than one zone but cannot be subdivided under clause 4.1, 4.1AA or 4.2C,

(b) to ensure that the subdivision occurs in a manner that promotes sustainable land uses and development.

*(2) This clause applies to any lot (an **original lot**) that contains:*

(a) land in a residential, business or industrial zone, and

(b) land in a rural or environment protection zone.

(3) Development consent may be granted to the subdivision of an original lot to create other lots if:

(a) one of the resulting lots will contain:

(i) all of the land of the original lot that is in a rural or environment protection zone, and

(ii) land in a residential, business or industrial zone that has an area not less than the minimum size shown on the Lot Size Map in relation to that land, and

(b) each of the other resulting lots will have an area that is not less than the minimum size shown on the Lot Size Map in relation to that land.

(4) Development consent may be granted to the subdivision of an original lot to create another lot that:

(a) contains land in an environment protection zone, and

(b) is less than the minimum size shown on the Lot Size Map in relation to that land, but only if the consent authority is satisfied that the resulting lot will be used for a public purpose.

(5) Subclauses (3) and (4) have effect despite clauses 4.1, 4.1AA and 4.2C.

(6) Land identified as "Area 1" or "Area 2" on the Lot Size Map may not be subdivided under this clause.

(7) Development consent may only be granted under this clause if the consent authority is satisfied that the subdivision:

(a) is not likely to have a significant adverse impact on the environmental values of the land, and

(b) will not compromise the continued protection or long-term maintenance of any land in an environment protection zone, and

(c) is not likely to have a significant adverse impact on the primary production value of land in a rural zone.

The land within the E3 zone is proposed to be dedicated to Council public open space which would comply with the provisions of Clause 4.1B(4) gazetted 13 October 2017. The proposal will not have a significant impact of the environmental values on the land or the continued protection, or long term maintenance of the area, subject to conditions.

It is considered the development is permissible under the amended clause.

5.3.3 Any Development Control Plan

There are no DCP's applicable at the time of lodgement of the application. Council's previous DCP's that have now been repealed are used as a guide. The following repealed DCP is applicable:

South Bowenfels Development Control Plan (DCP)

South Bowenfels DCP – Compliance Check		
	Clause	**Compliance**
1.4	Aims & Objectives of the Plan	Yes
5.1	Lot Layout and size	Yes
5.2	Street Design	Yes
5.3	Utility Services	Yes
5.4	Soil and Stormwater Management	Yes
5.5	Public Open Space	Yes
5.6	Heritage	NA
5.7	Hazards/ Environmental Constraints	Yes
5.8	Benching/Cut & Fill Objectives	Yes
5.9	Visually Prominent Areas & Ridgelines	Yes
5.10	Protection of Watercourses and Riparian Corridors	NA

Comment: The development meets the aims and objectives of the plan as the context, scale and density are appropriate for the area. The configuration and size of the lots are similar to adjoining and adjacent properties. The lot sizes and orientation has been designed to suit the topography of the land as well as promoting solar access to each lot. The use of the lots for residential purposes is compatible in the area.

The proposed lots meet the depth requirement of 20m and frontage requirements of 18.5m.

Each proposed Lot will have connections to Council's reticulated water and reticulated sewer services that are located within Bowen Chase. The development requires the extension of the services with a water meter to be located on each lot. The development was referred to Council's Water and Waste Water Officer whose comments are found later in this report.

Sewer and water facilities will be available subject to Section 68 approvals under Local Government Act 1993 and civil works to Council's satisfaction. All services are to be underground and permitted by the associated authority. A restrictive covenant will be imposed ensuring that no coal burning appliances are permitted within the subdivision.

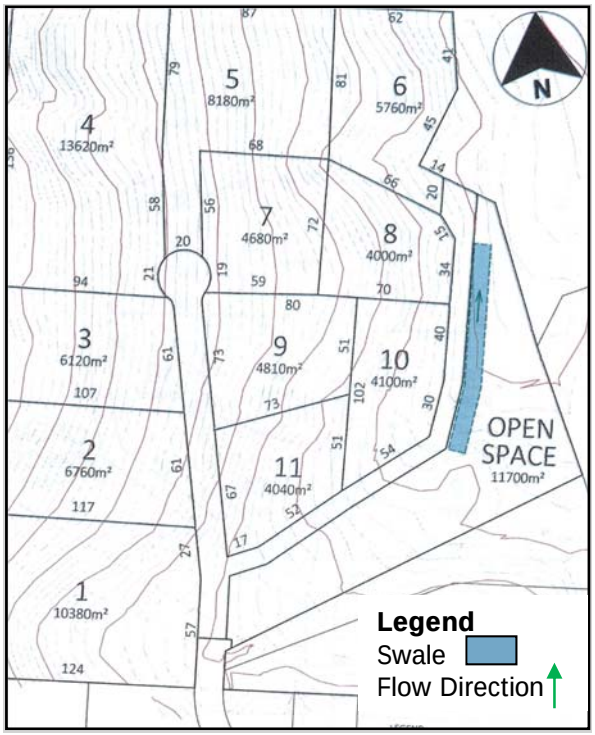
Additionally, there is access to electricity and telecommunication services nearby. The following condition would be included on the consent:

The applicant shall consult with an Authorised telecommunications, Electricity and Gas Authorities for the provision of telephone, electricity and gas to each allotment. Confirmation of connection to each allotment or a 'Notification of Arrangement' shall be lodged from each authority, with Council prior to the issue of a Subdivision Certificate.

Therefore, it is considered that the proposal will be adequately serviced.

The site drains towards an intermittent drainage line which crosses the south eastern ridge of the site. A swale is proposed to be created on the dedicated open space lot to treat water runoff from the roads and lots. Each lot will be required to have a minimum of 8,000 litre water tank to catch roof runoff which will be plumbed back into the dwelling for re-use. The lots will require inter-allotment drainage with the construction of pit and pipe to direct the stormwater across the site and into the swale for treatment.

It is proposed that Council will take ownership and maintenance of the swale on the open space land. The development was referred to WaterNSW for comment on the water quality impacts. The development was also referred to Council's Engineer's for ownership and maintenance of the swale. These comments are found later in this report. The location of the swale is shown on the plan below:



The development proposes earthworks to be undertaken for the two new road networks, water and sewer connections and drainage works including the construction of a swale. Conditions would be placed on the consent for erosion and sedimentation controls.

Each radius of the cul-de-sacs will contain a minimum of 9m. A landscaping and lighting plan will be required to be submitted to Council prior to the issue of the Subdivision Certificate.

In relation to public open space the required rate is 2.83ha/1000 population or 28.3m^2 per person. If it is assumed that each residential allotment created (11 lots) will have 2.5 persons. The development proposes to dedicate an open space area and drainage reserve with an area of 10300m^2. The development complies with the requirement for Open Space and will be subject to a Voluntary Planning Agreement for embellishments of this area. Each lot is within 400m walking distance to this open space with none of the allotments abutting the land. A footpath/cycleway will be provided within this area for pedestrian access around the Bowen Vista Estate.

The property is not subject to bushfire or has contamination constraints. The property is located within the flood prone area (Council's flood study 2017). The property is not located near any free flowing water courses, as Farmers Creek is located approximately 1209m to the north of the property. The area located within the flood mapped area is proposed to contain the open space area (the drainage swale) and a road. The property also has a slope to the north east. As no residential allotments are proposed to be located within the flood mapped area and the area is to be designated for open space purposes, the development would have minimal impact on flooding.

Council is satisfied that the development satisfactorily complies with Council's South Bowenfels Development Control Plan.

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?

A Voluntary Planning Agreement (VPA) has been negotiated with the developer in relation to this proposal. The developer has agreed to make a contribution of $66,000 ($6,000 per residential lot) to go toward community facilities and infrastructure.

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

There are no demolition works, rebuilding or extension of the building is proposed as part of this application.

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 surrounding area is generally for residential development along Kirkley Street to the east and Bowen Chase to the south. A ridgeline is located to the west of the property with cleared agricultural land to the north. The proposal will be consistent with the surrounding land uses and not cause any land use conflicts.

Services: The development will have connections to Council's reticulated water and reticulated sewer services. Additionally, there is access to electricity and telecommunication services nearby. Therefore, it is considered that the proposal will be adequately serviced.

A concept sewer layout plan was submitted with the application and shows Lots 1 to 4 to drain to the south to an existing manhole at the end of Bowen Chase, Lot 5 to 11 is proposed to drain to an existing manhole near Lot 49 DP 1103064.

The property is located on the eastern side of a ridgeline with water draining to an unnamed waterway to the north of the site.

Context and Setting: The proposed development will be located within an established residential area and will have no major impact on the context and setting of the area. The development has been designed to complement existing features of similar development in the area.

The development proposes to plant an avenue of street trees along each road within the development. The Statement of Environmental Effects states that preference is given to a deciduous maple due to the display of colours spring to autumn and to enhance solar access during the cooler months.

Access / traffic: The development involves the construction of two new roads. One road will be the extension of Bowen Chase that currently adjoins the property boundary to the south. The road extension will end with a cul-de-sac servicing Lots 4, 5 and 7.

The new road to the east is proposed to service Lots 6, 8, 10 and the public open space area. The road is proposed to end in a cul-de-sac at Lot 6.

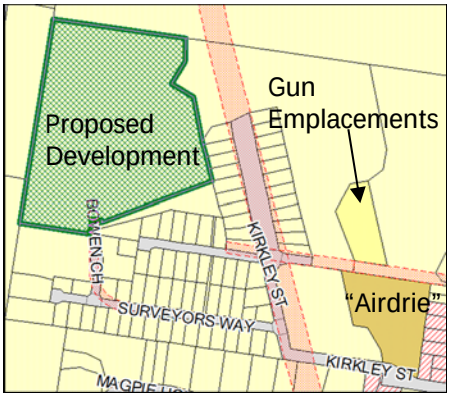
The new roads will be constructed to Council's Engineering requirements being 8m width with line marking along the outside edge to delineate a cycleway and pedestrian links through the South Bowenfels area.

A layback access to each lot would be required and subject to conditions on the consent prior to the issue of the subdivision certificate.

The road network is able to accommodate the additional traffic movements proposed for the development.

The development was referred to Council's Engineers who are satisfied with the development subject to conditions being placed on the consent. Council's Engineering comments and conditions are found later in this report.

Heritage: The property is not heritage listed under Council's LEP 2014. The development is located within proximity to two heritage items being the old gun emplacement and "Airdrie". "Airdrie" is also known as the Presbyterian Manse (The Old Manse). The building and the gun emplacement is located east of the proposed development and is visually screened by residential dwellings and the Kirkley Gardens Retirement Village. Due to the distance between the proposed development and the heritage items, and as no building structures are proposed at this stage, it is unlikely that the development would impact the gun emplacement and "Airdrie". The heritage items and the location of the proposed development is shown on the map below:



Flora and Fauna: The development requires removal of some vegetation onsite, however the area has been previously disturbed with minimal mature trees. The area is located close to residential areas with fauna limited and maintained within the bushland close by. The development is expected to have minimal impact to flora or fauna.

Social and Economic Impact: As the proposed development will be generally in keeping with the provisions of the planning instrument and is reasonably compatible with other similar development in the locality, it is expected to have minimal social and economic impact.

Soils: The development proposes earthworks to be undertaken for the two new road networks, water and sewer connections and drainage works including the construction of a swale. The development was assessed by Council and Water NSW who advised that the development is satisfactory for the area subject to conditions of consent. These conditions will ensure minimal erosion and sedimentation issues throughout the construction phase of the proposal. Conditions of consent will be imposed to control erosion and sedimentation impacts on the site.

A contamination report was submitted for the adjoining subdivision developments and indicated that the surrounding land is not subject to contamination. As the surrounding land uses and the previous use of the land being vacant, it is expected that the property does not involve contaminated soils.

Water: The proposed development has been assessed using the NorBE tool as required by the *State Environmental Planning Policy (Sydney Catchment Drinking Water) 2011* with a result of satisfied. Therefore with appropriate conditions of consent it is considered that the development will have minimal impact on water.

Air and Microclimate: There will be no significant impact on air or microclimate. However, a condition of consent will be imposed requiring that dust suppression be used during construction works to minimise impacts on the surrounding area.

Natural Hazards: The land is not known to be bushfire prone. The property is located within the flood prone area (Council's flood study 2017). The property is not located near any free flowing water courses, as Farmers Creek is located approximately 1209m to the north of the property. The area located within the flood mapped area is proposed to contain the open space area (the drainage swale) and a road. The property also has a slope to the north east. As no residential allotments are proposed to be located within the flood mapped area and the area is to be designated for open space purposes, the development would have minimal impact on flooding.

Council's flood maps are shown below:

Hydraulic Category – Mostly Floodway, some small pockets of Flood Fringe with no flood storage.

100yr Depth (Max Found) – 0.2704 metres in the North-Eastern corner of flood extent.

In summary the 100yr flood hazard is mostly low hazard with some small pockets of high hazard, 100yr Height (Max Found) is 955.7213 metres at South-Western tip of flood extent and the 100yr Velocity (Max Found) is 1.9060 metres in the Southern Centre of the flood extent.

As such the development would have minimal flood impacts.

Noise and Vibration: There are no nearby sources of noise or vibration that would impact detrimentally the proposal. The proposal is not expected to cause any noise issues in the surrounding area, given it is for future residential use.

Other Land Resources: The development will not impact on the value of the land in terms of agricultural potential or mining as it is zoned for residential use and adjacent to an established residential area. The land is not suitable for mining or forestry developments and is close to existing residential areas.

5.3.7 The Suitability of the site for the development

The surrounding land uses are for residential pursuits with the size and nature of the development to be consistent with those in the surrounding area. The proposal is compatible with the objectives of the zone and is considered to have minimal impact on the surrounding amenity. Therefore, the site is considered to be suitable for the proposed development.

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

The proposal was sent to TransGrid, Water NSW, Endeavour Energy, Council's Water & Wastewater Officer and Engineers for commenting with recommendations detailed below. The proposal was also sent to surrounding landowners and placed on public display in Council's Administration Building for a period of 21 days with 4 submissions received which are summarised below.

TRANSGRID
TransGrid confirms that there are no objections to the DA as it does not impact TransGrids Infrastrutcure.

WATER NSW

Reference is made to Council's letter received 11 October 2017 requesting the concurrence of Water NSW under State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 with a proposal for a 11-lot urban subdivision and a drainage reserve.

The subject property, which has been inspected by Water NSW, is located within the Warragamba catchment which forms part of Sydney's water supply.

A Statement of Environmental Effects (undated), Proposed Subdivision Plan (dated 25 September 2017), Stormwater Assessment Report (dated October 2017), associated revised stormwater quality MUSIC Model and Concept Services & Drainage Plan (dated 5 October 2017) all prepared by CEH Survey Pty Ltd have been considered in the assessment of the application.

In is noted that some sections of the proposed Bowen Chase extension are steep and will require careful design and implementation of erosion and sediment control during the construction phase. It is also noted that the proposed bioretention swale is proposed in an area that may be subject to waterlogging. These matters have been addressed in conditions below.

Based on Water NSW's site inspection and the information provided, the proposed development has been assessed by Water NSW 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.

Water NSW concurs with Council granting consent to the application, subject to the following conditions:

General

1. The works and lot layout of the subdivision shall be as specified in the Statement of Environmental Effects (undated) and shown on the Proposed Subdivision Plan (Plan No. 4989_CP; Sheets 1 to 5; dated 25-09-2017) both prepared by CEH Survey Pty Ltd. No revisions to lot layout works or staging of the subdivision that will impact on water quality, shall be permitted without the agreement of Water NSW.

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

Subdivision Roads

2. The subdivision roads shall be located and constructed as shown on the Proposed Subdivision Plan prepared by CEH Survey Pty Ltd (Plan No. 4989_CP; Sheets 1 to 5; dated 25-09-2017), but with the following specifications and requirements:

- be sealed and otherwise constructed in accordance with Council's engineering standards, and
- runoff to be collected via a series of pits and pipes and directed to various water quality treatment measures detailed in the following conditions.

3. 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.

Waterway Crossings

4. The subdivision road crossing of drainage lines near proposed Lot 1 shall be appropriately sized pipe or box culverts consistent with the guidelines Environmental Practice Manual of Rural Sealed and Unsealed Roads (ARRB Transport Research Ltd, 2002). The road crossing as well as the proposed sewer crossing of the watercourse in the proposed public reserve lot shall also be consistent with any requirements of a Controlled Activity Approval under the *Water Management Act 2000* issued by the Department of Industry - Water.

Reason for Conditions 2 to 4 – 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

5. All stormwater management measures as specified in the Stormwater Management Report (revised October 2017) and Concept Services & Drainage Plan (prepared by CEH Survey Pty Ltd (Plan No. 4989_CP; Sheet 5 of 5; dated 05.10.2017), shall be incorporated in the final stormwater drainage plan to be approved by Council, including:

- pits and pipes,
- interallotment drainage,
- vegetated swale,
- bioretention swale.

6. A bioretention swale shall be designed as specified in the Stormwater Management Report (revised October 2017) and located as per the Concept Services & Drainage Plan prepared by CEH Survey Pty Ltd (Plan No. 4989_CP; Sheet 5 of 5; dated 5.10.2017) to capture and treat all runoff from subdivision roads and residential areas in the southern part of the subdivision. The bioretention swale shall incorporate the following specifications and requirements:

- be located outside any swampy waterlogged area and above the 2% Annual Exceedance Probability (1 in 50 year) flood level
- be designed consistent with Adoption Guidelines for Stormwater Biofiltration Systems Version 2 (Payne et al, 2015, Melbourne, CRC for Water Sensitive Cities)
- a minimum combined surface area of 75 square metres and a minimum combined filter area of 60 square metres
- an extended detention depth of 50 mm
- a filter depth (excluding transition layers) of 300 mm above the underdrain
- a filter media consisting of a clean sandy loam with a certified median particle diameter of 0.5 mm, a maximum orthophosphate concentration of 55 mg/kg and a maximum total nitrogen concentration of 800 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 all discharge and overflow to neighbouring land via an armoured discharge point such that discharge does not cause erosion
- be accessible from a road or driveway by machinery to facilitate cleaning, monitoring and maintenance
- ensure the discharge outlets are consistent with any requirements of any Controlled Activity Approval under the Water Management Act (2000) from the Department of Industry - Water

- be permanently protected from vehicular damage by bollards, fences, castellated kerbs or similar structures, with a sign to be erected to advise of its nature and purpose in water quality management, and
- be protected by sediment and erosion control measures during any construction and post-construction phase until the ground surface is revegetated or stabilised.

7. No changes to stormwater treatment and management that will impact on water quality, shall be permitted without the agreement of Water NSW.

8. A suitably qualified stormwater consultant or engineer shall certify in writing to Water NSW and Council **prior to issuance of any Subdivision Certificate** that all stormwater management structures have been installed as per these conditions of consent and are in a functional state.

9. An Operational Environmental Management Plan (OEMP) shall be prepared in consultation with Water NSW and Council 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** and provided to Council. The OEMP shall include but not be limited to:

- details on the location, description and function of stormwater management structures such as pits, pipes, swale, bioretention swale, 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.

Reason for Conditions 4 to 9 – 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.

Construction Activities

10. A Soil and Water Management Plan shall be prepared for all works proposed or required as part of the subdivision including the subdivision roads by a person with knowledge and experience in the preparation of such plans. The Plan shall meet the requirements outlined in Chapter 2 of NSW Landcom's Soils and Construction: Managing Urban Stormwater (2004) manual - the "Blue Book". The Plan shall be prepared in consultation with Water NSW **prior to construction commencing** and shall be to the satisfaction of Council. Such works shall also be consistent with any requirements for Controlled Activities Approval under the *Water Management Act, 2000* issued by the Department of Industry - Water.

11. The Plan shall be implemented and effective erosion and sediment controls shall be installed prior to any construction activity including earthworks for the subdivision roads. The controls shall prevent sediment or polluted water leaving the construction site or entering any natural drainage lines or stormwater drain and shall be regularly maintained and retained until works have been completed and groundcover established.

Reason for Conditions 10 & 11 – 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.

ENDEAVOUR ENERGY

Reference is made to Council's letter of 11 October 2017 regarding Development Application DA269/17.

As shown in the site plans from Endeavour Energy's G/Net master facility model there are:

- No easements over the site benefitting Endeavour Energy.
- No existing electricity infrastructure on or connected to the site.

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed). This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the *Electricity Supply Act 1995* (NSW).

Subject to the following recommendations and comments Endeavour Energy has no objection to the Development Application.

Network Capacity/Connection

Endeavour Energy has noted the following in the Statement of Environmental Effects.

Existing services

The site is serviced by reticulated water, sewer, underground electricity, telecommunications and gas. These services will be extended throughout the proposed development.

The site plan from Endeavour Energy's G/Net master facility model shows the site is part of a 'Work Polygons', indicating enquiries and applications for proposed contestable works projects with Endeavour Energy's Network Connections Branch for electricity supply to the development for urban residential subdivision (Endeavour Energy reference URS7153). As such, Endeavour Energy's Network Connections Branch are managing the conditions of supply with the proponent and their authorised service provider (ASP). However there is no 'Work Polygon' specifically for the site and the applicant will need to contact Endeavour Energy's Network Connections Branch via

Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm if this development application:

- Includes any contestable works projects that are outside of the existing approved /certified works.

- Results in an electricity load that is outside of the existing Supply/Connection Offer requiring the incorporation of the additional load for consideration. This is due to load being based on a desktop assessment using an After Diversity Maximum Demand (AMMD) where demand is aggregated over a large number of customers providing an ADMD for the site / per lot. Depending on the actual development proposed for the site, the ADMD provided may not be sufficient.

Vegetation Management

The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure. Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure may become a potential safety risk, cause of bush fire, restrict access or result in the interruption of supply. Such landscaping may be subject to Endeavour Energy's Vegetation Management program and/or the provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

Dial before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the ***Dial before You Dig*** **1100** service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

Public Safety

Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. Ordinary persons must maintain a minimum safe approach distance to live exposed conductors of 3.0 metres to all voltages up to and including 132,000 volts / 132 kV high voltage. Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely are available via Endeavour Energy's website via the following link:

http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/communitynav/safety/safety+brochures

Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days.

COUNCIL'S WATER & WASTEWATER OFFICER
Reference is made to the Development Application in regard to Council's Planner's referral dated 11 October 2017.

Please find attached general design requirements in relation to the servicing requirements for water and sewerage as part of the Development Application based on Preliminary Design drawing received by Council.

The attached conditions do not constitute approval under *section 68, Local Government Act 1993*. Prior to the commencement of any works as described below;

- Undertaking of water supply works
- Undertaking of sewerage works
- Installation, alteration, disconnection or removal of a meter connected to a service pipe
- Connect a private drain or sewer with a public drain or sewer under the control of a council or with a drain or sewer which connects with such a public drain or sewer

The developer must obtain written Section 68 approval from Council, this will be required prior to the issue of the Construction Certificate. The Section 68 application requires the submission of all detailed engineering drawings/design, specifications and any applicable supporting information for the proposed works.

If your Section 68 application is approved, Council will issue you with a Section 68 approval containing conditions that must be complied with during construction.

Water Conditions

1. An application and sequent approval under *section 68* of the *Local Government Act 1993* is required for the applicant to undertake water supply and sewerage works and the installation of a water meter consist with the attached conditions. In determining this application for the purposes of section 68 of the Act for an approval to do any of the activities to which clause 15 of the Local Government (General) Regulation 2005 applies, the council must have regard to the following considerations;

(a) The protection and promotion of public health,
(b) The protection of the environment,
(c) The safety of its employees,
(d) The safeguard of its assets,
(e) Any other matter that it considers to be relevant in the circumstances.

2. Prior to the commencement of construction works the applicant needs to comply with the requirements of the *Local Government Act 1993, section 634* which requires that a person must not do any water supply work, sewerage work or stormwater drainage work unless the person;

(a) is the holder of an endorsed licence or supervisor certificate in force under the *Home Building Act 1989* authorising the holder to do (and to supervise) work of the kind concerned, or

(b) is the holder of a tradesperson certificate in force under the *Home Building Act 1989* authorising the holder to do that kind of work under supervision and does

that work under the general supervision of the holder of a licence or certificate referred to in paragraph (a), or

(c) does the work under the immediate supervision of a person referred to in paragraph (a).

(2) A person who employs (or uses the services of) another person to do any water supply work, sewerage work or stormwater drainage work is guilty of an offence if the person knows that the other person, in doing the work, contravenes subsection (1).

Documented evidence is required to be supplied prior to commencement of construction along with a Certificate of Currency for Public Liability and Professional Indemnity. WHS requirements apply to all contractors

3. The water main is to be constructed in PVC-M,O or U, with a minimum PN 16 rating and 100mm in size.

4. The water main location shall be within the road reserve.

Alignment of mains shall be compatible with Council's practices. Water mains shall be:

(i) aligned parallel to property boundaries or road features e.g. kerbs;

(ii) located to maintain adequate clearance from structures and other infrastructure; and

(iii) located to allow unhindered access for repairs and maintenance.

Where a water main cannot be located in a dedicated public road reserve, it may be located within an appropriately sized and registered easement and subject to the approval of the Council and the land Owner. An easement shall be obtained over any water main that is, or is to be, owned by the Council and which is located anywhere other than in a public road reserve or in land owned by the Council. The easement registration shall provide for rights of occupation and access by the Council and ensure suitable conditions for water main operation, maintenance and appropriate indemnities. The location of water mains within easements shall be in accordance with Council specifications.

Specific requirements for the use of an easement shall be obtained in writing from the Council prior to construction, and shall at least include:

(a) The zone-of-influence of the trench for the water main.

(b) Sufficient width and drainage capacity to minimise the risk of consequential damage in the event of a main's failure.

(c) Sufficient width for access for construction/maintenance.

(d) Additional access to allow for future upsizing, if appropriate.

5. All water mains constructed using open-cut trenching shall be installed with marking tape laid on top of the embedment zone.

Detectable marking tape shall be specified for installation above all buried non-metallic water mains, where there is no fixed reference point for easy location of the pipe such as kerbs etc. Non-detectable marking tape shall be specified for all other applications where the water main can be easily located with fixed reference points.

All water mains constructed using trenchless techniques shall be installed with a 2 mm minimum diameter Grade 316 stainless steel tracer wire wound around or affixed to the pipe and terminated and fixed at an accessible point at each end, except in the case of mains installed in a steel pipe sleeve which do not require a tracer wire.

6. Water mains shall have sufficient cover to:
   (a) ensure any vehicular loading that is in excess of the loading capability of the water main, is transferred to the soil strata beyond the water main;
   (b) suit the height dimensions (locally) of fittings such as valves and hydrants; and
   (c) meet the requirements of the road Owner (for water mains in road reserves)

Standard minimum depths of cover for water mains shall be in accordance with the Table. In areas that are subject to extremely cold conditions, cover shall be sufficient to prevent frost penetrating to the water main.

Minimum Depths of Pipe Cover

Location	Minimum Cover (mm)
Non Trafficable areas	
General (parks, easements etc)	450mm
Driveways in residential areas	450mm
Footways in local road reserves	450mm
Footways in major road and motorways reserves	600mm
Footways in industrial/commercial areas	600mm
Trafficable areas	
Driveways in industrial/commercial areas	600mm
Carriageways and verges of sealed local roads	600mm
Carriageways and verges of major roads	750mm

The water mains shall have the minimum cover as specified at the future FSL. Where a water main may be subject to abnormal loading during construction, temporary (or permanent) measures shall be taken to ensure that the water main is not overloaded e.g. increasing depth of cover to 750 mm.

7. Valves shall have anti-clockwise rotation of the input spindle for closure and are to be resilient seated. Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings

8. White coloured plastics identification covers shall be provided for the valve spindle caps.

9. Hydrants are to be provided to the principles for valve siting in section 4, additional principles to be considered shall include:
   (a) Site hydrants to facilitate flushing/swabbing of each section of water main.
   (b) A single hydrant adjacent to a stop valve shall be provided on the upstream side, wherever practicable.
   (c) A minimum of one hydrant is required between two stop valves.

(d) Provide hydrants at regular spacing not exceeding 60m, to facilitate easy location by fire brigade personnel.

10. Hydrants on reticulation mains shall be located below-ground in a non-trafficable location i.e. within the nature strip, footway or road verge and clear of driveways.

11. Hydrants are to be spring hydrants attached to the main using a flanged hydrant riser or attached to the flange of an isolating valve assembly (anti-clockwise opening).

12. Hydrant outlet connections are to be the standard claw type that is suitable for the attachment of a hydrant standpipe. Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings

13. Yellow coloured plastics identification covers shall be provided for the hydrant caps

14. Marker posts, plates and other markers and marking systems for the location of appurtenances such as hydrants, valves, scours, flushing points shall be provided for operations and maintenance personnel and other authorised users such as fire fighters in accordance with the following requirements.

(a)Retro-reflective (blue) pavement markers shall comply with AS 1906.3 and be fixed to the road surface with a high impact strength epoxy adhesive or bituminous pad (flexible pavement). The reflector shall be located 100 mm from the centre line of the road and on the same side as the hydrant.

(b) As an aid to locating appurtenances, identification letters may be cast or ground into the face of the kerb

15. Work As Constructed drawings shall be provided and shall contain information specified in Council drafting requirements.

16. A separate metered water service is to be provided. Meters are generally installed by Council, alternatively, meters can be purchased from council and installed by a suitably qualified tradesperson in accordance with AS/NZS 3500.1. Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings

17. Tapping for the water service connection is to be undertake by using a ferrule and tapping band of a type approved by Council. Tapping bands and ferrules are generally installed by Council, alternatively, the fittings can be purchased from council and installed by a suitably qualified tradesperson Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings

18. Water supply design to provide Desirable Minimum Static Pressure of 350kpa. Static Pressure shall not to exceed 500kpa at each house hold boundary.

19. 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.

20. Council approves the under road crossing by Directional Drilling Technique, given consideration of the following;

(a)Where practicable, use a continuous pipe under the road carriageway. Where impracticable, limit jointing to a single joint beneath the road carriageway.
(b) Secure the main in place using hardwood skids or a proprietary concentric support insulator system between the water main and the bored hole.

Sewer Conditions

1. All sewer works in connection with the application are to be of a size no less then 150mm to the service tie or buried vertical riser

2. Materials approved for use in sewers are:

- Vitrified Clay - VC
- Reinforced Concrete - RC, see notes 1, 2 and 3
- Ductile Iron - DICL, see notes 1, 2
- Unplasticised Poly Vinyl Chloride – uPVC (Equivalent to class SEH, solid wall or approved structured wall), see note l
- Glass Reinforced Plastics - GRP, see note 4 (Polyester Based)
- Polyethylene – HD-PE, see note 4

Notes

- Not to be used within, nor up to 1 km downstream of industrial areas or hospitals.
- Concrete shall be made with Type "SR" sulphate resisting cement with a tri-calcium aluminate content not greater than 5%, or Type "LH" low heat cement. Concrete pipes intended for other than trunk sewers shall be manufactured with a minimum 10mm sacrificial layer on the inside of the pipe.
- Concrete pipes are not acceptable for DN150 and DN225 sewers.
- Subject to special conditions and only with written approval of Lithgow City Council.

Proposals for the use of other materials will be considered if supported by adequate technical and performance data

3. Class of pipes
   - Sewerage pipes must be of adequate strength to meet overburden and traffic loads. Loads are to include loads created from likely construction and maintenance activities;
   - VC pipes shall be Class 4 or stronger;
   - Class 2 (X), 3 (Y) and 4 (Z) reinforced concrete pipes manufactured in accordance with the latest version of AS 4058 are acceptable if used in accordance with the requirements of AS 3725;
   - uPVC pipes shall be of grade Sewer Extra Heavy (SEH) or of equivalent SN grade in accordance with AS/NZS 1260;
   - Classes for Ductile Iron, Glass Reinforced Plastics, Polyethylene, or ABS pipes shall be approved by Lithgow City Council prior to use.

Notes

1. Where load limits apply the locations shall be clearly designated on drawings.
2. During the construction phase specific load provision shall be made for heavy construction equipment where required.
3. Sewers shall be laid with a depth of cover, measured from the top of the pipe socket or inspection opening to the ground surface as per section 3.7 of *AS/NZS 3500.2*, unless the product specific Standard specifies, or the manufacturer or Engineer recommends, a greater depth.

4. Inspect the trench floor on excavation for rock outcrops and soft and loose areas. Take appropriate action to ensure that the pipe or fitting or other appurtenance or structure will not be subject to differential settlement in the future.

Where rock outcrops are present, trim the trench floor and fill with granular material to restore the design trench floor level limits.

Compact all fill and all disturbed areas to not less than the density of the natural ground. Remove all debris and water before bedding sand is placed.

5. Bedding of Drains shall meet the requirements of section 5*.4 of AS/NZS 3500.2*

6. A sewerage service is to be provided for each property; joint sewerage services are prohibited under the *Local Government (General) Regulation 2005, Part 6, Division 3, section 162*

7. A service tie connecting to a sewer outside a residential block should generally be at right angles to the sewer. Where a service is a maintenance hole (manhole) or "dead-end", the service shall be at an angle between 90° and 180° from the downstream sewer to ensure a smooth flow of entry into the main line

8. Where the sewer main is located outside of the residential block, the service tie shall extend inside the property boundary and an inspection shaft extended vertically upward to the surface ground level to form a shaft. The tie should generally be located on the sewer main line at 1.0 metre from the lowest corner of the property and extend 1 metre into the boundary.

9. Manholes are to be constructed consist with the requirements of the Water Services Association of Australia, Sewerage Code of Australia 2002.

10. Manholes shall be located along a sewer main at all changes in grade, level and direction and at the intersections with other mains or dead-ends. Manholes will not be accepted within the carriageway of public roads.

11. Manholes shall be constructed using 20 MPa concrete cast in-situ base. Either Type C or Type D cement shall be used in the concrete mix.

12. Chamber and covers shall be constructed from precast concrete components of a type authorised by Council meeting the requirements of section *4.8 of AS/NZS 3500.2*. Ductile Cast Iron in concrete surround covers are preferred by LCC and must comply with AS3996

13. The standard internal diameter for manholes is 1050mm

14. Where the depth of an inspection chambers/manhole exceeds 1.2m, rung type and individual rung ladders complying with AS 1657 and AS/NZS 4680 shall be installed

15. All drainage work is subject to testing and shall comply with the with the requirements of *section 12 of AS/NZS 3500.2*

16. Where a sewer main cannot be, or is not located in a dedicated public road reserve, it is to be located within an appropriately sized and registered easement and subject to the approval of the Council and the land Owner. An easement shall be obtained over any sewer main that is, or is to be, owned by the Council and which is located anywhere other than in a public road reserve or in land owned by the Council. The easement registration shall provide for rights of occupation and access by the

Council and ensure suitable conditions for sewer main operation, maintenance and appropriate indemnities. The location of sewer mains within easements shall be in accordance with Council specifications

Work as Executed Plans

Following the satisfactory completion of works, 'Works-As-Executed' (W.A.E.) plans prepared by a registered surveyor or professional engineer shall be submitted to Council's Group Manager of Operations. Such plan must be lodged prior to the release of the subdivision linen plan, or prior to occupation or use of the development.

The W.A.E. plans shall be Engineering Drawings as modified, and shall include the following items:

- invert levels of all drainage and sewerage lines at entrance and exit of MH;
- location, class, size, and material of all pipes and subsoil lines;
- location and diameter of service conduits;
- location of stop valves, hydrants, water services,
- longitudinal sections for each sewer main,
- depth of sewer manholes,
- sewer man hole schedule numbered
- location of sewer junctions measured from downstream of MH
- minimum depth and cover, maximum depth, grade, chainage, inverts,
- storm water and interallotment drainage pits;
- location of water meters and serial number of meter installed in relation to the lot it is installed on
- site regarding details – finished surface levels at centre of front and rear boundaries;
- the location and level of any permanent survey marks;

Each Works-As-Executed plan must include certification by the Registered Surveyor responsible for the preparation of the plan

COUNCIL'S ENGINEERS

Reference is made to the Development Application in regard to Council's Planners referral dated 11 October 2017.

It is recommended that the following conditions be placed on any development consent:

1. Development is to be carried out in accordance with the application and plans submitted to Lithgow City Council or otherwise amended by the following conditions:

2. All development shall be constructed in accordance with Lithgow City Council's "Guidelines for Civil Engineering Design and Construction for Development".

3. A construction certificate shall be lodged with and issued by Council prior to any construction work proceeding on the subdivision.

4. The applicant shall provide Council with Work as Executed drawings (AutoCAD format) prior to the issue of the Subdivision Certificate. These drawings shall include all details listed in Section 1.10 of Council's 'Guidelines for Civil Engineering Design and Construction for Development'.

5. The applicant is to propose a street tree theme for the street, to be approved by Council, using trees that will grow about 20 metres in height that are suitable to the climate and soil characteristics of the street. A payment of $100 per street tree to Council, for provision of one street tree for all residential lots is required to fund the provision of trees after building work on the lots have been completed.

6. 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.

7. The applicant shall consult with an Authorised Telecommunications, Electricity and Gas Authorities for the provision of underground telephone, electricity and gas services to each allotment. Confirmation of connection to each allotment shall be lodged with Council prior to the release of the subdivision certificate.

8. Prior to the release of the linen plan, the applicant shall submit options for road names to Council for consideration and approval in accordance with the guidelines for the naming of roads (Geographical Names Board of NSW).

9. Developer shall supply at his full cost aluminium street blade(s) minimum 150mm in width, with smooth white reflective background. Reflective material is to comply with AS 1906. The street blades shall be printed with approved street name in black non-reflective writing 100mm high on both sides of blade in block type writing, as per Lettering Serious C and shall also have Council logo's on the blade(s). A 75mm OD Galvanised iron post(s) and iron cap(s) with accompanying aluminium bracket(s) holes for fixture to galvanised iron post(s) and bolts shall also be supplied. Council can arrange for the manufacture and installation of above items, all works will be at the Developers cost.

10. A maintenance bond of 5% of final construction cost, to be paid to Council upon final inspection and approval of all civil works for each stage. 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. The maintenance period will start from the date of final inspection for a period of 24 months. At the conclusion of the 24-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 Council reserves the right to expend bond monies on rectification works.

11. Construction noise shall be in accordance with the 'Noise Control Guidelines' for construction noise standards. Hours of operation shall be permitted between 7 am – 6 pm Monday to Friday and 8am to 1 pm Saturdays. No heavy machinery work or usage shall be permitted on Sundays or Public Holidays.

12. Road base material compaction testing to be undertaken by a registered NATA Laboratory prior to sealing. Test results are to be submitted to Lithgow City Council's Operations Department for assessment prior to commencement of final surface sealing work.

13. Preparation of soil erosion and sedimentation control plan is to be submitted with the engineering design for Council approval. Such to address both short and long term management of all disturbed areas, and to specify methods and structures to be employed to minimise any impact.

14. Prior to and during the commencement of works the applicant shall erect soil erosion and sedimentation controls for the following purposes:

- Control of soil erosion and sedimentation movement during the bulk earthwork stage.
- Control of run-off and diversion to the 'sedimentation trap area' prior to the development of the land.
- Method of stabilising the land from erosion and sediment movement after the completion of works, prior the development of the land.

15. The applicant is to comply with all reasonable requests from Council with regard to any complaints received during the construction works.

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

17. All roofwaters and associated water run-off shall be discharged to a Council road or directly into Councils stormwater system or defined natural watercourse. In the instance this cannot be achieved, Inter-allotment drainage shall be provided for individual allotments in accordance with Lithgow City Councils "Guidelines for Civil Engineering Design and Construction for Development" 2011 document.

18. The applicant shall provide integral kerb and guttering and one layback crossing for each new lot. Alternatively the kerb and guttering may be of roll top formation. A flush kerb is to be provided on the lower (South/East) side of Road 2, bordering the open space lot.

19. Road pavement widths and associated infrastructure is to be approved by Council prior to entering into final design. Such widths and infrastructure shall comply with Lithgow City Council's "Guidelines for Civil Engineering Design and Construction for Development" document.

<u>Bio-Swale and Grassed Swale</u>

20. Prior to the issuance of a subdivision certificate an Operational Environmental Management Plan (OEMP) is to be prepared in consultation with Water NSW and Council by a person with knowledge and experience in the preparation of such plans. In addition to the requirements of Water NSW, the OEMP is to identify at what level of development the stormwater management structures are to be constructed. Any structures identified for construction after the issuance of a subdivision certificate will require the provision of construction and maintenance bonds.

<u>Cycleway/Shared Path</u>

21. Cycleway line marking is to be completed in accordance with all relevant technical standards. Specific details are to be finalised with the submission of Construction Certificate drawings. All line marking and signage associated with the Cycleway is to be borne by the developer.

<u>Playground</u>

Relocation of the existing playground in Council's open space reserve is to be completed in coordination with Lithgow Council's Recreation Supervisor and/or Director of Operations. Specific approval is to be sought prior to any alteration to the existing playground.

PUBLIC SUBMISSIONS

During the notification period four submissions were received. The following concerns were raised:

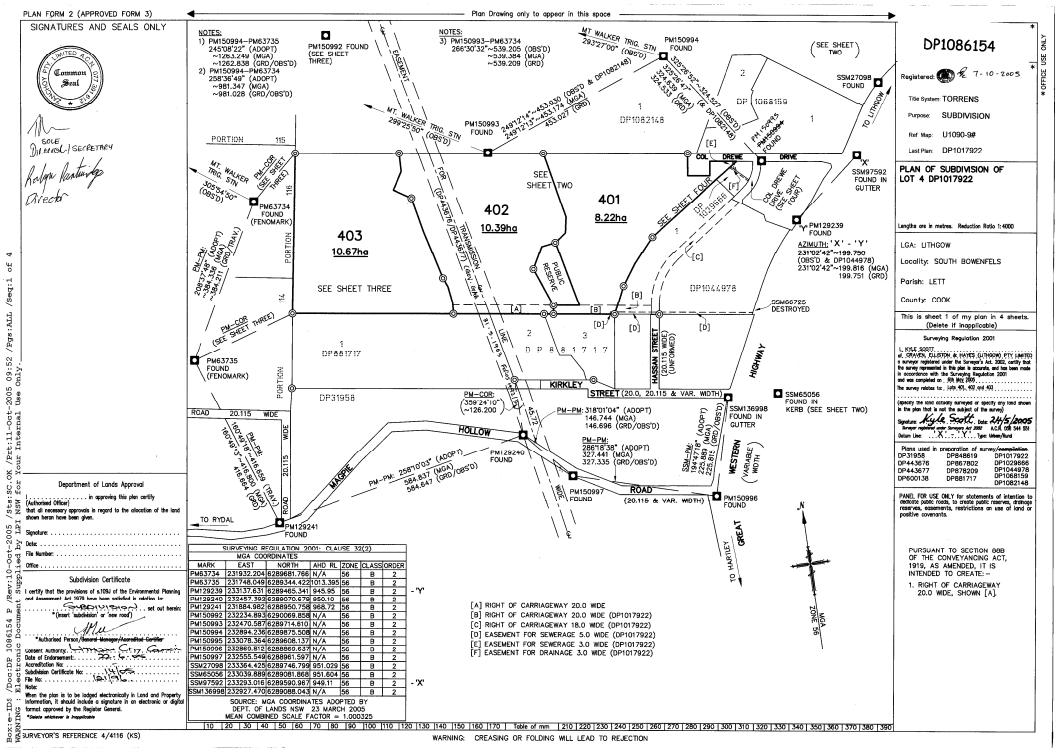
1. The status of the new public road and the adjoining subdivision that to date has not been registered with the Land and Property Information (LPI).

Council advises that the road to the boundary of the proposed development has been registered and transferred to Council as part of stage 1 of DA213/04. Council released the subdivision certificate on the adjoining allotment in August 2017 for stage 2. Therefore regardless of the status of the adjoining subdivision the road works have been finalised.

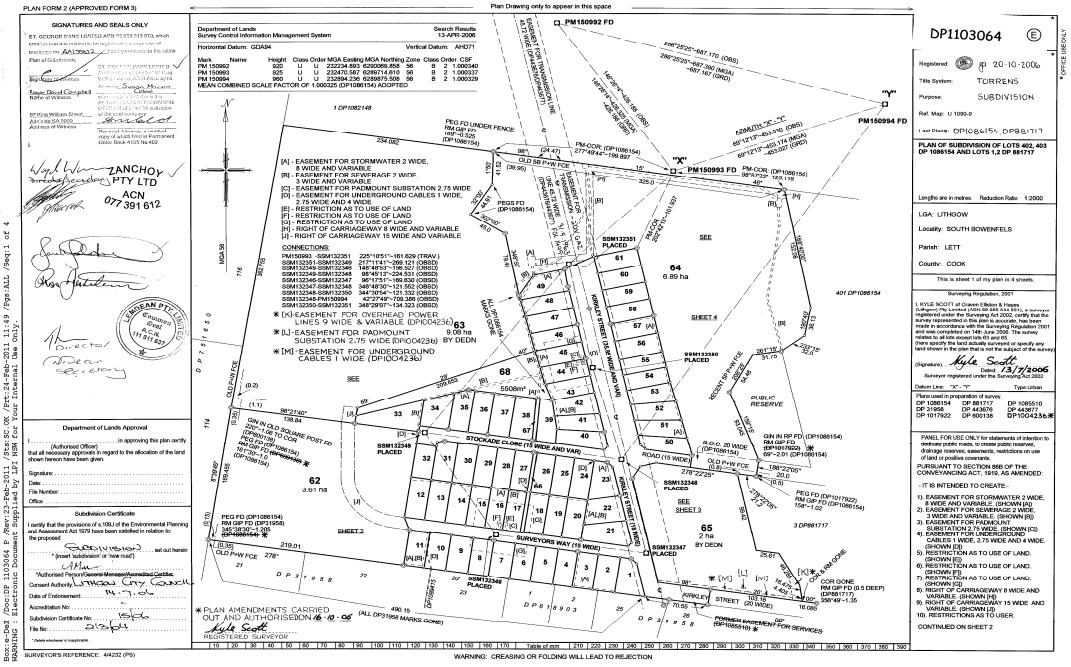
2. Access to back properties that have frontages to Stockade Close.

A former Deposited Plan (DP1086154) shows a right of carriageway for access to adjoining allotments (formally Lots 401, 402 and 403) until such time that the Lot was developed. In 2006, Lot 68 DP 1103064 and adjoining lots along Stockade Close and Kirkley Street were developed for residential purposes. As such the right of carriageway was removed.

Lots 401, 402 and 403 DP 1086154, with the right of carriageway is shown on the plan below:



The following plan shows the subdivision of the lots and the removal of the right of carriageway:



3. Inadequate access to the Great Western Highway and impacts to the intersection.

Applicant's Response: *The intersection of Kirkley Street and the Great Western has a satisfactory geometry to allow the small increase in traffic volumes which would be expected from the development.*

Council Officer's Response: The intersection as designed for future subdivisions within the South Bowenfels Estate. The Roads and Maritime Services assessed the access at the time the original South Bowenfels Estate was established and considered to be suitable for the area and future developments. There is satisfactory turning lanes from the Highway into the estate and Kirkley Street is a very wide street that would be able to contain an additional 11 lot capacity of vehicles. Site distance along the Highway is also considered to be satisfactory.

4. Impacts to flora and fauna on the property.

Applicant's Response: *The construction of the roads will require the removal of a small number of trees that lie within the proposed road corridor. The majority of the existing vegetation will remain. Each lot has an adequate building envelope which does not require the wholesale removal of native vegetation.*

Council Officer's Response: The property contains minimal vegetation and is relatively cleared of species. The road works and future dwellings sites would have minimal impact to species within on the ground or in hollows. Larger lot sizes are located to the north and east of the site, where similar flora and fauna types are found.

5. Zoning and topography as it very steep.

Council Officer's Response: The development complies with the zoning of the land. The subdivision has been developed to follow the topography of the land for the road works and potential building envelopes. Future buildings would be required to have retaining walls and controls to minimise environmental impacts.

6. The grey gum tree within the proposed location of the road. The gumtree is a native bird habitat and should remain.

Council Officer's Response: The site plan was amended by the applicant after the submissions were received and the tree will remain.

7. Drainage: the management of drainage and soil and erosion controls.

Council Officer's Response: Stormwater and drainage plans were submitted with the application and were assessed by WaterNSW. WaterNSW are satisfied with the proposed drainage for the development. Conditions for soil and erosion controls would be included on the consent.

5.3.9 The public interest

There have been no issues raised from the public regarding planning issues.

Road Extension: The development requires an addition to a road that will service the lots within the subdivision. As a result, this road extension will be dedicated to Council. Therefore, Council is required to be satisfied that this road will be at a standard acceptable as a roads authority. This is of public interest as the additional road extension 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. However, contributions through the Water Management Act 2000 will be applicable and will provide support to Council's ongoing maintenance of this utility.

Water: The development requires additional connections to the reticulated water services. 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. However, contributions through the Water Management Act 2000 will be applicable and will provide support to Council's ongoing maintenance of this utility.

Designation of land and associated assets: The development proposes to dedicate land to Council which retains the stormwater infrastructure being a bio-retention swale. This land and bio-retention swale will require ongoing maintenance once the land is dedicated to Council. This is of public interest as there is additional land and infrastructure that will require maintenance by Council resulting in future costs to the community. Further, the existing playground equipment is to be moved

within land to be dedicated to Council. This process will be covered by proposed conditions of consent if approved.

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. 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 DA269/17 is approved subject to conditions set out in Schedule A.

Report prepared by:	Supervisor:
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 that satisfactory arrangements are made to satisfy the increased demand for public recreation facilities.
- To ensure access, parking and loading arrangements will be made to satisfy the demands created by the development.
- To ensure the structural integrity of the development.
- To ensure the protection of the health and safety of the occupants of 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 adequate soil conservation and protect against movement of soil and sediments.

Schedule A
Conditions of Consent (Consent Authority)

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. That the a Subdivision Certificate Application, release fee, Registered Surveyors Plans (original & 11 copies) along with associated 88B instrument if applicable, be submitted to Council for finalisation following the compliance with all conditions of this consent.

3. No coal burning appliances are to be installed on the residential allotments. A restrictive covenant shall be placed on each lot created through an 88(b) Instrument of the *Conveyancing Act 1919* with Council having the right to vary, modify or release this restriction.

4. Future dwellings on each lot will be required to have a minimum of 8,000 litre water tank to catch roof runoff. This is to be placed on a positive covenant created through an 88(b) Instrument of the *Conveyancing Act 1919* with Council having the right to vary, modify or release this restriction.

5. A street lighting plan is to be provided with adequate street lighting in accordance with AS/NZS and be to the satisfaction of the relevant electricity supplier prior to release of the Subdivision Certificate. Such lighting shall have regard to its visual impact and be designed to complement the streetscape. Street lighting is to be implemented prior to the release of the Subdivision Certificate.

6. A Vegetation Management Plan is to be prepared and approved by Council prior to commencement of work. The works required as per the Vegetation Management Plan are to be undertaken prior to Council allowing for the dedication of the open space.

7. That the Voluntary Planning Agreement (VPA) be endorsed by all parties as proposed by CEH Survey on 22 November 2017 prior to the issue of the Subdivision Certificate.
   Additionally:
   - The contribution agreed to within the VPA is to be paid at a rate of $6,000.00 per lot for community facilities and public open space prior to the issue Subdivision Certificate.

PRIOR TO ISSUE OF SUBDIVISION CERTIFICATE

Contributions

8. 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 or Subdivision Certificate shall not be issued until such time as the contributions applicable to release the Certificate of Compliance are paid in full to Council. The calculations will be based on 11 new residential allotments. These contributions may be found in the current Lithgow Council Fees and Charges or any applicable document adopted by Council in relation to contributions under Section 64 of the Local Government Act 1993.

Utilities

9. The applicant shall consult with an Authorised telecommunications, Electricity and Gas Authorities for the provision of telephone, electricity and gas to each allotment. Confirmation of connection to each allotment or a 'Notification of Arrangement' shall be lodged from each authority, with Council prior to the issue of a Subdivision Certificate.

Environmental Protection

10. Prior to the issue of the Subdivision Certificate, Council is to be provided with a report from Upper Macquarie County Council indicating:
    - Noxious plants are under adequate management; or
    - Noxious plant management has been undertaken and adequate control measures are in place; or
    - Noxious plants are not a concern for the property

Water and Sewer Requirements

11. The developer must obtain written Section 68 approval from Council, this will be required prior to the issue of the Construction Certificate. The Section 68 application requires the submission of all detailed engineering drawings/design, specifications and any applicable supporting information for the proposed works.

    If your Section 68 application is approved, Council will issue you with a Section 68 approval containing conditions that must be complied with during construction.

Water Conditions

12. An application and sequent approval under *section 68* of the *Local Government Act 1993* is required for the applicant to undertake water supply and sewerage works and the installation of a water meter consist with the attached conditions. In determining this application for the purposes of section 68 of the Act for an approval to do any of the activities to which clause 15 of the Local Government (General) Regulation 2005 applies, the council must have regard to the following considerations;

    (a) The protection and promotion of public health,
    (b) The protection of the environment,
    (c) The safety of its employees,
    (d) The safeguard of its assets,
    (e) Any other matter that it considers to be relevant in the circumstances.

13. Prior to the commencement of construction works the applicant needs to comply with the requirements of the *Local Government Act 1993, section 634* which requires that a person must not do any water supply work, sewerage work or stormwater drainage work unless the person;
    (a) is the holder of an endorsed licence or supervisor certificate in force under the *Home Building Act 1989* authorising the holder to do (and to supervise) work of the kind concerned, or
    (b) is the holder of a tradesperson certificate in force under the *Home Building Act 1989* authorising the holder to do that kind of work under supervision and does that work under the general supervision of the holder of a licence or certificate referred to in paragraph (a), or
    (c) does the work under the immediate supervision of a person referred to in paragraph (a).

    A person who employs (or uses the services of) another person to do any water supply work, sewerage work or stormwater drainage work is guilty of an offence if the person knows that the other person, in doing the work, contravenes subsection (1).

Documented evidence is required to be supplied prior to commencement of construction along with a Certificate of Currency for Public Liability and Professional Indemnity. WHS requirements apply to all contractors

14. The water main is to be constructed in PVC-M,O or U, with a minimum PN 16 rating and 100mm in size.

15. The water main location shall be within the road reserve.

Alignment of mains shall be compatible with Council's practices. Water mains shall be:

(i) aligned parallel to property boundaries or road features e.g. kerbs;

(ii) located to maintain adequate clearance from structures and other infrastructure; and

(iii) located to allow unhindered access for repairs and maintenance.

Where a water main cannot be located in a dedicated public road reserve, it may be located within an appropriately sized and registered easement and subject to the approval of the Council and the land Owner. An easement shall be obtained over any water main that is, or is to be, owned by the Council and which is located anywhere other than in a public road reserve or in land owned by the Council. The easement registration shall provide for rights of occupation and access by the Council and ensure suitable conditions for water main operation, maintenance and appropriate indemnities. The location of water mains within easements shall be in accordance with Council specifications.

Specific requirements for the use of an easement shall be obtained in writing from the Council prior to construction, and shall at least include:

(a) The zone-of-influence of the trench for the water main.

(b) Sufficient width and drainage capacity to minimise the risk of consequential damage in the event of a main's failure.

(c) Sufficient width for access for construction/maintenance.

(d) Additional access to allow for future upsizing, if appropriate.

16. All water mains constructed using open-cut trenching shall be installed with marking tape laid on top of the embedment zone.

Detectable marking tape shall be specified for installation above all buried non-metallic water mains, where there is no fixed reference point for easy location of the pipe such as kerbs etc. Non-detectable marking tape shall be specified for all other applications where the water main can be easily located with fixed reference points.

All water mains constructed using trenchless techniques shall be installed with a 2 mm minimum diameter Grade 316 stainless steel tracer wire wound around or affixed to the pipe and terminated and fixed at an accessible point at each end, except in the case of mains installed in a steel pipe sleeve which do not require a tracer wire.

17. Water mains shall have sufficient cover to:

(a) ensure any vehicular loading that is in excess of the loading capability of the water main, is transferred to the soil strata beyond the water main;

(b) suit the height dimensions (locally) of fittings such as valves and hydrants;and

(c) meet the requirements of the road Owner (for water mains in road reserves).

Standard minimum depths of cover for water mains shall be in accordance with the Table. In areas that are subject to extremely cold conditions, cover shall be sufficient to prevent frost penetrating to the water main.

Minimum Depths of Pipe Cover

Location	Minimum Cover (mm)
Non Trafficable areas	
General (parks, easements etc)	450mm
Driveways in residential areas	450mm
Footways in local road reserves	450mm
Footways in major road and motorways reserves	600mm
Footways in industrial/commercial areas	600mm
Trafficable areas	
Driveways in industrial/commercial areas	600mm
Carriageways and verges of sealed local roads	600mm
Carriageways and verges of major roads	750mm

The water mains shall have the minimum cover as specified at the future FSL. Where a water main may be subject to abnormal loading during construction, temporary (or permanent) measures shall be taken to ensure that the water main is not overloaded e.g. increasing depth of cover to 750 mm.

18. Valves shall have anti-clockwise rotation of the input spindle for closure and are to be resilient seated. Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings.

19. White coloured plastics identification covers shall be provided for the valve spindle caps.

20. Hydrants are to be provided to the principles for valve siting in section 4, additional principles to be considered shall include:

    (a) Site hydrants to facilitate flushing/swabbing of each section of water main.

    (b) A single hydrant adjacent to a stop valve shall be provided on the upstream side, wherever practicable.

    (c) A minimum of one hydrant is required between two stop valves.

    (d) Provide hydrants at regular spacing not exceeding 60m, to facilitate easy location by fire brigade personnel.

21. Hydrants on reticulation mains shall be located below-ground in a non-trafficable location i.e. within the nature strip, footway or road verge and clear of driveways.

22. Hydrants are to be spring hydrants attached to the main using a flanged hydrant riser or attached to the flange of an isolating valve assembly (anti-clockwise opening).

23. Hydrant outlet connections are to be the standard claw type that is suitable for the attachment of a hydrant standpipe. Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings.

24. Yellow coloured plastics identification covers shall be provided for the hydrant caps.

25. Marker posts, plates and other markers and marking systems for the location of appurtenances such as hydrants, valves, scours, flushing points shall be provided for operations and maintenance personnel and other authorised users such as fire fighters in accordance with the following requirements.

    (a) Retro-reflective (blue) pavement markers shall comply with AS 1906.3 and be fixed to the road surface with a high impact strength epoxy adhesive or bituminous pad (flexible pavement). The reflector shall be located 100 mm from the centre line of the road and on the same side as the hydrant.

    (b) As an aid to locating appurtenances, identification letters may be cast or ground into the face of the kerb

26. Work As Constructed drawings shall be provided and shall contain information specified in Council drafting requirements.

27. A separate metered water service is to be provided. Meters are generally installed by Council, alternatively, meters can be purchased from council and installed by a suitably qualified tradesperson in accordance with AS/NZS 3500.1. Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings

28. Tapping for the water service connection is to be undertake by using a ferrule and tapping band of a type approved by Council. Tapping bands and ferrules are generally installed by Council, alternatively, the fittings can be purchased from council and installed by a suitably qualified tradesperson Council endeavours to standardise on fittings so that maintenance and repair stocks can be minimised. It is important that developers obtain details of approved manufacturers prior to ordering pipe fittings

29. Water supply design to provide Desirable Minimum Static Pressure of 350kpa. Static Pressure shall not to exceed 500kpa at each house hold boundary.

30. 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.

31. Council approves the under road crossing by Directional Drilling Technique, given consideration of the following;

    (a)Where practicable, use a continuous pipe under the road carriageway. Where impracticable, limit jointing to a single joint beneath the road carriageway.

    (b) Secure the main in place using hardwood skids or a proprietary concentric support insulator system between the water main and the bored hole.

Sewer Conditions

32. All sewer works in connection with the application are to be of a size no less then 150mm to the service tie or buried vertical riser

33. Materials approved for use in sewers are:

- Vitrified Clay – VC,
- Reinforced Concrete - RC, see notes 1, 2 and 3,
- Ductile Iron - DICL, see notes 1, 2,
- Unplasticised Poly Vinyl Chloride – uPVC (Equivalent to class SEH, solid wall or approved structured wall), see note l,
- Glass Reinforced Plastics - GRP, see note 4 (Polyester Based),
- Polyethylene – HD-PE, see note 4.

Notes

- Not to be used within, nor up to 1 km downstream of industrial areas or hospitals.
- Concrete shall be made with Type "SR" sulphate resisting cement with a tri-calcium aluminate content not greater than 5%, or Type "LH" low heat cement. Concrete pipes intended for other than trunk sewers shall be manufactured with a minimum 10mm sacrificial layer on the inside of the pipe.
- Concrete pipes are not acceptable for DN150 and DN225 sewers.
- Subject to special conditions and only with written approval of Lithgow City Council.

Proposals for the use of other materials will be considered if supported by adequate technical and performance data

Class of pipes

- Sewerage pipes must be of adequate strength to meet overburden and traffic loads. Loads are to include loads created from likely construction and maintenance activities;
- VC pipes shall be Class 4 or stronger;
- Class 2 (X), 3 (Y) and 4 (Z) reinforced concrete pipes manufactured in accordance with the latest version of AS 4058 are acceptable if used in accordance with the requirements of AS 3725;
- uPVC pipes shall be of grade Sewer Extra Heavy (SEH) or of equivalent SN grade in accordance with AS/NZS 1260;
- Classes for Ductile Iron, Glass Reinforced Plastics, Polyethylene, or ABS pipes shall be approved by Lithgow City Council prior to use.

Notes

- Where load limits apply the locations shall be clearly designated on drawings.
- During the construction phase specific load provision shall be made for heavy construction equipment where required.
- Sewers shall be laid with a depth of cover, measured from the top of the pipe socket or inspection opening to the ground surface as per section 3.7 of *AS/NZS 3500.*2, unless the product specific Standard specifies, or the manufacturer or Engineer recommends, a greater depth.
- Inspect the trench floor on excavation for rock outcrops and soft and loose areas. Take appropriate action to ensure that the pipe or fitting or other appurtenance or structure will not be subject to differential settlement in the future.
- Where rock outcrops are present, trim the trench floor and fill with granular material to restore the design trench floor level limits.
- Compact all fill and all disturbed areas to not less than the density of the natural ground. Remove all debris and water before bedding sand is placed.

34. Bedding of Drains shall meet the requirements of section 5.*4 of AS/NZS 3500.2.*

35. A sewerage service is to be provided for each property; joint sewerage services are prohibited under the *Local Government (General) Regulation 2005, Part 6, Division 3, section 162.*

36. A service tie connecting to a sewer outside a residential block should generally be at right angles to the sewer. Where a service is a maintenance hole (manhole) or "dead-end", the service shall be at an angle between 90° and 180° from the downstream sewer to ensure a smooth flow of entry into the main line.

37. Where the sewer main is located outside of the residential block, the service tie shall extend inside the property boundary and an inspection shaft extended vertically upward to the surface ground level to form a shaft. The tie should generally be located on the sewer main line at 1.0 metre from the lowest corner of the property and extend 1 metre into the boundary.

38. Manholes are to be constructed consist with the requirements of the Water Services Association of Australia, Sewerage Code of Australia 2002.

39. Manholes shall be located along a sewer main at all changes in grade, level and direction and at the intersections with other mains or dead-ends. Manholes will not be accepted within the carriageway of public roads.

40. Manholes shall be constructed using 20 MPa concrete cast in-situ base. Either Type C or Type D cement shall be used in the concrete mix.

41. Chamber and covers shall be constructed from precast concrete components of a type authorised by Council meeting the requirements of section *4.8 of AS/NZS 3500.2*. Ductile Cast Iron in concrete surround covers are preferred by LCC and must comply with AS3996.

42. The standard internal diameter for manholes is 1050mm.

43. Where the depth of an inspection chambers/manhole exceeds 1.2m, rung type and individual rung ladders complying with AS 1657 and AS/NZS 4680 shall be installed.

44. All drainage work is subject to testing and shall comply with the with the requirements of *section 12 of AS/NZS 3500.2.*

45. Where a sewer main cannot be, or is not located in a dedicated public road reserve, it is to be located within an appropriately sized and registered easement and subject to the approval of the Council and the land Owner. An easement shall be obtained over any sewer main that is, or is to be, owned by the Council and which is located anywhere other than in a public road reserve or in land owned by the Council. The easement registration shall provide for rights of occupation and access by the Council and ensure suitable conditions for sewer main operation, maintenance and appropriate indemnities. The location of sewer mains within easements shall be in accordance with Council specifications.

Work as Executed Plans

46. Following the satisfactory completion of works, 'Works-As-Executed' (W.A.E.) plans prepared by a registered surveyor or professional engineer shall be submitted to Council's Group Manager of Operations. Such plan must be lodged prior to the release of the subdivision linen plan, or prior to occupation or use of the development.

    The W.A.E. plans shall be Engineering Drawings as modified, and shall include the following items:

- invert levels of all drainage and sewerage lines at entrance and exit of MH;
- location, class, size, and material of all pipes and subsoil lines;
- location and diameter of service conduits;
- location of stop valves, hydrants, water services;
- longitudinal sections for each sewer main;
- depth of sewer manholes;
- sewer man hole schedule numbered;
- location of sewer junctions measured from downstream of MH;
- minimum depth and cover, maximum depth, grade, chainage, inverts;
- storm water and interallotment drainage pits;
- location of water meters and serial number of meter installed in relation to the lot it is installed on site regarding details – finished surface levels at centre of front and rear boundaries;
- the location and level of any permanent survey marks.

Each Works-As-Executed plan must include certification by the Registered Surveyor responsible for the preparation of the plan.

Engineering Requirements

47. All development shall be constructed in accordance with Lithgow City Council's "Guidelines for Civil Engineering Design and Construction for Development".

48. A construction certificate shall be lodged with and issued by Council prior to any construction work proceeding on the subdivision.

49. The applicant shall provide Council with Work as Executed drawings (AutoCAD format) prior to the issue of the Subdivision Certificate. These drawings shall include all details listed in Section 1.10 of Council's 'Guidelines for Civil Engineering Design and Construction for Development'.

50. The applicant is to propose a street tree theme for the street, to be approved by Council, using trees that will grow about 20 metres in height that are suitable to the climate and soil characteristics of the street. A payment of $100 per street tree to Council, for provision of one street tree for all residential lots is required to fund the provision of trees after building work on the lots have been completed.

51. 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.

52. Prior to the release of the linen plan, the applicant shall submit options for road names to Council for consideration and approval in accordance with the guidelines for the naming of roads (Geographical Names Board of NSW).

53. Developer shall supply at his full cost aluminium street blade(s) minimum 150mm in width, with smooth white reflective background. Reflective material is to comply with AS 1906. The street blades shall be printed with approved street name in black non-reflective writing 100mm high on both sides of blade in block type writing, as per Lettering Serious C and shall also have Council logo's on the blade(s). A 75mm OD Galvanised iron post(s) and iron cap(s) with accompanying aluminium bracket(s) holes for fixture to galvanised iron post(s) and bolts shall also be supplied. Council can arrange for the manufacture and installation of above items, all works will be at the Developers cost.

54. A maintenance bond of 5% of final construction cost, to be paid to Council upon final inspection and approval of all civil works for each stage. 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. The maintenance period will start from the date of final inspection for a period of 24 months. At the conclusion of the 24-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 Council reserves the right to expend bond monies on rectification works.

55. Construction noise shall be in accordance with the 'Noise Control Guidelines' for construction noise standards. Hours of operation shall be permitted between 7 am – 6 pm Monday to Friday and 8am to 1 pm Saturdays. No heavy machinery work or usage shall be permitted on Sundays or Public Holidays.

56. Road base material compaction testing to be undertaken by a registered NATA Laboratory prior to sealing. Test results are to be submitted to Lithgow City Council's Operations Department for assessment prior to commencement of final surface sealing work.

57. Preparation of soil erosion and sedimentation control plan is to be submitted with the engineering design for Council approval. Such to address both short and long term management of all disturbed areas, and to specify methods and structures to be employed to minimise any impact.

58. Prior to and during the commencement of works the applicant shall erect soil erosion and sedimentation controls for the following purposes:
    - Control of soil erosion and sedimentation movement during the bulk earthwork stage.
    - Control of run-off and diversion to the 'sedimentation trap area' prior to the development of the land.
    - Method of stabilising the land from erosion and sediment movement after the completion of works, prior the development of the land.

59. The applicant is to comply with all reasonable requests from Council with regard to any complaints received during the construction works.

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

61. All roofwaters and associated water run-off shall be discharged to a Council road or directly into Councils stormwater system or defined natural watercourse. In the instance this cannot be achieved, Inter-allotment drainage shall be provided for individual allotments in accordance with Lithgow City Councils "Guidelines for Civil Engineering Design and Construction for Development" 2011 document.

62. The applicant shall provide integral kerb and guttering and one layback crossing for each new lot. Alternatively the kerb and guttering may be of roll top formation. A flush kerb is to be provided on the lower (South/East) side of Road 2, bordering the open space lot.

63. Road pavement widths and associated infrastructure is to be approved by Council prior to entering into final design. Such widths and infrastructure shall comply with Lithgow City Council's "Guidelines for Civil Engineering Design and Construction for Development" document.

Bio-Swale and Grassed Swale

64. Prior to the issuance of a subdivision certificate an Operational Environmental Management Plan (OEMP) is to be prepared in consultation with Water NSW and Council by a person with knowledge and experience in the preparation of such plans. In addition to the requirements of

Water NSW, the OEMP is to identify at what level of development the stormwater management structures are to be constructed. Any structures identified for construction after the issuance of a subdivision certificate will require the provision of construction and maintenance bonds.

Cycleway/Shared Path

65. Cycleway line marking is to be completed in accordance with all relevant technical standards. Specific details are to be finalised with the submission of Construction Certificate drawings. All line marking and signage associated with the Cycleway is to be borne by the developer.

Relocation of playground

66. Relocation of the existing playground in Council's open space reserve is to be completed in coordination with Lithgow Council's Recreation Supervisor and/or Director of Operations. Specific approval is to be sought prior to any alteration to the existing playground.

WATER NSW REQUIREMENTS

General

67. The works and lot layout of the subdivision shall be as specified in the Statement of Environmental Effects (undated) and shown on the Proposed Subdivision Plan (Plan No. 4989_CP; Sheets 1 to 5; dated 25-09-2017) both prepared by CEH Survey Pty Ltd. No revisions to lot layout works or staging of the subdivision that will impact on water quality, shall be permitted without the agreement of Water NSW.

Reason for the above condition- Water NSW has based its assessment under State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 on this version of the subdivision.

Subdivision Roads

68. The subdivision roads shall be located and constructed as shown on the Proposed Subdivision Plan prepared by CEH Survey Pty Ltd (Plan No. 4989_CP; Sheets 1 to 5; dated 25-09-2017), but with the following specifications and requirements:
    - be sealed and otherwise constructed in accordance with Council's engineering standards, and
    - runoff to be collected via a series of pits and pipes and directed to various water quality treatment measures detailed in the following conditions.

69. 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.

Waterway Crossings

70. The subdivision road crossing of drainage lines near proposed Lot 1 shall be appropriately sized pipe or box culverts consistent with the guidelines Environmental Practice Manual of Rural Sealed and Unsealed Roads (ARRB Transport Research Ltd, 2002). The road crossing as well as the proposed sewer crossing of the watercourse in the proposed public reserve lot shall also be consistent with any requirements of a Controlled Activity Approval under the *Water Management Act 2000* issued by the Department of Industry - Water.

Reason for the above conditions – 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

71. All stormwater management measures as specified in the Stormwater Management Report (revised October 2017) and Concept Services & Drainage Plan (prepared by CEH Survey Pty Ltd (Plan No. 4989_CP; Sheet 5 of 5; dated 05.10.2017), shall be incorporated in the final stormwater drainage plan to be approved by Council, including:
    - pits and pipes,
    - interallotment drainage,
    - vegetated swale,
    - bioretention swale.

72. A bioretention swale shall be designed as specified in the Stormwater Management Report (revised October 2017) and located as per the Concept Services & Drainage Plan prepared by CEH Survey Pty Ltd (Plan No. 4989_CP; Sheet 5 of 5; dated 5.10.2017) to capture and treat all runoff from subdivision roads and residential areas in the southern part of the subdivision. The bioretention swale shall incorporate the following specifications and requirements:
    - be located outside any swampy waterlogged area and above the 2% Annual Exceedance Probability (1 in 50 year) flood level
    - be designed consistent with Adoption Guidelines for Stormwater Biofiltration Systems Version 2 (Payne et al, 2015, Melbourne, CRC for Water Sensitive Cities)
    - a minimum combined surface area of 75 square metres and a minimum combined filter area of 60 square metres
    - an extended detention depth of 50 mm
    - a filter depth (excluding transition layers) of 300 mm above the underdrain
    - a filter media consisting of a clean sandy loam with a certified median particle diameter of 0.5 mm, a maximum orthophosphate concentration of 55 mg/kg and a maximum total nitrogen concentration of 800 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 all discharge and overflow to neighbouring land via an armoured discharge point such that discharge does not cause erosion
    - be accessible from a road or driveway by machinery to facilitate cleaning, monitoring and maintenance
    - ensure the discharge outlets are consistent with any requirements of any Controlled Activity Approval under the Water Management Act (2000) from the Department of Industry - Water
    - be permanently protected from vehicular damage by bollards, fences, castellated kerbs or similar structures, with a sign to be erected to advise of its nature and purpose in water quality management, and
    - be protected by sediment and erosion control measures during any construction and post-construction phase until the ground surface is revegetated or stabilised.

73. No changes to stormwater treatment and management that will impact on water quality, shall be permitted without the agreement of Water NSW.

74. A suitably qualified stormwater consultant or engineer shall certify in writing to Water NSW and Council **prior to issuance of any Subdivision Certificate** that all stormwater management structures have been installed as per these conditions of consent and are in a functional state.

75. An Operational Environmental Management Plan (OEMP) shall be prepared in consultation with Water NSW and Council 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** and provided to Council. The OEMP shall include but not be limited to:

- details on the location, description and function of stormwater management structures such as pits, pipes, swale, bioretention swale, 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.

Reason for the above conditions – 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.

Construction Activities

76. A Soil and Water Management Plan shall be prepared for all works proposed or required as part of the subdivision including the subdivision roads by a person with knowledge and experience in the preparation of such plans. The Plan shall meet the requirements outlined in Chapter 2 of NSW Landcom's Soils and Construction: Managing Urban Stormwater (2004) manual - the "Blue Book". The Plan shall be prepared in consultation with Water NSW **prior to construction commencing** and shall be to the satisfaction of Council. Such works shall also be consistent with any requirements for Controlled Activities Approval under the *Water Management Act, 2000* issued by the Department of Industry - Water.

77. The Plan shall be implemented and effective erosion and sediment controls shall be installed prior to any construction activity including earthworks for the subdivision roads. The controls shall prevent sediment or polluted water leaving the construction site or entering any natural drainage lines or stormwater drain and shall be regularly maintained and retained until works have been completed and groundcover established.

Reason for the above conditions – 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.

ADVISORY NOTES

ENDEAVOUR ENERGY

Network Capacity/Connection

AN1. The site plan from Endeavour Energy's G/Net master facility model shows the site is part of a 'Work Polygons', indicating enquiries and applications for proposed contestable works projects with Endeavour Energy's Network Connections Branch for electricity supply to the development for urban residential subdivision (Endeavour Energy reference URS7153). As such, Endeavour Energy's Network Connections Branch are managing the conditions of supply with the proponent and their authorised service provider (ASP). However there is no 'Work Polygon' specifically for the site and the applicant will need to contact Endeavour Energy's Network Connections Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 8am - 5:30pm if this development application:

- Includes any contestable works projects that are outside of the existing approved /certified works.

- Results in an electricity load that is outside of the existing Supply/Connection Offer requiring the incorporation of the additional load for consideration. This is due to load being based on a desktop assessment using an After Diversity Maximum Demand (AMMD) where demand is aggregated over a large number of customers providing an ADMD for the site / per lot. Depending on the actual development proposed for the site, the ADMD provided may not be sufficient.

Vegetation Management

AN2. The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure. Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) and even with underground cables, be installed with a root barrier around the root ball of the plant. Landscaping that interferes with electricity infrastructure may become a potential safety risk, cause of bush fire, restrict access or result in the interruption of supply. Such landscaping may be subject to Endeavour Energy's Vegetation Management program and/or the provisions of the *Electricity Supply Act 1995* (NSW) Section 48 'Interference with electricity works by trees' by which under certain circumstances the cost of carrying out such work may be recovered.

Dial before You Dig

AN3. Before commencing any underground activity the applicant is required to obtain advice from the ***Dial before You Dig*** **1100** service in accordance with the requirements of the *Electricity Supply Act 1995* (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

Public Safety

AN4. Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. Ordinary persons must maintain a minimum safe approach distance to live exposed conductors of 3.0 metres to all voltages up to and including 132,000 volts / 132 kV high voltage. Endeavour Energy's public safety training resources, which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely are available via Endeavour Energy's website via the following link:

http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw+homepage/community nav/safety/safety+brochures

Emergency Contact

AN5. In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days.