

Engineering Referral Response

Application Number:	DA2019/0263
To:	Rebecca Englund
Land to be developed (Address):	Lot 3 DP 1115877 , 53 B Warriewood Road WARRIEWOOD NSW 2102 Lot 3 DP 942319 , 53 Warriewood Road WARRIEWOOD NSW 2102

Reasons for referral

This application seeks consent for the following:

- New Dwellings or
- Applications that require OSD where additional impervious area exceeds 50m² or
- Alterations to existing or new driveways or
- Where proposals affect or are adjacent to Council drainage infrastructure incl. watercourses and drainage channels or
- Torrens, Stratum and Community Title Subdivisions or
- All new Commercial and Industrial and RFB Development with the exception of signage or
- Works/uses in flood affected areas

And as such, Council's development engineers are required to consider the likely impacts on drainage regimes.

Officer comments

Development Engineering Comments 7/8/19

No objections subject to engineering conditions.

The dogleg in the proposed upgraded Stormwater line is to be removed and the line from Warriewood Road to Creek outlet is to be adjacent to the eastern side boundary . This requirement and previous other drainage requirements have been included in a deferred commencement condition .

Revised Development Engineering comments 12/7/19

Stormwater drainage comments reconstruction of Council's drainage line.

- 1) The Lintel width of Pit 2-1 is to be increased in size to 3m .
- 2) The dogleg in the Council drainage line is to be removed between Pits 2-7 and Pit 2-9 and pipe realigned so the line and any future easement over the line is parallel to the side boundary.

- 3) An overland flow is to be provided above the Council stormwater line from Lorikeet Grove to the head wall in Narrabeen creek. This is to cater for any pit or pipe blockages.
- 4) The proposed butterfly pit in the existing Lorikeet Grove road pavement is to be removed and replaced with an offset inlet pit,. This pit is to be installed 1 m clear of the proposed Pheasant Place vehicle access.

General comments.

- 5) The access driveway to the GPT is to be widened to allow a service vehicle to park adjacent to the GPT.
- 6) The proposed vehicle crossing to Lot 17 is to be removed and access to be via driveway No1.

Comments proposed road design.

Pheasant Place

The latest version of the WVRMP requires an access road to be 7.5m wide which allows parking on both sides of the road, a 1.5m wide footpath, and a road reserve width of 12.5m. The road reserve width as detailed on the engineering plans is 11.2m.

Waste Vehicle Access

The turning area in Pheasant Place must be designed to cater for safe movements by a waste collection vehicle minimum 9.7m in length, to accommodate the existing vehicle type for all turning movements.

Turning path No 01 details the Pheasant Place kerb to kerb width of 7.2m which is not consistent with the Cross section B of the engineering plans . Parking restrictions are to be detailed on the plans within the affected Garbage Truck turn path area.

Development Engineering comments 10/7/19

Stormwater drainage comments reconstruction of Councils drainage line.

- 1) The Lintel width of Pit 2-1 is to be increased in size to 3m .
- 2) The dogleg in the Council drainage line is to be removed between Pits 2-7 and Pit 2-9 and pipe realigned so the line and any future easement over the line is parallel to the side boundary.
- 3) An overland flow is to be provided above the Council stormwater line from Lorikeet Grove to the head wall in Narrabeen creek. This is to cater for any pit or pipe blockages.
- 4) The proposed butterfly pit in the existing Lorikeet Grove road pavement is to be removed and replaced with an offset inlet pit,. This pit is to be installed 1 m clear of the proposed Pheasant Place vehicle access.

General comments.

- 5) The access driveway to the GPT is to be widened to allow a service vehicle to park adjacent to the GPT.
- 6) The proposed vehicle crossing to Lot 17 is to be removed and access to be via driveway No1.

Traffic Network Comments proposed road design.

Warriewood Road

- The frontage to Warriewood Road requires a half road construction.
- Kerb and Guttering (vertical faced kerb only will be permitted) with the face of the kerb located 10.9m from face of existing kerb on the northern side.
- Plans need to show a cross-section where the centreline of the road is located 5.1m from the existing kerb on the northern side, as well as a proposed 3.7m traffic lane, and 2.1m indented parking

bay.

- As the traffic lane is 3.7m which is reduced from the required 4.2m for a sub-arterial road, the shared path is to be increased to 2.5m shared path and is to be located directly adjacent to kerb and fully within the Public Road Reserve.
- Shared driveways should be considered to maximise on-street parking, within the indented parking bay

The approved conditions for N0330/14 - 53c Warriewood Road, required indented parking bays on Warriewood Road and a 2.5m wide shared path.

Pheasant Place

The latest version of the WVRMP requires an access road to be 7.5m wide which allows parking on both sides of the road, a 1.5m wide footpath, and a road reserve width of 12.5m.

The adjacent development at 53c Warriewood Road was approved with a 7.2m road reserve, which incorporates a 6m wide road and 1.2m footpath.

Note that the approved plans for 53c show that the entire kerb lies within the labelled carriageway so the effective road width would be 5.7m. The carriageway is the distance between kerb faces.

A total road reserve width of 10m is proposed for this development with the required 1.5m road widening and 1.2m footpath accommodated within the remaining 2.8m road reserve.

The 1.5m footpath is required, as approved conditions in N0330/14 - 53c Warriewood Road, specify that the 1.2m footpath provided on the eastern side will be removed and reinstated with turf when the internal road and footpath in 53, 53A, and 53B has been completed.

If the portion of Pheasant Place for 53c was constructed according to the plans, and a 6m wide road is to be provided between kerbs, the remaining area for the footpath would be 1m.

Services are to be contained within the road reserve which would be restricted by the proposal.

Shared driveways should be considered to maximise on-street parking. Based on the swept paths provided this should be considered for Lot 10 and 11 to allow better access for waste collection vehicles approaching the turning area.

It is noted that some on-street parking will need to be removed and parking restrictions would be required.

Waste Vehicle Access

The turning area in Pheasant Place must be designed to cater for safe movements by a waste collection vehicle minimum 9.7m in length, to accommodate the existing vehicle type for all turning movements.

Turning path No 01 details the Pheasant Place kerb to kerb width of 7.2m which is not consistent with the Cross section B. No parking is to be also detailed within the affected Garbage Truck turn path area.

The current proposal therefore cannot be supported due to the issues raised regarding the road design in accordance with the WVRMP. Any changes to accommodate additional widths would more than likely impact other areas of the development.

Previous comments

The stormwater drainage plans which detail the provision of treatment of upstream catchment flows, site storm water drainage and the provision of on site stormwater detention are not supported for the following reasons;

- It appears that the proposed kerb alignment within Warriewood Road does not match into the existing. An appropriately designed kerb transition should be provided and extend past the temporary accessway. The v- grate Pit 2/2 is to be deleted and upgraded to a letter box type pit and consideration should be given to inlet capacity and blockage factor.
- Stormwater flows within Warriewood Road that bypass existing Pit 2/1 are considered unsafe and a hazard to both pedestrians and vehicles. Accordingly the upstream pipe flows up to the 1 in 100 year ARI event are to be piped across Warriewood Road to an upgraded downstream drainage system between (Pit 2/1 and 2/10), to reduce flows in Warriewood Road to safe levels. Additionally bolt down lids are not to be installed and the system is to feature grated inlet pits for future council maintenance and inspections.
- It is considered that the proposed retaining wall on the western boundary of the site may impede upstream overland sheet flows.
- The proposed surrogate sag within the Lorikeet Grove extension is considered unsatisfactory. The existing sag within Lorikeet Grove should be maintained and the proposed road drainage within Lorikeet Grove redesigned/regraded to suit.
- The existing sag pit on the northern side of Lorikeet Grove is proposed to be modified to a butterfly

grate. This impact has not been considered or modelled with respect to inlet capacity or blockage factor.

- The access to the proposed GPT conflicts with the lintel for proposed Pit 1/16. The access should be amended to be a minimum 1m clear of any stormwater lintel.
- Section C of the proposed Basin indicates that a 30mm freeboard is proposed over the emergency weir, which is considered inadequate.
- The proposed ungraded Council stormwater line (refer to section A) needs to be a minimum of 1m from any proposed retaining wall footings. Easements widths are to comply with Councils DCP.

Referral Body Recommendation

Recommended for approval, subject to conditions

Refusal comments

Recommended Engineering Conditions:

DEFERRED COMMENCEMENT CONDITIONS

Stormwater Drainage Design

The Craig and Rhodes road and drainage plan sheet (ref 076-18C -DA-102) is to be amended to delete the dog leg in the stormwater drainage line between Pit 2-7 and Pit 2-9. The stormwater line (Pits 2-7 & 2-9) is to be positioned perpendicular and adjacent to the eastern side boundary. Additionally the plans are to be amended as follows:

- 1) The Lintel width of Pit 2-1 is to be increased in size to 3m.
- 2) An overland flow is to be provided above the Council stormwater line from Lorikeet Grove to the head wall in Narrabeen creek. This is to cater for any pit or pipe blockages.
- 3) The proposed butterfly pit in the existing Lorikeet Grove road pavement is to be removed and replaced with an offset inlet pit. This pit is to be installed 1 m clear of the proposed Pheasant Place vehicle access.
- 4) The access driveway to the Gross Pollutant Trap (GPT) is to be widened to allow a service vehicle to park adjacent to the GPT.

Amended road and drainage plans indicating all above engineering details have been incorporated into an amended set of plans must be submitted to Council for written approval.

Reason: To ensure adequate provision is made for stormwater drainage from the site in a proper manner that protects adjoining properties and also is in accordance with Council's Auspec design specification

FEES / CHARGES / CONTRIBUTIONS

Construction, Excavation and Associated Works Bond (Road)

A Bond of \$250,000 as security against any damage or failure to complete the construction of road pavement/shoulder/footpath construction works and stormwater drainage works in Warriewood Road and Lorikeet Place required as part of this consent.

Reason: Protection of Council's Infrastructure

Construction, Excavation and Associated Works Bond (Drainage)

A Bond of \$300,000 as security against any damage or failure to complete the construction of Stormwater drainage line and associated pits from the northern kerb side of Warriewood Road works to the proposed Headwall Outlet near the creek. (Denoted from Pit 2-1 to headwall 2-11 as detailed on the recent amended Craig and Rhodes civil and subdivision works plans.)

Reason: Protection of Council's Infrastructure

Construction, Excavation and Associated Works Bond (Maintenance for civil works)

The developer/applicant must lodge with Council a Maintenance Bond of \$150,000 for the construction of subdivision roads and stormwater drainage works. The Maintenance Bond will only be refunded on completion of the six month Maintenance Period, if work has been completed in accordance with the approved plans and to the satisfaction of Council. The maintenance bond is to be paid prior to Council issuing practical completion and may be exchanged for the works bond.

Reason: To ensure adequate protection of Council infrastructure

CONDITIONS TO BE SATISFIED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

Geotechnical Report Recommendations have been Incorporated into Designs and Structural Plans

The recommendations of the risk assessment required to manage the hazards as identified in the Geotechnical Report prepared by Geotechnique dated 12 March 2019 are to be incorporated into the subdivision construction plans. Prior to issue of the Construction Certificate, Form 2 of the Geotechnical Risk Management Policy for Pittwater (Appendix 5 of P21 DCP) is to be completed and submitted to the Accredited Certifier. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate.

Reason: To ensure geotechnical risk is mitigated appropriately.

On-site Stormwater Detention Compliance

Certification of Drainage plans detailing the provision of the On-site Stormwater Detention system only in accordance with Northern Beaches Council's Warriewood Valley Urban Release - Water management specification, PITTWATER DCP21, and the concept drawing by Craig and Rhodes, drawing number 076-18C-DA-0751 B, 752B, 753B. Details demonstrating compliance are to be submitted to the Principal Certifying Authority for approval prior to the issue of the Construction Certificate

Reason: To ensure engineering works are constructed in accordance with relevant standards and Council's specification.

Sydney Water (Fire Hydrant System)

Subdivisions involving the creation of private roads are to be serviced with fire hydrant systems to ensure that coverage of no less than 90 metres is maintained to all areas of the development.

(Note: The fire hydrants are to be installed in accordance with all relevant Australian Standards and the requirements of the Sydney Water Authority and the NSW Fire Brigades.)

Details demonstrating compliance are to be submitted to the accredited certifier prior to the issue of the Construction Certificate.

Reason: NSW Fire Brigades Requirement.

Submission Roads Act Application for Civil Works in the Public Road

An Application for Works to be approved within Council Roadway in Warriewood Road and the proposed Lorikeet Drive extension including engineering plans is to be submitted to Council for approval under the provisions of Sections 138 and 139 of the Roads Act 1993. The application is to include four (4) copies of Civil Engineering plans for the design of the retaining walls through the nature strip and driveway crossing which are to be generally in accordance with the Development Application and Council's specification for engineering works - AUS-SPEC #1, Austroads, The Warriewood Valley Roads Masterplan, Pittwater 21 DCP and Council's standard engineering details. The plan shall be prepared by a qualified civil/ structural engineer.

The engineering plans and specifications for works to the full length of Warriewood Road frontage of the development site are to include the following:

- 1) Road shoulder and road pavement construction, including pavement design and treatments up to the road centre line (2 x 106 ESA pavement design criteria);
- 2) Kerb and Guttering (vertical faced kerb only will be permitted);
- 3) Indented parking bays in accordance with the requirements of the Warriewood Valley Roads Masterplan;
- 4) Associated road and drainage for Warriewood Road;
- 5) Footpath/cycleways 2.5m wide on Warriewood Road;
- 6) Street lighting and street sign posting;
- 7) Landscaping

The engineering plans and specifications for works to the full length of Lorikeet Grove within the development site are to include the following:

- 8) Road shoulder and road pavement construction, including pavement design and treatments up to the road centre line (6 x 105 ESA pavement design criteria);
- 9) Kerb and Guttering (vertical faced kerb only will be permitted);
- 10) Lorikeet Grove drainage system (public system) which will require to be piped to Narrabeen Creek with an associated outlet headwall.
- 11) Pedestrian facilities
- 12) Street lighting and street name sign posting;
- 13) Landscaping and Driveways
- 14) Footpath/cycleway 2.5m wide

The plans must achieve a road design and landscaped effect consistent with the Warriewood Valley Landscape Masterplan and Design Guidelines (Public Domain). The engineering design and plans for

road and drainage works must be certified as meeting the requirements outlined above by a suitably qualified and experienced Civil Engineer who is NPER accredited by the Institution of Engineers (Australia) prior to submission to Council.

The reconstruction of the existing road pavement of Warriewood Road for the full width of the site (out to the centerline of the road) will be deemed to have been satisfied if a suitably qualified geotechnical engineer provides certification to Council that the existing road pavement satisfies the requirement of the WVRMP for the pavement to meet the ESA pavement design criteria of 2 x 106.

The Section 138 Roads Act approval is to be issued by Council prior to the issue of the Construction Certificate. A fee associated with the assessment and approval of the application is to be in accordance with Council's Fee and Charges.

Reason: To provide public and private safety.

Utilities Services

Prior to the issue of the Construction Certificate, evidence is to be submitted to the Principal Certifying Authority that

- (a) A letter from the utility provider confirming that satisfactory arrangements have been made for the approved development have been made; and
- (b) Evidence that notification has been received from a utility provider, requirements for the development can be provided.

Reason: To ensure that service have been provided as required by this Consent

Retaining wall

A retaining wall design and certificate shall be prepared by an qualified Structural Engineer, including but not limited to all reinforced concrete, structural steel support construction, sub-soil drainage line and any proposed retaining walls; must be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate

Reason: Public and Private Safety

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO ANY COMMENCEMENT

Public Liability Insurance - Works on Public Land

Any person or contractor undertaking works on public land must take out Public Risk Insurance with a minimum cover of \$20 million in relation to the occupation of, and approved works within Council's road reserve or public land, as approved in this consent. The Policy is to note, and provide protection for Northern Beaches Council, as an interested party and a copy of the Policy must be submitted to Council prior to commencement of the works. The Policy must be valid for the entire period that the works are being undertaken on public land.

Reason: To ensure the community is protected from the cost of any claim for damages arising from works on public land.

Pre-Construction Dilapidation Survey

The applicant must prepare and submit a pre-commencement dilapidation report providing an accurate record of the existing condition of adjoining public and private properties and public infrastructure

(including roads, gutter, footpaths, etc). A copy of the report must be provided to Council, any other owners of public infrastructure and the owners of adjoining and affected private properties.

The pre-construction / demolition dilapidation report must be submitted to Council and the Certifying Authority prior to the issue of the Construction Certificate.

Reason: Protection of Council's Infrastructure

CONDITIONS TO BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK

Road Reserve

The public footways and roadways adjacent to the site shall be maintained in a safe condition at all times during the course of the work.

Reason: Public Safety.

Progress Certification (Road & Subdivision)

Written compliance certification is to be provided by a suitably qualified engineer upon completion and/or as and when requested by the Principal Certifying Authority for the following stages of works.(a) Silt and sediment control facilities

- (b) Laying of stormwater pipes and construction of pits
- (c) Proof Roll - Subgrade, Subbase, Base, in accordance with AUSPEC Standard
- (d) Sub-grade trimmed and compacted **
- (e) Base-course laid and compacted **
- (f) Kerb and gutter construction
- (g) Pavement (Asphalt Concrete roads and concrete footpaths)
- (h) Landscaping and vegetation
- (i) Clean-up of site, and of adjoining Council roadway and drainage system. (**To be tested by a recognised N.A.T.A. approved laboratory certifying compaction is in accordance with the approved road pavement design). Details demonstrating compliance are to be submitted to the Principal Certifying Authority.
- (j) All layers of the road formation are to be proof rolled to Council's satisfaction.

Reason: To ensure compliance of civil works with Council's specification for engineering works

Notification of Inspections

Council's Development Engineer is to be given 48 hours notice when the works reach the following stages:

- (a) Installation of Silt and Sediment control devices
- (b) Prior to backfilling of pipelines
- (c) Prior to pouring of stormwater gully pits
- (d) Prior to pouring of kerb and gutter
- (e) Subgrade level /subbase/ basecourse level (proof roll to be conducted by minimum size 8-10 tonne smooth drum roller)
- (f) Sealing road pavement

NOTE: Any inspections carried out by Council do not imply Council approval or acceptance of the work, and do not relieve the developer/applicant from the requirement to provide an engineer's certification. Council approval or acceptance of any stage of the work must be obtained in writing, and will only be issued after completion of the work to the satisfaction of Council and receipt of the required certification

Reason: To ensure new Council infrastructure is constructed to Council's requirements.

Traffic Control During Road Works

Lighting, fencing, traffic control and advanced warning signs shall be provided for the protection of the works and for the safety and convenience of the public and others in accordance with RMS Traffic Control At Work Sites Manual (<http://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/technical-manuals/tcws-version-4/tcwsv4i2.pdf>) and to the satisfaction of the Principal Certifying Authority. Traffic movement in both directions on public roads, and vehicular access to private properties is to be maintained at all times during the works

Reason: Public Safety

Maintenance of Road Reserve

The public footways and roadways adjacent to the site shall be maintained in a safe condition at all times during the course of the work.

Reason: Public Safety.

No Fill in Native Vegetation Areas

No fill is to be introduced in the area of native vegetation or habitat remaining on the site.

Reason: To protect native vegetation

Safety Fencing of Excavation and/or demolition

The site must be fenced throughout demolition and/or excavation and must comply with WorkCover New South Wales requirements and be a minimum of 1.8m in height.

Reason: To ensure private and public safety

Undergrounding of utility services

All utility services including overhead power supply and communication cables located in the adjacent road verge and those servicing the development are to be placed and/or relocated underground for the total frontage of the development site to any public road at the full cost to the developer

Reason: To meet the objectives of the Warriewood Valley Road Master plan and Landscape Design Requirements.

Maintenance of Sediment

Sedimentation and erosion controls are to be effectively maintained at all times during the course of construction and shall not be removed until the site has been stabilised or landscaped to the Principal Certifying Authority's satisfaction.

Reason: To ensure sediment controls are effective

waste disposal

All waste dockets and receipts regarding demolition, excavation and construction waste are to be retained on site to confirm which facility received the material for recycling or disposal.

Reason: To ensure waste disposal complies with NSW legislation .

Site Entry Access way

An all-weather access way at the front of the property consisting of 50-75mm aggregate or similar material at a minimum thickness of 200mm and 15metres long laid over geotechnical fabric is to be constructed prior to commencement of works and maintenance over the works period.

Reason: To reduce sediment being taken offsite

Cleaning of Vehicles Leaving Site

Adequate measures shall be undertaken to remove clay from vehicles leaving the site so as to maintain public roads in a clean condition.

Reason: To reduce sediment being taken offsite

Noise and Vibration

The construction of the development and preparation of the site, including operation of vehicles, must be conducted so as to avoid unreasonable noise or vibration and not cause interference to adjoining or nearby occupations

Reason: To ensure the amenity of the surrounding area for residents

Protection of Adjoining Property - Excavation

Where excavations extend below the level of the base of the footings of a building on an adjoining allotment of land, the person causing the excavation must preserve and protect the building from damage and, if necessary, underpin and support the adjoining building in an approved manner.

Reason: To ensure private and public safety

Site Management Sign

A clearly legible Site Management Sign is to be erected and maintained throughout the course of the works. The sign is to be centrally located on the main street frontage of the site and is to clearly state in legible lettering the following:

- The builder's name, builder's telephone contact number both during work hours and after hours
- That no works are to be carried out in Council's Road Reserve without prior application and approval of a Road Opening Permit from Council.
- That a Road Opening Permit issued by Council must be obtained for any road openings or excavation within Council's Road Reserve associated with development of the site, including stormwater drainage, water, sewer, electricity, gas and communication connections.
- During the course of the road opening works the Road Opening Permit must be visibly displayed at the site.
- That no skip bins or materials are to be stored on Council's Road Reserve.
- That the contact number for Northern Beaches Council for permits is 9970 1111.

Reason: To ensure that contractors on site are aware of council permits that need to be obtained and contact for the builder/foreman.

Site filling - Virgin Excavated Natural Material (VENM)

Where site fill material is necessary, fill materials must:

1. be Virgin Excavated Natural Material (VENM) only, as defined in: The Protection of the Environment Operations Act 1997
2. be free of slag, hazardous, contaminated, putrescibles, toxic or radioactive excavated material and soil, rock or similar material. Putrescibles and non-putrescibles solid waste (including demolition material) is not permitted.
3. Certification is to be provided to the Principal Certifying Authority by a N.A.T.A. approved laboratory.

Reason: To ensure protection of the natural environment

ON-GOING CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

Road opening permits

A Road Opening Permit, issued by Council, must be obtained for any road openings, or excavation within Council's Road Reserve associated with the development on the site, including stormwater drainage, water, sewer, electricity, gas and communication connections. During the course of the road opening works the Road Opening Permit must be visibly displayed at the site. 13. No skip bins or materials are to

Reason: To comply with the Roads Act 1993 (DACENGOG1)

CONDITIONS THAT MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF ANY STRATA SUBDIVISION OR SUBDIVISION CERTIFICATE

Positive Covenant for Drainage Structures

A positive covenant (under the provisions of Section 88B of the Conveyancing Act) is to be created on the final plan of subdivision and accompanying 88B instrument, requiring the proprietor of the land to maintain the water quality management and on site detention system including GPTs in accordance with the standard requirements of Council. The terms of the positive covenant are to be prepared to Council's standard requirements, which are available from Northern Beaches Council. Northern Beaches Council shall be nominated as the sole authority empowered to release, vary or modify such covenant. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure ongoing maintenance of the water quality and on-site stormwater detention system

Provision of Services for Subdivision

The applicant is to ensure all services including, water, electricity, telephone and gas are provided, located and certified by a registered surveyor on a copy of the final plan. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure that utility services have been provided to the newly created lots

Authorisation of Legal Documentation Required for Onsite Detention

The original completed request forms (NSW Land Registry standard forms 13PC and/or 13RPA) must be submitted to Council, with a copy of the Works-as-Executed plan (details overdrawn on a copy of the approved drainage plan), hydraulic engineers certification and Compliance Certificate issued by an Accredited Certifier in Civil Works. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any interim / final Occupation Certificate.

Reason: To create encumbrances on the land

Right of Carriageway

A right of carriageway (under the provisions of Section 88B of the Conveyancing Act) is to be created on the final plan of subdivision and accompanying 88B instrument to include all vehicular access and manoeuvring areas. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: Council's subdivision standards and the statutory requirements of the Conveyancing Act 1919

Restriction as to User (Drainage Structures)

A restriction as to user shall be created on the title over the on site detention and water quality management systems, restricting any alteration to the levels and/or any construction on the land. The terms of such restriction, (available from Northern Beaches Council), are to be prepared by a registered surveyor to Northern Beaches Council's standard requirements at the applicant's expense. Northern Beaches Council shall be nominated as a party to release, vary or modify such restriction. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure no modification of the on site detention and water quality management systems without Council's approval

Community Management Statement Bi Laws

The Community Management Statement is to incorporate specific Bi Laws that reflect the requirements of the Positive Covenant and Restriction of use for the water management systems (OSD, Bioretention Basin and Gross Pollutant Trap). Wording is to be prepared by a surveyor/solicitor, with terms acceptable to Council. Details demonstrating compliance are to be submitted to the Council prior to the issue of the Subdivision Certificate.

Reason: To ensure compliance with water management strategy for the subdivision.

Restriction as to User (Drainage Structures)

A restriction as to user (under the provisions of Section 88B of the Conveyancing Act) is to be created on the final plan of subdivision and accompanying 88B instrument over the bio retention /on site detention basin (Water Management System), restricting any alteration or additions to the system. The terms of such restriction are to be prepared to Council's requirements, which are available from Northern Beaches Council (NBC). NBC shall be nominated as the sole authority empowered to release, vary or modify such restriction.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure no modification of the water quality/detention basin facilities without Council's approval. (DACENH06)

Council Dedications

All allotments proposed as Council roads and or reserves are to be dedicated to Warringah Council. The subdivision certificate and a certificate of title are to be submitted to Council within one month after registration of the subdivision plan.

Reason: Statutory requirement of the Conveyancing Act 1919

Certification of On-site Detention System (New Subdivision)

A Compliance Certificate is to be submitted by a qualified experienced practicing Civil Engineer with corporate membership of the Institute of Engineers Australia (M.I.E), or who is eligible to become a Corporate member and has appropriate experience and competence in the related field confirming to the satisfaction of the Principal Certifying Authority that the on-site stormwater detention has been constructed in accordance with the plans nominated on the Development Consent and relevant conditions of Development Consent. The Subdivision Certificate will not be released until this certification has been submitted and the Principal Certifying Authority has confirmed that this condition has been satisfied.

Reason: To ensure the On-site Detention System has been built to the appropriate standard

Stormwater Drainage and Utility Services Plan

A plan of subdivision identifying the location of water, gas, telephone, electricity and stormwater drainage in relation to boundaries and/or relevant easements, prepared by a registered surveyor is to be submitted to Council. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure that services have been provided with appropriate easements as required by the Conveyancing Act 1919

Survey Plan - Construction Identification

A declaration by a registered surveyor shall be provided to Council as evidence that all construction has been effected within the appropriate property, easement boundaries and rights of carriageway. This shall be in the form of a copy of the final subdivision or easement plan, with the distances from the boundaries to the edges of these structures endorsed in red thereon and signed by the surveyor. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure accurate location of buildings, access and services

Sydney Water Compliance Certification

A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water Corporation. Application must be made through an authorised Water Servicing Co-ordinator. Please refer to the Building Developing and Plumbing section of the web site www.sydneywater.com.au <<http://www.sydneywater.com.au>> then refer to "Water Servicing Coordinator" under "Developing Your Land" or telephone 13 20 92 for assistance. Following application a "Notice of Requirements" will advise of water and sewer infrastructure to be built and charges to be paid. Please make early contact with the Co-ordinator, since building of water/sewer infrastructure can be time consuming and may impact on other services and building, driveway or landscape design. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure compliance with the statutory requirements of Sydney Water

Certification of Utility Services

The provision of all utilities/services and/or street lighting are to be certified by the relevant authority(s) and/or authorised contractor. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure services have been provided in accordance with the relevant authorities requirements

Easement for Drainage

An easement for drainage (under the provisions of Section 88B of the Conveyancing Act) is to be created on the final plan of subdivision the accompanying 88B instrument to ensure all drainage infrastructure is located within the appropriate easement(s). Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: Council's Subdivision standards and statutory requirements of the Conveyancing Act 1919

Easement to Drain Water - Council stormwater drainage line

An easement to drain water 3m wide shall be created in favour of Council over the proposed upgraded Council drainage line which runs from Warriewood Road to the Creek outlet. The easement is to be detailed on the final plan of subdivision and contain wording in the 88B instrument for maintenance in accordance with Councils requirements.. Details demonstrating compliance are to be submitted to the

Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To identify flood affected areas on the property title

Easement for Services

An easement for services (under the provisions of Section 88B of the Conveyancing Act) is to be created on the final plan of subdivision and the accompanying 88B instrument to ensure all utility services are located within the appropriate easement(s). Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate

Reason: Council's Subdivision standards and statutory requirements of the Conveyancing Act 1919

On-Site Stormwater Detention Compliance Certification

Prior to issue of a subdivision certificate the on-site stormwater detention (OSD) system must be certified by a consulting engineer and include a "works as executed" (WAE) drawing certified by a registered surveyor and overdrawn in red on a copy of the approved OSD system plans. Additionally a Compliance Certificate is to be issued by an Accredited Certifier in Civil Works registered with the Institute of Engineers Australia, stating that the works are in accordance with the approved plans.

Reason: To ensure stormwater disposal is constructed to standard specifications AUSPEC

Adjustment and construction of all public utilities.

The adjustment and construction of all public utilities, services and drainage systems, and the creation of appropriate easements are to be at the full cost of the developer, including:

- Electrical and telecommunications for the proposed lots, which are to be provided underground. The location of any trenching and if required, pad mounted substation(s), is to take into account and future/proposed landscaping in the public domain.
- Street lighting facilities on Lorikeet Grove, the existing public road reserve frontage on Warriewood Road and internally which are to be provided in accordance with the requirements of Ausgrid.
- All utility services including overhead power supply and communication cables located in the adjacent Public Road reserve verge of Warriewood Road which are to be placed and/or relocated underground for the full length of the public road reserve frontages of the development site at the full cost to the developer. 23.

Certification that the above requirements have been completed is to be submitted to Council prior to the issue of the subdivision certificate.

Reason: To ensure provision of utility services meets Council and the service authorities standards and specifications.

Subdivision Certificate Application

Prior to the issue of the Subdivision Certificate, a completed Subdivision Certificate form, a final plan of subdivision prepared in accordance with the requirements of the Conveyancing Act 1919 are to be submitted to Council. Nine copies of the final plan of subdivision are to be submitted. All plans of survey are to show connections to at least two Survey Co-ordination Permanent Marks. The fee payable is to be in accordance with Council's fees and charges

Reason: Statutory requirement of the Conveyancing Act 1919

Restoration of damaged Council infrastructure

Restoration of all damaged public infrastructure caused as a result of the development to Council's satisfaction. Council's written approval that all restorations have been completed satisfactorily must be obtained and provided to the Private Certifying Authority with the Subdivision Certificate application.

Reason: To ensure all Council assets are restored to the satisfaction of Council. (DACENHPS1)

Stormwater and Road Assets to be dedicated to council.

Works-As-Executed plans for all structures or facilities which will be dedicated to Council or which are located within drainage easements or which will require ongoing maintenance by Council. The plans are to be in paper and electronic format (dwg or dxf file) in accordance with Council's standard specifications and comprise at least the following:

- Kerb and gutter, road pavement, footpaths, traffic devices, retaining walls;
- Signage (including type and wording), line marking;
- Easements, survey numbers and marks, reduced levels and co-ordinates;
- Stormwater drainage locations, pipe sizes and types, pit sizes and types, subsoil drains;
- Water quality devices

Please note that asset IDs need to be obtained from Council prior to the applicant's CCTV review of the new Council stormwater drainage line.

Reason: To comply with Council's policies and specifications (DACENHPS2)

Maintenance security deposit - Council assets.

A maintenance period is to apply to all civil engineering works to be dedicated to Council or which will require ongoing maintenance by Council. The maintenance period will apply for six (6) months after the issue of the Subdivision Certificate. In that period the applicant will be liable for any part of the works which fail to perform in the manner required by the relevant certifications, or would reasonably be expected under the design conditions. The maintenance security deposit required by Council is to ensure rectification of any defects during the maintenance period.

Reason: <insert reason - make sure you LEAVE the code to the right> (DACENHPS2)

Post construction dilapidation report

The applicant must prepare and submit a post-construction dilapidation report. The report must clearly detail the final condition of all property, infrastructure, natural and man-made features that were originally recorded in the pre-commencement dilapidation report. A copy of the report must be provided to Council prior to the issue of the subdivision for public infrastructure and private property owners.

Additionally photographic evidence of the condition of the street trees and road reserve area adjoining the site after the completion of all construction, must be submitted showing that no damage has been done and if damage has been done that it has been fully remediated. The photographs shall be accompanied by a statement that no damage has been done (or where damage has been remediated that Council has approved that work). In this regard, Council's written agreement that all restorations have been completed satisfactorily must be obtained prior to the issue of any Subdivision Certificate.

Reason: To ensure security against possible damage to Council and private property. (DACENHPS4)

Street Sign -Lorikeet Grove

A street sign denoting Lorikeet Grove is to be installed in accordance with Councils specification on a approved alignment/position prior to the release of the Subdivision Certificate.

Reason: In accordance with the Roads Masterplan. (DACENHPS5)