

Cessnock LGA



2024

DEVELOPMENT ENGINEERING HANDBOOK



CESSNOCK CITY COUNCIL



Journey Through Time, created by local school students and artist Steven Campbell.

Acknowledgement of Country

Cessnock City Council acknowledges that within its local government area boundaries are the traditional lands of the Wonnarua people, the Awabakal people and the Darkinjung people. We acknowledge these Aboriginal peoples as the traditional custodians of the land on which our offices and operations are located, and pay our respects to Elders past and present. We also acknowledge all other Aboriginal and Torres Strait Islander people who now live within the Cessnock Local Government Area.

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INTRODUCTION

Introduction

How to use this Handbook

In NSW, when private developers subdivide land, they may be required to construct infrastructure and carry out environmental work to meet the needs of the future residents and users. Before new lots or buildings are released, some infrastructure assets are handed over to Council or community ownership.

This Handbook sets out the requirements that private developers of land within the Cessnock Council area need to work through under a Development Application (DA), before subdivision or other developments can be completed and brought to market.

It is meant to be used by beginner and experienced developers, consultants, contractors and Council staff.

The Handbook is divided into five Parts. The first four Parts follow the different phases of work that are to be undertaken:

- Development Application
- Engineering design
- Construction, and
- Handover of infrastructure to complete the subdivision.

The fifth Part contains technical codes that apply to specific types of work that may not apply with every development.

At the start of each Part is a short introduction to the concepts and process that will be discussed in that section – to help all users familiarise with what Council expects from developers at each stage. The main part of each Part discusses the detail, including technical requirements which are for use by the development industry (for example project managers and designers) and Council staff as they work through the documentation that Council needs before the subdivision or development can be finished.

By becoming familiar with the contents of this handbook readers should be in a better position to understand what is required, and what options there may be, to move the development forward.

Where this Handbook conflicts with a requirement in Council's AUS-SPEC or a Council standard form, the more conservative requirement applies. If this does not resolve the issue, the other document prevails to the extent of this inconsistency. Users of this Handbook should raise any duplicate or conflicting requirements in each document with Council's Principal Development Engineer so item(s) can be removed or corrected in the next revision.

Purpose of this Handbook

In NSW, when private developers subdivide land, they may be required to construct infrastructure and carry out environmental work to meet the needs of the future residents and users. Before new lots or buildings are released, some infrastructure assets are handed over to Council or community ownership.

This Handbook has been written with the following objectives:

1	Explain the development engineering process clearly using plain English to cater for a wide range of users with different backgrounds
2	Enable consistent decisions to be made by Council and industry across the Cessnock Council area by having one process and public set of rules
3	Explain why certain requirements apply and set out an equitable basis for certifiers (e.g. Council) to accept alternative solutions
4	Provide for amendments to be made in the future by formally updating one document as needed

This Handbook is not meant to:

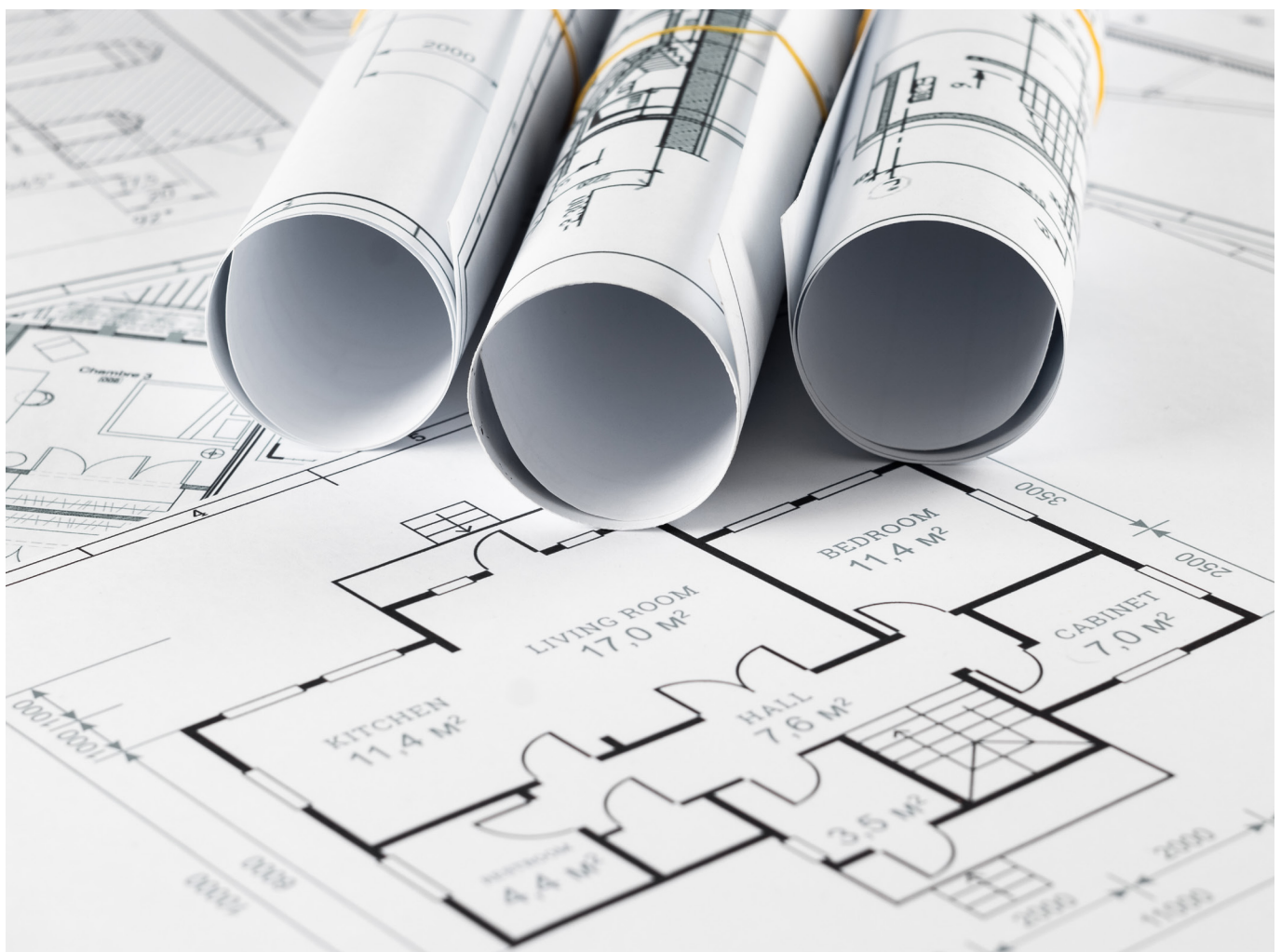
- Be applied to works being delivered by public authorities (such as Council or utilities), as the processes to be followed in those cases are covered by different legislation such as [Part 5 of the Environmental Planning & Assessment Act](#) (EP&A Act). That is unless the public authority needs a DA to perform the work, in which case this Handbook is to be applied in the same way as for private developments.
- Explain the technical requirements for specific types of infrastructure assets or works, such as pipelines, drains, earthworks, landscaping and the like. These are set out in Council's AUS-SPEC engineering specifications. AUS-SPEC forms a set of common specifications for all new assets to be built and maintained by Council or the community, so it applies to both private developers and Council projects.

Dictionary and abbreviations

The following table provides a definitions and meaning to abbreviations and terms used throughout this Handbook.

Term/acronym	Definition
Acid Sulfate Soils (ASS)	Refer to Code E5 Geotechnical and Soils.
Annual Exceedance Probability (AEP)	The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year. (e.g.1% AEP means once in 100 years).
Certifier	A person either employed by a statutory authority (such as Council) or a private individual accredited by the Building Professionals Board to issue Construction Certificates (for buildings), Subdivision Works Certificates (for subdivisions) and Compliance Certificates for certain categories of work under the EP&A Act. Refer to item BI An introduction to detailed design.
(DLMP)	Defect Liability Maintenance Period
Development application (DA)	A permit process for assessing the likely impacts of development as set out in Part 4 of the EP&A Act . All developments require a DA unless they are exempt, complying or are subject to environmental impact assessment by a public authority (EP&A Act Part 5).
Development Control Plan (DCP)	The Cessnock City Council DCP, or its successors available on Council's website. This town planning documents sit under the LEPs and outline what acceptable solutions and performance standards that apply to development proposals and supports the planning controls in the Cessnock LEP 2011.
DXG/DXF	Is a GIS data format which could be used by Council to process WAE data
(EP&A Act)	Environmental Planning & Assessment Act. The EP&A Act sets out the framework for all developments and environmental assessment work in NSW.
(EPA)	NSW Environment Protection Authority
(ESCP)	Erosion and Sediment Control Plan.
Local Environmental Plan (LEP)	The Cessnock City Council LEP is an Environmental Planning Instrument that sits under the EP&A Act framework. The LEP is Council's primary town planning instrument that sets out standards and permissions that apply to land use and development within the Cessnock Local Government Area.
(NCR)	Non-Conformance Report. Refer to section C5 Non-conformances.
Principal Certifier	A person either employed by a statutory authority or a private individual accredited by the Building Professionals Board to issue Occupation Certificates (for buildings), Subdivision Certificates or Strata Certificates for certain categories of work under the EP&A Act.

Term/acronym	Definition
Quality Assurance (QA)	An ISO 9001 accredited system for managing the quality of work by the Contractor, including keeping records and reporting to allow failures or defects to be isolated, cause-and-effect reviewed, and rectified.
SHP	Is a GIS data format which could be used by Council to process WAE data
State Environmental Planning Policy (SEPP)	A type of Environmental Planning Instrument that sits under the EP&A Act framework. Maintained by the Department of Planning and Environment, there are numerous SEPPs that set out rules for certain types of development that apply across NSW. They work in addition to Council's LEPs.
(TIA)	Traffic Impact Assessment.
TfNSW	Transport for New South Wales
(WAE)	Work-as-executed information.
(WSUD)	Water Sensitive Urban Design.



Development Activity Steps

PART A

Pre-Lodgement

- Prepare Concept Drawings
- Seek pre-lodgement advice via duty planner or pre-DA meeting

Development Application

- Consent Authority to review documentation and make determination
- Conditions of consent applied to mitigate impacts of development

PART B

Construction Approvals

- Subdivision Works Certificate (SWC)
- Roads Act (s138) approval
- TfNSW- WAD (Works authorisation deed)
- Hunter Water (Section 50)
- Ausgrid
- NBN
- Jemena
- Local Traffic Committee (LTC)
- Controlled Activity approval
- Section 68 approvals

PART C

Construction Activities

- Developer to appoint Principal Certifier, Contractor(s) and Superintendent
- Subdivision and infrastructure work to be progressively inspected as construction progresses in accordance with inspection testing plan

PART D

Handover of Assets

- Final Compliance inspections
- Quality Assurance documents provided to Principal Certifier
- Works-As-Executed submitted to Principal Certifier for approval
- Acceptance of Defects Liability & Maintenance period

Registration

- Submit documents for Subdivision Certificate (SC) approval
- Subdivision Certificate approval
- Developer to lodge approved plan of subdivision at NSW Land Registry Services
- New subdivision lots created

End of Defects Liability Maintenance Period

- Once infrastructure has served a minimum period in operation, inspection required for defects

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PART A

Development Applications

Development Applications

A1 An introduction to engineering requirements for DAs

The Environmental Planning & Assessment Act (EP&A Act) sets out the land use and land development planning framework in NSW. Under the Act, Cessnock Council is the Consent

Authority for most Development Applications (DAs) in its local government (LGA) area, with the responsibility to review and make decisions about development proposals. For larger or higher capital investment value DAs other authorities may be the Consent Authority, such as Regional Planning Panels for proposals that are deemed to be regionally significant or the Department of Planning and Environment for proposals that are deemed State Significant.

Under the EP&A Act and the EP&A Regulation sit the various Environmental Planning Instruments which include the State Environmental Planning Policies (SEPPs) of the State Government, and the Local Environmental Plans (LEPs) of the Council. These determine the rules for certain types of developments and certain types of land. Under Council's LEP sits the Development Control Plan, which sets out the performance-based controls to be assessed with each development. These planning documents are not discussed in great detail in this Handbook.

When Council approves a DA it will impose conditions of consent that must be complied with if the development is to go ahead, usually to help mitigate or manage any impacts of the development. Some of those conditions may require new community infrastructure works to be constructed by the Developer to cater for any new lots or buildings that will be created. Conditions will also require the works to be constructed in accordance with Council's specifications.

In the NSW planning scheme, [Section 6.2 of the EP&A Act](#) gives the definition of subdivision which includes creation of new Torrens system lots (the standard and most common freehold title), Community Title, Strata Title, or Stratum Title, as well as many other less common titling arrangements such as Corporate Title, Leasehold and so on. Boundary adjustments also fit the definition because they involve a plan of subdivision, although no additional lots are created. This Handbook applies to all types of subdivision in the Cessnock Council LGA and also sets out special requirements for certain types of subdivisions. It also applies to non-subdivision proposals where community (e.g. public or shared infrastructure) will need to be constructed by the Developer.

Generally, the Developer will need to engage a range of specialists to prepare the required plans and reports, as land development by its nature spans many disciplines and social concerns. These people may include for example town planners, surveyors, engineers, designers, ecologists and building surveyors. Engineering and technical requirements for each of these steps are discussed in more detail in Part A.

A2 Getting pre-lodgement advice

Council offers free advice to developers in the early stages of planning a development via either the duty planner or the pre-DA service.

Pre-lodgement advice is recommended for the following;

- Large scale or Complex developments
- Constrained sites

Non-binding advice from Council is provided at a high level and is commensurate with the level of detail provided by the proponent.

Everyone benefits from early consultation: often, the costly problems or delays in the land development process come about as a result of developers not knowing about an issue early, or not designing the development to respond to difficult site conditions or hazards.

Anyone can phone Council on (02) 4993 4104 and ask to speak to the duty planner about a development in general or speak to a development engineer if they have a question about specific requirements for subdivision or infrastructure. Alternatively, a developer can email a completed Pre-DA meeting request form to planning@cessnock.nsw.gov.au and request a meeting.



A3 When is a DA required?

The [EP&A Act Part 4](#) sets out three pathways for private developments:

1. Development application (DA)

This handbook mainly deals with this approval process when a DA is required.

2. Complying Development Certificate (CDC)

This is a fast-tracked approval process for certain types of development that meet all specified criteria as set out in the State Environmental Planning Policy (SEPP) ([Exempt and Complying Development Codes](#)). A CDC can be issued by either a Council building surveyor or a private Certifier and subject to other approvals or permits required by other acts. The requirements of this Handbook do not apply to CDCs.

3. Exempt development

As set out in the SEPP ([Exempt and Complying Development Codes](#)). This is development that does not require certification under the EP&A Act, so can be constructed without further approval (subject to any other permits required by other Acts) but must meet all the requirements set out in the SEPP in order to be exempt. Exempt proposals do not have to comply with this Handbook.

Most subdivisions are 'development with consent' and therefore require a DA. Certain subdivisions can be categorised as exempt but must meet all of the criteria outlined in [s2.76 of the SEPP](#). When a subdivision is exempt, such as a boundary adjustment, a DA is not required. Some subdivisions can alternatively be done under a CDC by private Certifiers, where the SEPP allows this. However, in both cases the Developer's surveyor must still lodge the subdivision plan (also known as the 'linen plan') with Council and obtain a Subdivision Certificate before the subdivision can be finalised at NSW Land Registry Services.

The EP&A Act works together with the permits and licences that may be required under various other Acts, so does not replace the need for the Developer to also obtain those permits (unless specifically noted otherwise in the relevant Act). Common permits that developers may need are discussed further in this Handbook and include:

- Subdivision Works Certificate (issued under the [EP&A Act s6.3](#)) to authorise subdivision works (on private property) issued by Council or an accredited private certifier.
- [Roads Act s138](#) approval from Council for works in the road reserve, and Transport for NSW if required.
- [Local Government Act s68](#) approval from Council for plumbing and stormwater drainage, installation of a manufactured home or to operate a caravan park, waste management, lifting over a public road, use of community land, and other activities.
- [Water Management Act s305 to 307](#) for water supply works or contributions to the water supply authority (Hunter water).

A4 When lodging a DA

The purpose of a DA is to give approval for the proposed development in concept. This means that the Consent Authority (e.g. Council) and community need sufficient detail in the application to clearly understand the development being proposed, and to be confident that all the requirements of the planning schemes, as well as any likely impacts of the development, have been identified and addressed.

Without providing a complete list, common requirements in support of subdivision or infrastructure DAs must include:

1. A Statement of Environmental Effects. The detail in this planning report must respond to the scale and complexity of the development, so the Consent Authority can determine that all planning scheme requirements have been addressed.
2. Concept plans drawn to-scale, relative to a known datum (e.g. Map Grid of Australia MGA (2020) and Australian Height Datum AHD), showing positions and dimensions of key infrastructure, buildings, embellishments and existing features of the site and all adjoining properties.
3. Specialist reports where environmental hazards may be likely and specific controls are needed, such as
 - Geotechnical advice for use by future owners in regard to slope stability, controlled filling completed under supervision, site classification of foundation conditions in accordance with AS 2870, wastewater disposal suitability, groundwater levels, dewatering during construction and/or acid sulfate soils
 - Flora and fauna assessment where ecological impacts (e.g. proposed vegetation removal) may occur
 - Flood studies where the site is impacted by flooding or could cause flood impacts
 - Traffic Impact Assessment to ensure traffic generated by the development can be accommodated and determine where and when road upgrade works may be required
 - Stormwater management plan to demonstrate how stormwater will be managed onsite to prevent offsite impacts
 - Bushfire Assessment to demonstrate that the development has addressed the requirements of NSW Planning for Bushfire Protection 2019.

Some of the detailed documentation may be left until later stages in the approval process where the detail is not required for the Consent Authority to make a determination. These requirements can be addressed by conditions of consent of the DA.

If Council have specific concerns around any area of the proposal and requests further information/detail, further details may be required to demonstrate that the concerns may be mitigated and positive outcomes can be achieved to avoid refusal of the DA or unfavourable conditions.

Land owners' consent

Rights and obligations under a DA generally attach to the land. For this reason, the Developer must obtain written consent from third party landowners (including public authorities) where any works are proposed on adjoining or other property. The consent form should clarify the scope of consent given, i.e. the type of development, and whether it is given for the purpose of obtaining a DA or also for subsequent permits.

Investigation work

Where the capacity of existing infrastructure is unknown, Council may require the Developer to perform investigation work at no cost to Council e.g., geotechnical test pits or boreholes. Where this work involves physical excavation, penetration or affects public traffic, a Roads Act (s138) permit must first be obtained. Investigation work is generally listed in the SEPP (Exempt and Complying Development Codes) as not requiring a DA. Sometimes these requirements can be deferred by a condition of consent requiring this information prior to any construction permit approval instead.

Request for information

As part of assessing a DA or related permit, Council may request any additional information needed to make a determination. Under the EP&A Act, time limits for Council assessment are paused while the applicant provides this information.

If a reasonable amount of time passes since the request, Council staff will follow up and give a time limit for the applicant to respond, as applications can't be held indefinitely. If the information still isn't provided within that time limit, Council may request that the applicant withdraw the application or otherwise Council will determine the application with the available information which may result in a refusal determination. Withdrawn applications may be eligible for a part refund of the assessment fees that have been paid if assessment is incomplete. Refused applications usually aren't eligible for a refund.

Where repeated requests for information on a DA or any other related permit are made by Council, based on the same mistakes or missing details, Council may charge an additional review fee to compensate for the time staff have spent reviewing and liaising with the applicant.

Waiver

When providing any material to Council in relation to a development enquiry, the owner grants Council a royalty-free, irrevocable, worldwide, perpetual, non-exclusive licence to use, store and transmit any material (which may include reports, plans, drawings, devices and other intellectual property) for any purpose, including the right for Council to sub-licence its use. The owner also waives its entitlement to enforce any moral rights in relation to the material.

This clause is required in order for Council to perform its role as the Consent Authority and Principal Certifier. Providing material in order to have an application assessed constitutes agreement with this clause by the Developer and its representatives.

A5 Developing in stages

Master Plan

A development site can be progressively developed in smaller stages. For staged subdivision or infrastructure proposals a master plan is needed to show how each stage and all roads, open spaces and services fit within the entire site in relation to each other. This helps ensure that any impacts and requirements for the development are managed coherently and efficiently. Separate drawings should be provided to show how the development will look at the completion of each stage.

Boundary interfaces

Special care is to be taken to show the boundaries of work in each stage, as well as temporary arrangements such as for servicing of all lots on completion of each stage before the next is begun. A master plan is similarly required where residue, balance or undeveloped lots are proposed.

Each stage must be feasible in its own right, with all infrastructure payable for out of revenue arising from that stage. For example, a link road at the rear of a development should not be permitted to form its own stage without holding any lot release to pay for it – otherwise the road may become uneconomical. This requirement does not apply to infrastructure that is funded by a contributions scheme or similar mechanism to provide funding and complete the work.

All lots to be serviced

For any residue, balance or undeveloped lots not proposed to be further developed as part of a DA, all services are to be provided to the boundary to the satisfaction of the relevant utility authority. This includes roads, electricity, telecommunications, sewerage, water supply and stormwater drainage, to avoid a scenario where the future Developer is required to fund extension of infrastructure from beyond its boundaries to service the development site.



A6 Alternative solutions

Procedure for Variations to standards

There will be some scenarios where it is unreasonable for the Developer to meet the minimum requirements outlined in the DCP or in Council's AUS-SPEC specifications.

This section explains how to go about determining whether an alternative solution or a variation to the standard is acceptable. This procedure must be followed to ensure that all applicants are treated openly and fairly, and to provide certainty for all users including Council staff and private certifiers.

If a Certifier other than Council accepts an alternative solution, they must provide copies of all supporting documentation on handover to Council as the future asset owner.

Variation criteria

Where an alternative engineering solution is proposed that does not meet the minimum technical specification of Council, it is to be evaluated for, but not limited to, all of the below criteria. The applicant shall provide numerical calculations and assumptions where required to support this evaluation. Before it is accepted, the Consent Authority (for DAs) or the Certifier (for construction certificates or Subdivision works Certificates) must be satisfied that for each of the following criterion an equivalent or better outcome will be very likely to result:

1. Health and Safety of workers and the public
2. Environmental and biodiversity outcomes
3. Economic costs and infrastructure quality. To this end the Developer's cost savings may be factored in where a public authority may also save costs of a similar magnitude when it is required to maintain and renew the asset at the end of its life, considering the net present value of that future cost
4. Social amenity, aesthetic amenity and social character
5. The development remains consistent with DA conditions.

Modification

Any variation sought by the developer, will require consultation with the Consent authority and lodge a formal application to modify the DA.

No precedent

Council or the Certifier shall not be bound by any previous decision that has been made for a different project or stage, as the specific circumstances and timing relevant to the decision are different in each case. Where an alternative solution has been adopted by Council it may be incorporated into Council's specifications so that all users benefit.

A7 Referral to authorities

The Consent Authority as part of the DA process often needs to refer details to external authorities and obtain their approval. Here is a brief (but not exhaustive) guide to common referrals required for subdivision or infrastructure DAs.

TfNSW

Transport for NSW / Roads and Maritime Services has responsibility for classified (State and Regional) roads and referral at the DA stage may be required for any of the following:

- By SEPP ([Transport and Infrastructure](#)) s2.119, new vehicular accesses directly to classified roads are generally not permitted where an alternative road can be used. If permitted, more stringent standards may apply
- If the development is of a scale or capacity greater than any of the thresholds listed in the SEPP (Transport and Infrastructure) 2021 at [s2.122](#) and [Schedule 3](#)
- If work is proposed within a classified road reserve, concurrence from TfNSW under Roads Act s138(2) is required under the integrated development provisions of the [EP&A Act \(Div 4.8\)](#).

If in doubt, discuss the proposal with Hunter Region Land Use Assessment team at TfNSW. Refer to part B8 which explains requirements for concurrence to be obtained from TfNSW during the construction permit process. Council is the Road Authority for classified roads in the Cessnock LGA, Council's consent under Roads Act s138 to any proposal is required as well as concurrence from TfNSW.

Crown Lands

Some existing public road reserves are vested in NSW Crown Lands, not Council. Where a subdivision or infrastructure proposal relies on Crown managed land or a Crown Road reserve, consent to the proposal (with any conditions) must be obtained from the Crown Lands authority. Crown Lands has power to require that the road reserve be transferred to the care and control of Council. In this case a Council condition of consent would generally require the Developer to upgrade the road formation to meet Council's current standards, having regard to the likely traffic on the road following completion of the development, and this is to occur before works for subdivision or infrastructure development commences.

RFS

Council can make a determination for proposals on bushfire prone land generally under [s4.14 EP&A Act](#) without referral to the Rural Fire Service (although Council may also optionally seek advice). However, where the Developer has proposed a Special Fire Protection Purpose (such as childcare or aged care centres) or subdivision on land that is designated bushfire prone, Council is required to refer the DA to the Rural Fire Service as integrated development for approval under the Rural Fires Act (in the form of a bushfire safety authority) and the EP&A Act.

NSW Department of Planning, Housing and Infrastructure (DPHI)

Certain categories of work (e.g., as part of subdivision or infrastructure construction) that may affect water bodies may require referral to the State Government including:

- Works on or within 40m of waterfront land including streams, rivers, lakes and aquifers, or works for the taking of water from a waterbody, are regulated by the Water arm of NSW DPHI, and any conditions will be issued as part of General Terms of Approval. Some of these Terms will include a requirement for the Developer to obtain a Controlled Activity Approval from NSW Industry before construction can commence. This gives NSW DPHI a chance to review construction plans and supervise or inspect high risk work
- Work crossing a stream or water body such as culverts or causeways is to be referred to the Fishing arm of NSW Department of Primary Industry. Conditions may include design requirements to ensure aquatic fauna or habitats are accommodated or not harmed by the work.

EPA

The NSW Environment Protection Authority (EPA) has a licencing role for any EPA Scheduled Activities that are to be performed in relation to development, subdivision or infrastructure proposals.

Other

The NSW Office of Environment and Heritage, and National Parks and Wildlife Service, have advisory and licencing roles in regard to potential and known heritage items which may be relevant to a development site. They may issue conditions in relation to the preservation of Aboriginal and European heritage items, artefacts or places.



A8 Assessment of impacts

Intensification

Subdivision of land creates additional demand (the 'nexus') for services and infrastructure in the area and this is referred to as intensification. The Developer is required to mitigate the impacts of intensification by upgrading or providing additional infrastructure as required by the utility authorities (including Council) at the Developer's cost.

Tree protection

Works such as buildings, pavements and services trenches may impact root zones of trees and cause their decline or death. AS 4970 Protection of trees on development sites sets out methods to estimate and limit the extent of construction impacts on trees. Tree Protection Zones in accordance with AS 4970 are to be shown for each tree on the plans, to demonstrate which trees can be retained and which trees will need to be removed. Design of works must ensure that any protected trees (e.g., under an existing Vegetation Management Plan) will be retained.

Surface levels at boundaries

DA plans are to show the proposed surface levels adjacent to boundaries and on adjoining property and public land (such as road reserves). Where batter slopes are unlikely to be naturally supported by the soil (e.g., at slopes greater than 1V:2H or 50%), details of permanent retaining walls and/or temporary shoring during construction adjacent to boundaries are required.

Haul Routes

Likely impacts as a result of truck haulage operations to be considered may include:

1. Cumulative damage by heavy vehicle combinations on public road pavements, for example as part extractive industry operations
2. Temporary traffic management measures required to cater for increases in truck movements, such as by limiting construction related truck movements outside of daylight hours or during school zone operating times
3. Suitability of existing roads to accommodate the manoeuvring envelopes of larger truck combinations, for example in terms of minimum safe road widths or bend radius
4. Requiring a bond security to be held until completion of temporary increases in truck movements to ensure any damage can be made good, such as during construction.

The Developer will be required to mitigate these impacts, for example by designating haul routes on its own property instead of public roads, or by constructing road upgrade works or paying a contribution to Council for road maintenance works that will result from the development. Further information regarding road haulage maintenance can be found in the [City Wide Infrastructure Contribution Plan 2020](#) – Part 10 Traffic Generating Development.

A9 Lot design

Internal Lots

Driveways to internal (battle-axe) lots are to comply with AS/NZS 2890.1 and the relevant Part of the Development Control Plan currently in use in Cessnock Council LGA. All services are required to be extended along the full length of the access handle.

Building envelopes

Where a site is constrained by environmental constraints (for example low lying land not serviced by sewerage lines) or preservation areas (such as native vegetation to be retained), Council may require that the Developer's concept plan nominate building envelopes to demonstrate that future building designs can be accommodated onsite while remaining sympathetic to those constraints. As part of the subdivision, building envelopes will need to be annotated with a restriction as to user preventing the erection of buildings except within the designated building envelope. Buildings and building envelopes shall be located outside of any easements or rights of access.

Zone of influence

Where easements are proposed, the minimum width of the easement shall be in accordance with Council's specifications and sufficiently designed to accommodate the total width of any pipe group plus a clear distance each side which is greater than the depth of the pipe group (to ensure that buildings are constructed outside the zone of influence on the pipes). Additional width shall be provided for easements to drain water to accommodate the rate of overland stormwater runoff.



A10 Roadway concept

Traffic impact assessment

Traffic Impact Assessment requirements for new developments of certain types or scales may be required for assessment of the traffic generating impacts.

Surface finish

All roads and driveways are to be design and constructed in accordance with AUS-SPEC

Cul-de-sac

'No through roads' are to be designed with a permanent turning area at the end to accommodate a garbage or fire truck.

Temporary cul-de-sac

Where roads form dead-ends at the boundary with a future stage, either intersections within the road system may be used for turnaround of garbage and fire trucks (providing trucks are not required to reverse), or a temporary turning circle is to be provided.

Any temporary turning head is to be maintained at the Developer's cost and located within the Developer's residue lot with a right of carriageway over it in favour of Council. If it must be located within the road reserve, a bond is to be held by Council to the value of replacing it with a permanent turning area.

Reserves and street names

Public reserve and street names must be submitted for approval and are subject to policy requirements of both the Geographical Names Board and Council. The Developer should propose names to Council no later than the application for a Subdivision Works Certificate, to allow time for street name to be approved and street signs installed prior to Subdivision Certificate approval for dedication of land to the public.



All Services for new lots and buildings

The Developer is responsible for the construction of the following services and works to each lot, at the Developer's cost and to the satisfaction of the relevant authority and Council. This includes survey and registration of any covenants, restrictions or easements that are required by each authority.

1. Wastewater

Effluent from buildings must be disposed of by connection to the public sewerage system to the satisfaction of Hunter Water. If in a non-rural zone, or onsite disposal where the required treatment and land application area is accommodated entirely within the same lot. A Geotechnical wastewater assessment will be required to demonstrate the site soil is suitable for onsite disposal in that case.

2. Water

All lots within Hunter Water supply area shall be provided with access to a water service by extending the main reticulation network.

3. Electricity

Generally, all lots with a dwelling entitlement must be provided with access to a low-voltage consumer electricity service before the Subdivision Certificate can be approved.

In making their decision the authorities are to consider whether requiring a connection will facilitate the progressive and incremental extension of mains electricity to outlying rural lots beyond the development site that are currently not serviced. Not providing a connection to a lot due to an intention to construct off grid dwellings or business premises can only be accepted if in accordance with legislation and Ausgrid.

4. Telephone and internet

Under the Commonwealth Telecommunications Act, all new lots are to be provided with a National Internet Broadband Network-ready service. Developers are advised that this can and has been cost-prohibitive for rural subdivisions, where Telstra may require the Developer to extend the pit-and-conduit network across large property frontages, potentially even in wireless broadband areas.

In making their decision the authorities are to consider whether requiring a connection will facilitate the progressive and incremental extension of telecommunications to outlying rural lots beyond the development site that are currently not serviced.

Not providing a connection to a lot due to an intention to construct off grid dwellings or business premises can only be accepted if in accordance with legislation and NBN or Telstra.

5. Access

Each lot is to be provided with both legal and physical vehicular access. Legal access means that the landowner either has direct frontage to a public road reserve, or benefits from a right of carriageway or access or similar entitlement over another property with access to a public road. Non time-limited proposals such as for buildings must have a legal right that does not expire i.e.,

leases or licences for a limited duration are only sufficient for a time-limited land use application that expires before the access right.

Physical vehicular access refers to the actual ability for a vehicle to traverse the land to the property, which is generally governed by Council's specifications, AUSTRROADS and AS/NZS 2890 for all-weather access for a two-wheel drive vehicle. For example, thick vegetation, steep gradients or embankments, ground with poor bearing capacity may render the proposed access impractical.

6. Stormwater

Wherever new impervious areas are created or runoff is concentrated into a stream flow, runoff is to be drained to a single legal point of discharge, which is defined as the Council-approved point of connection to the public drainage network or an existing natural classified stream (blue line on topographical maps) or waterbody.

7. Gas

Generally, each lot is to be provided by piped natural gas utility. Not providing a connection to a lot can only be accepted if in accordance with legislation and Jemena.

8. General

Waste collection is a consideration for each lot /dwelling therefore an appropriate lot frontage is required for ongoing collection.



A12 Frontage works

Roadside drainage

New subdivisions, multi-dwelling housing (two or more) or commercial DAs are required to provide kerb and gutter along the full frontage of the development to any public roads. Roadside table drains may be supported for rural- and rural residential zoned land. Where the longitudinal gradient of table drains exceeds 6%, concrete or sealed dish drains are to be provided.

Pedestrian and cyclist paths

New subdivisions or multi-dwelling housing (two or more) DAs may be required to provide dedicated pedestrian and cyclist facilities along their full frontage to any public roads.

A13 Vegetation

Landscape Concept

Subdivision DAs are to be accompanied by a landscaping concept plan showing how new roads, existing roads fronting new lots, public open space and reserves will be planted out, landscaped and hardscaped (fences, retaining etc) to benefit the amenity of the neighbourhood.

Street trees are to be provided at an average rate of one tree per new lot within residential areas. Species selection and planting details for larger scale proposals should be designed by at least a qualified landscape designer AQF-5 (diploma level). The concept should result in a diversity of species across the groundcover, mid-storey and canopy layers. Species endemic (native) to the area are preferred, to avoid promoting the spread of invasive exotics.

Planting areas must not clash with requirements of bushfire Asset Protection Zones (APZs) as required by any bushfire planning report.

Street trees

New individual street trees are required to be 75L NATSPEC (or equivalent) advanced stock plantings, while mass landscaping areas may be planted out with tube stock. To minimise conflicts with services and future buildings, trees species are to be referenced and need to be shown at their mature height and canopy cover, and the extent of tree pits and root barriers also shown on the concept plan. The concept is to be further developed following DA approval. The species are to be consistent with Council's Tree strategy.

Offset planting

Under the NSW biodiversity conservation scheme, Developers that clear native vegetation during redevelopment of a site will often be required to dedicate land areas for replanting to offset the losses. Normally these offsets are not allowed to be planted within road reserves due to poor long-term outcomes for habitat and the safety of fauna caused by vehicles and domestic animals.

Any street trees required by the previous paragraph cannot be counted as offset plantings. Requirements for offset planting areas are to be set out in a Vegetation Management Plan or Koala Plan of Management or similar, prepared by a qualified ecologist and approved as part of the DA.

A14 Infrastructure Contributions

Local Contributions Payments

Local Infrastructure Contributions are levied by Local Government, where a development seeks to increase lots or dwellings of an existing lot. This in turn increase population, being residential, tourist or employment generated and places additional demand on infrastructure such as roads, cycleways, community facilities and open space and recreational facilities. The contributions collected will fund new infrastructure or expand existing infrastructure to meet the demands of the increase in population. Cessnock City Council has 2 local contribution plans adopted:

1. **City Wide Infrastructure Contribution Plan** – this plan relates to residential development within the Cessnock LGA
2. **Section 7.12 Levy Contribution Plan** – this plan relates to all Tourist, Commercial and Industrial Development

Please refer to Council’s website for further information regarding contributions.

Housing and Productivity Contribution

The Housing and Productivity Contribution came into effect in October 2023 by the State Government and is a separate levy to the Local Infrastructure Contribution. The contribution applies to all development applications for residential, commercial and industrial development in the Lower Hunter Region which includes Cessnock. Contributions collected will help deliver schools, hospitals, major roads, public transport infrastructure and regional open space. Further information can be found on the Department of Planning’s website.



A15 Legal agreements

Local Infrastructure Contributions can be delivered in a number of ways in lieu of a monetary payment. These includes negotiations of legal agreements between the developer and council. The developer should approach Council prior to any DA being lodged to discuss the proposal. Ultimately it will be the Council's decision as to whether or not they accept such proposals from a developer. These legal agreements are generally prepared by Solicitors.

The types of agreements are as follows:

1. Voluntary Planning Agreement (VPA)

VPA's are generally offered prior to the lodgment of a DA and provides the developer and Council getting flexibility in delivering Local Infrastructure Contributions as opposed to the payment of a contribution. Generally, a VPA will provide for infrastructure that is not generally included in a contribution plan and/or together with a monetary contribution. The VPA must provide a public benefit greater than a monetary contribution which would normally apply under a s7.11 plan.

Also, Council may enter into a VPA with landowners at the rezoning stage such VPA's maybe to offset Biodiversity impacts or provide land for future infrastructure such as open space.

2. Works in Kind agreement (WIK)

A works in kind agreement is an agreement entered into by the Developer and Council after the DA has been approved. These types of agreements are entered into when the Developer offers to deliver infrastructure which is noted in the works schedules of a contributions plan in lieu of providing a monetary contribution as stated in the DA consent. Council will offset the contributions payable under the DA in lieu of the infrastructure being delivered.

Further information can be found on [Council's website](#) in relation to the Agreements above.

3. Legal Deed

In other circumstances where the Developer or Council is undertaking to perform work within a certain time period or other commitment and won't receive consideration (compensation) from the other party, a legal Deed may be a way to formalise that undertaking.

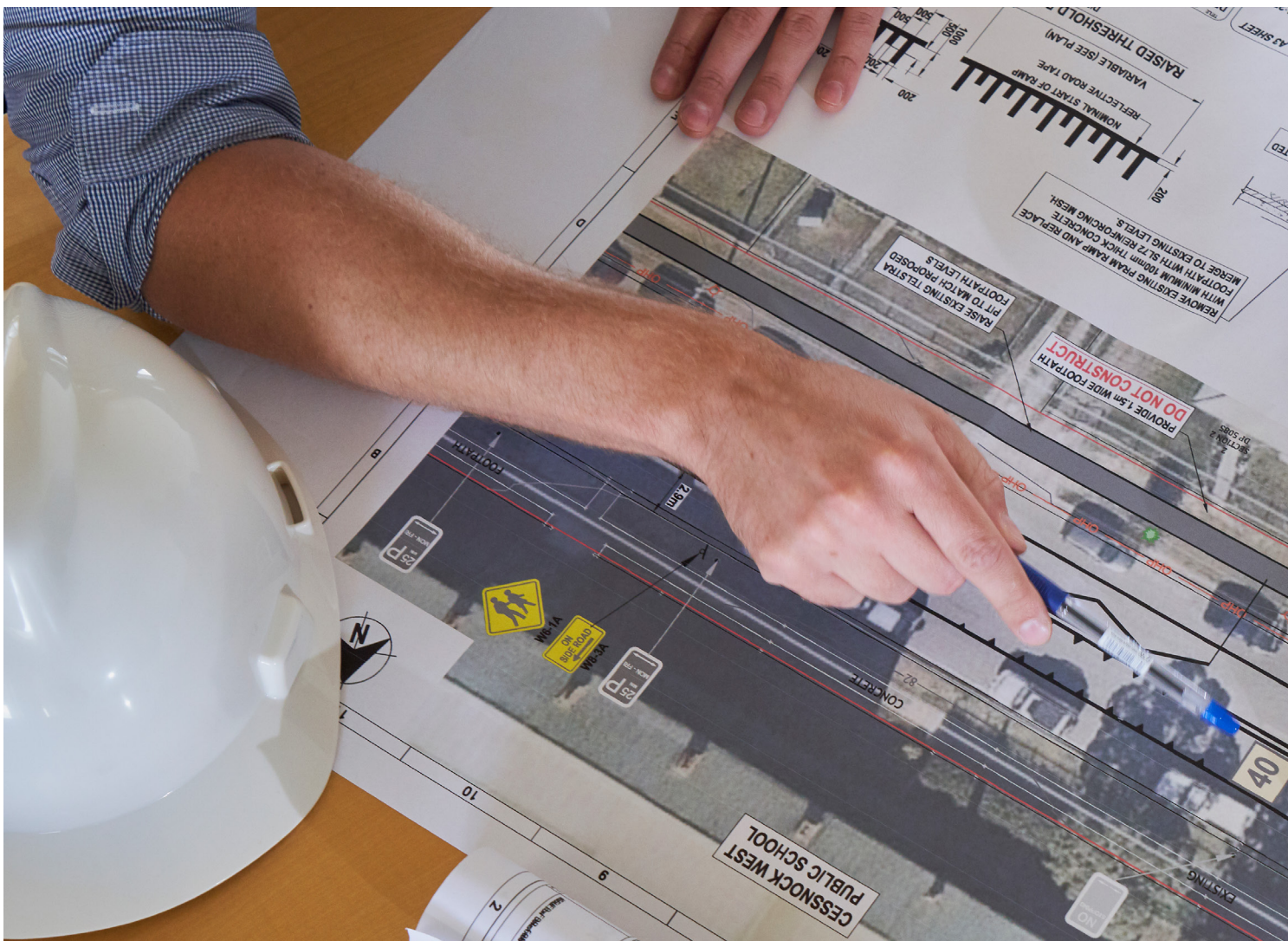
A16 DA determination

Time limited consent

Under the [EP&A Act s4.53](#), once a DA is approved generally the consent will lapse within 5 years unless works approved under the DA are physically commenced. Earlier dates of expiry may be imposed by Council depending on the type of development. A Developer is to demonstrate that physical commencement did occur as outlined by the department of Planning. Once physical commencement has occurred, the DA does not lapse (subject to any other consent conditions relating to expiry of the consent).

Liability for consent

Development consents attach to and run with the land they relate to, rather than particular applicants or owners who may change when the property is sold. The responsibility for compliance with the DA is between the landowner (Developer) and Council, unless a wrongful act is proven to have been done by another party (e.g., consultant or contractor) in which case Council may (but is not required to) pursue that party for costs, fines etc. Bond securities held on the developer's account may be used for any purpose in connection with the DA, including the performance of work or the payment of outstanding fees, fines and the like.

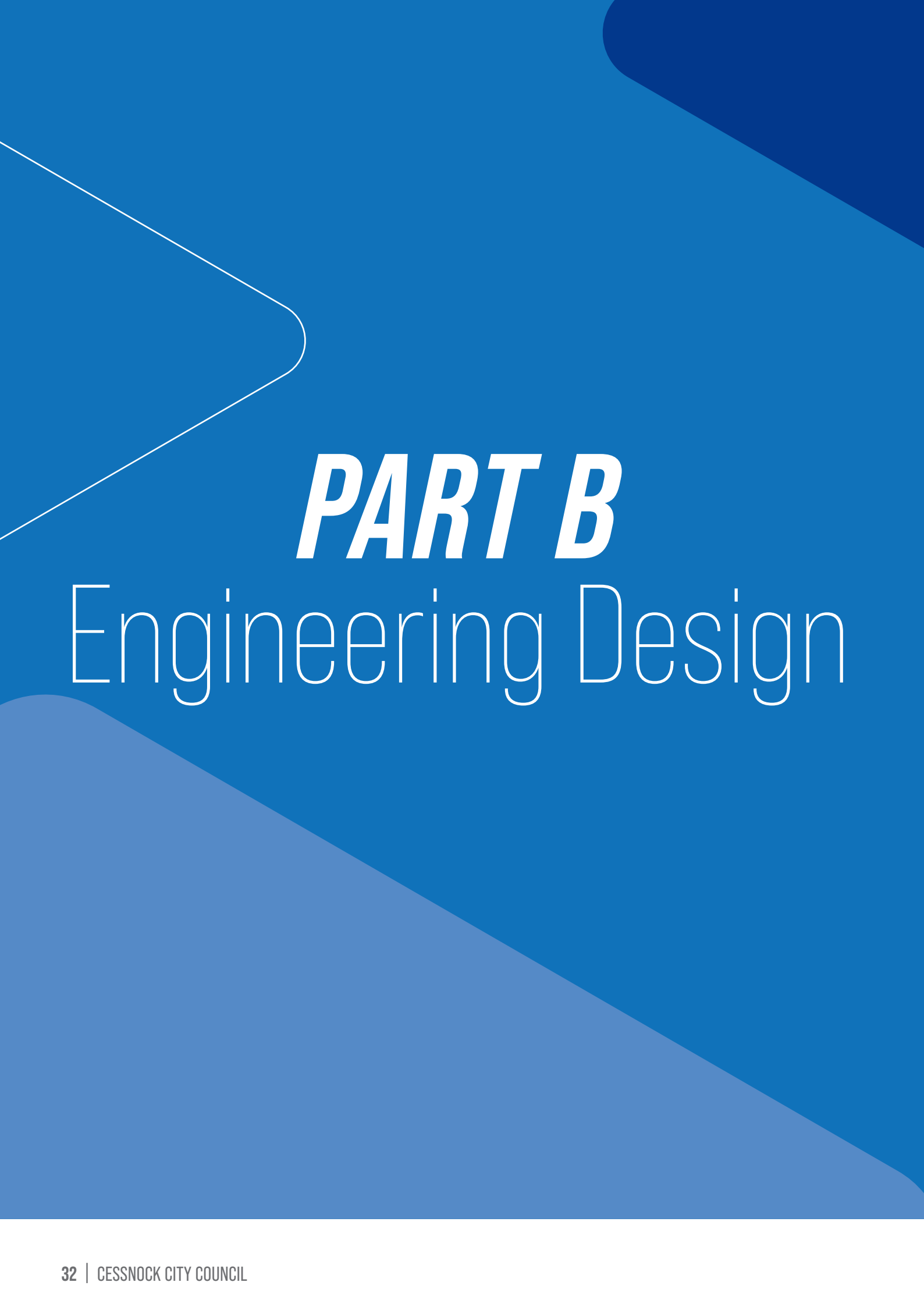


Unexpected site conditions

The Developer is responsible for managing all impacts of the development in accordance with the law, including those which are not envisaged in the DA consent conditions. Work in the affected area should halt and the Consent Authority and the Principal Certifier (e.g., Council) are to be notified as soon as practicable (within 24 hours), to provide advice where for example any of the following are unexpectedly encountered:

- Potential Aboriginal or European heritage items, artefacts or sites, in which case the advice of the NSW Office of Environment & Heritage is to also be sought
- Potential contaminants or pollutants onsite
- Potential Acid Sulfate Soils (PASS), and/or
- Potential Asbestos Containing Materials, or Naturally Occurring Asbestos.



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PART B
Engineering Design

Engineering Design

BI An introduction to detailed design and construction approval

Once a DA is approved, the Developer's representatives can proceed with the engineering design, drafting drawings and specifying all of the details in line with Council's engineering specifications (AUS-SPEC) to ensure that the proposed subdivision or infrastructure will remain safe and suitable for future users. The development is not to unacceptably impact the environment, and work will be of a high quality that is built to last.

Various construction permits may need to be obtained by the Developer before construction can commence. These permits ensure that the Developer's detailed design is reviewed by independent Certifiers (such as Council and other authorities) on behalf of the future asset owners. The separate permits reflect the different processes required by different Acts at the NSW and Commonwealth levels. Each has different fee categories that apply, reflecting the differences in how much review and supervision is required by Council staff.

All subdivision works require a Subdivision Works Certificate, which may be applied for either with Council or a registered private Certifier for that category of work identified by NSW Fair trading registration requirements.

In addition to, or as part of, a Subdivision Works Certificate, any works within a road reserve (covered by [Roads Act s138](#)) or certain categories of drainage work or operating equipment in a roadway (under [s68](#) of the [Local Government Act](#)) also may require Council's approval. The different categories of Council application are described below:

- A Section 138 activity approval for works within a road reserve including roadworks and driveway approvals
- A hoarding or work zone or traffic management approval (under s138 or s68)
- Stormwater connection application for dwellings or stormwater proposals where other work is not required.

The above approvals are for subdivision work or works on public property. Prior to starting private building works, a building Construction Certificate also needs to be obtained from a Council or registered private Certifier. Inspections are required by the Principal Certifier as the works progress before final acceptance is given.

A Subdivision Works Certificate must be approved before subdivision works can commence.

Finally, each of the utility authorities has a separate design review and approval process, which the developer will need to separately manage, including:

- Hunter Water for water supply and sewerage works
- Ausgrid for electricity supply works
- NBN or Telstra for telecommunications.
- Jemena for gas supply

The Developer is required to ensure that all approvals are in place before commencing work. The figure on the following page illustrates the requirements.

Developer requirements for engineering designs

Council or private certifier	Subdivision Works Certificate for subdivision on private land Construction certificate for building works
Council	Road (s138), drainage and/or work activity (s68) approvals
Hunter Water	Water supply and sewerage design review approval
NBN or Telstra	Broadband design review for approval
Ausgrid	Electricity design review for approval

Figure 1: Engineering design requirements

B2 Certifiers and Principal Certifier

Certifier

The term Certifier is used in this Handbook to describe the person that is responsible for reviewing and approving the detailed design drawings before construction begins onsite. The EP&A Act definition is slightly less broad, being the Council or private Certifier that is empowered to approve Subdivision Works Certificates (for subdivision work) or Construction Certificates (for building work). The Developer may nominate a Certifier who is different to the Principal Certifier. It is the Developer's responsibility to ensure that all packages of construction work receive approval from each of the relevant authorities including the Certifier.

Principal Certifier

The Principal Certifier is not necessarily the same entity as the Certifier. The Principal Certifier is responsible for inspecting the construction work (including documentation) as it happens and providing final signoff in the form of a Compliance certificate to enable an approval for a Subdivision Certificate (for subdivision work) or Occupation Certificate (for building work). Council is most often the Principal Certifier for subdivision work, but there are a few types of development where another entity can be the Principal Certifier (such as an registered private certifier registered with NSW Fair trading).

Subdivision Works certificate

Subdivision Works Certificates (for subdivision work on private property) can be issued by either a Council Certifier or a registered private certifier who holds the suitable accreditation category.

Before a Certifier approves a Subdivision Works Certificate, they are to ensure that the Principal Certifier (e.g., Council) has received payment for all inspections that will be needed during construction.

Sewer and water approval

Importantly, private Certifiers cannot certify the design of public water supply or sewerage works. Only Hunter Water has that authority within the Council area. This means that the Developer needs to get an approved set of engineering design plans from Hunter Water separately to (and usually before) the Subdivision Works Certificate if it will be issued by a registered private Certifier.

Road Act approval

Only Council or TfNSW can issue a permit under Roads Act s138. Private Certifiers are not empowered to issue these permits. This means that if a Developer engages a registered private Certifier to issue the Subdivision Works Certificate for subdivision work on private property, a separate permit from Council will be required for work in the road reserve.

Conditions may be imposed on the Developer under the roads act approval.

Section 68

Only council can issue a permit under Local Government Act s68. A separate permit from Council will be required for work outlined under s68 including carrying out stormwater drainage works not associated with other development and all OSSM installation.

Conditions may be imposed on the Developer under the approval.

B3 Designer

Design requirements

Each design must be certified by the Designer as compliant with the requirements of Council's AUS-SPEC and this Handbook. Construction permit applications also need to include a schedule listing all DA conditions and a description of how they have or will be complied with.

Insurance

The Designer is to maintain a professional indemnity policy with cover for a single event and in the aggregate of at least \$10 million, or the total value of all development works, whichever is greater. This is Council's requirement and does not override the Designer's risk exposure in relation to any project, which should determine what sum they are insured for.

Minimum designer requirements

The following minimum Australian Qualification Framework (AQF) qualifications are to be held by the Designer and recorded on the certificate for each of the following types of work, or the Designer should provide a copy of their CV demonstrating equivalent firsthand experience:

TABLE ONE: MINIMUM DESIGNER QUALIFICATIONS

Type of work	Minimum qualification
Subdivision infrastructure	Registered Land Surveyor or practising civil engineer (AQF-7 or higher)
Concrete structures (bridges, reservoirs, or large culverts with less than standard cover)	Structural engineer (AQF-7 or higher)
Retaining walls or batter slopes at 1V:1H (100%) gradient or steeper, and greater than 0.6m high	Structural or geotechnical engineer (AQF-7 or higher)
Landscaping and street trees	Landscape designer (AQF-5 or higher)

Errors and omissions

Errors, omissions and unsafe works remain the responsibility of the developer and their designer and are to be made good by the Developer at no cost to the Certifier or Council. This may include amending the design and obtaining further permits if required. If the Certifier determines that there is a significant error or omission which contradicts a statement on the Designer's certificate, the Certifier should request additional information and charge a fee for the additional time to review the resubmission.

B4 Plan preparation

Footway

Generally, public mains and services are to be located within the standard footway allocation widths as per the Councils specification. Redundant blank (spare) conduits are to also be installed wherever a road crossing is made, to the satisfaction of the utility authority.

Coordinate system and revisions

Drawings are to show the position of planned works using Map Grid of Australia (MGA) 2020 and Australian Height Datum (AHD) coordinates. Any plan amendments are to be highlighted with a revision cloud or bounding box. The title block is to show a history of revision numbers, dates and brief reasons for the revision. Clouds from previous revisions may be removed with each new revision or otherwise must show the revision number for when the change occurred.

Owner's consent

As part of lodgement of the detailed design with the Certifier, the Developer needs to provide written consents from the landowner for each property that makes up the site of the proposed works, including neighbouring land where ancillary infrastructure or earthworks is required. The Developer also needs to nominate an applicant, who the Certifier will direct all correspondence to regarding the application.

Cost of Works

To ensure that the Developer is levied the appropriate fees for NSW Long Service Levy, application fees and bond securities the Developer is required to have a suitably qualified person prepare a cost estimate for all proposed works.

Submission of Construction Plans

An electronic copy of construction plans and specifications are to be submitted to Council through the NSW Planning Portal (Portal) portal for assessment. A request for information may be sent to the applicant for revision and resubmittal through the planning portal. A stamped copy will be returned to the applicant once approved.

One A1 copy of stamped construction plans is to be maintained on site at all times.

B5 Electrical and telecommunications designs

Accredited designers

Following DA approval, the Developer will need to engage qualified designer(s) as accredited with Ausgrid (Level 3 ASP) for supply of electricity and NBN or Telstra for telecommunications services. These authorities have their own separate processes which the Developer must follow for review of designs, accreditation of contractors, and handover inspection.

Copies of the current electrical and telecommunications designs (even if not complete) shall be lodged along with the Subdivision Works Certificate application, for reference by the Certifier.

Telecoms authority

To facilitate the National Broadband Network (NBN) rollout, NBN is the default telecommunications authority and should be contacted by Developers in the first instance. However, NBN may determine that a particular development site is outside the NBN serviced area, and if this is the case NBN will nominate Telstra as the telecommunications authority for the development site. The Developer is usually required to arrange for the design and construction of pits and conduits to service each lot, and following acceptance of this infrastructure, the telecommunications authority will have its own accredited installers complete the cable haul and equipment installation at the Developer's cost.

Street Lighting

Ausgrid has a form for the Developer and Council to agree on the category of street lighting for roads at the development site. Council has the following requirements:

1. New luminaires should be of the LED type where this results in the lowest-cost ongoing energy usage and maintenance
2. Council will require new roads or major redevelopments of existing roads in residential zones to be illuminated to a lighting standard in line with AS/NZS 1158.1.1 (V-category roads) and AS/NZS 1158.3.1 (P-category roads). As a guide:

TABLE TWO: LIGHTING CATEGORY HEADING

Street classification	Lighting category
Up to local street	P4
Collector road	P3
Sub-arterial and arterial road	V3

3. For rural-residential zones and other existing roads with a significant increase in traffic as a result of the development, intersections should be flag-lit and pedestrian crossings illuminated in accordance with AS/NZS 1158. Separate AS/NZS 1158 categories also apply to lighting of public off-street carparks.

4. Roadside hazards such as poles, pillars and pad-mounted transformers are to be installed outside the clear zone calculated using AUSTRROADS Guide to Road Design Part 6: Roadside Design, Safety and Barriers. This generally correlates with pole setback Zone 3 as defined in AS/NZS 1158. Poles may only be permitted within the clear zone where nearby constraints dictate. If they are to be installed within the clear zone, they must be designed and certified so as not to pose a hazard to occupants of errant vehicles by being frangible or having a slip-base.

Substations

Large ground installations such as substations shall be incorporated into private property and not within the road reserve:

1. Where they have no public benefit, as they only serve a single lot or building or multiple lots or buildings with a common association (e.g., on the same strata or neighbourhood or Torren's title), or
2. Where within town centre areas, unless specially approved by Council. Buildings having zero front or side setbacks from boundaries is not enough to justify exemption from this rule.



B6 Landscaping details

Design by qualified person

Insufficient detailing of plantings by a suitably qualified and experienced landscape architect or designer is often a cause of high failure rates of individual plantings, resulting in lost time or costs for the Developer.

Design elements

A landscape design plan and specification is to be submitted where street trees or public landscaping is proposed, and is to include the details of:

1. **Subgrade preparation as required to suit the particular site soils present, which may include ripping, mixing and/or application of additives such as ameliorant (lime or gypsum) to improve any harmful soil qualities**
2. **Extent of tree pits and root barriers to prevent impacts on or by nearby infrastructure such as roadways or services trenches**
3. **Soil medium specification, source and treatment method, for example using soil conditioner.**
4. **Species selection, favouring native species endemic to the local area. Where exotics are specified they must not be noxious or declared weeds, and their propagation should be limited where possible. Any public plantings must also comply with any list of approved or prohibited species of plantings published by Council from time to time**
5. **How surface infiltration and subsoil drainage paths will optimise supply of water to the tree while discouraging water infiltration of pavements or root growth towards pavements and services**
6. **Full extent of likely individual tree heights and canopy covers at maturity**
7. **All applicable hardscape furniture to any proposed public open space/drainage reserve, including fencing, retaining, garden beds, seating**
8. **Maintenance schedule including application of soil conditioner and required watering.**

B7 Bonds

Dilapidation reports

Any damage to public assets including roads, footpaths, kerb and stormwater pits that occurs during construction is to be made good at the Developer's cost. The Developer is to provide a dilapidation report and photographs to Council before commencing work and upon handover to Council, documenting the pre-existing condition of all public land and infrastructure near the site and along roads to be used by trucks or construction equipment.

Where work has potential to affect others' private property, for example if work involves shoring or retaining within the zone of influence of a neighbour's property, it is strongly recommended that the Developer also perform a dilapidation survey which may include photos and measurements of the interior of neighbouring buildings to document any pre-existing cracking, movement or damage.

Types of Bonds

Council requires refundable bond securities to be held for a range of circumstances:

- Outstanding Works – where the Developer is to perform work on public land or assets, Council is to hold a bond equal to 150% of the value of outstanding or deferred minor works, to ensure that the Developer's obligations under the DA are met
- Road Occupancy – where the Developer takes possession of public property or roadway for a work zone or erection of hoarding, a bond amount will be calculated based on the scope of works and possible cost of repair. Minimum bond amounts increase in higher risk areas such as in the town centre, or where a significant excavation is proposed that could undermine the road or cause subsidence
- Defects Liability and Maintenance – as part of handover of new public infrastructure to Council, the Developer is responsible for repairing any defects or failures that occur and maintaining landscape plantings for a 24-month period, and Council retains a bond equal to 5% of the total asset value to guarantee performance
- Environmental Management – similarly for habitat remediation areas or offset planting areas, Council retains a bond to guarantee performance of the Developer's obligations under an approved Vegetation Management Plan or Koala Plan of Management. For example, this may include work such as planting, weed management, fencing out and ecologist inspections
- Other bonds may be required as a condition of consent to manage special risks for certain development sites. For example, Transport for NSW / RMS may require a separate bond for works on classified roads or traffic signals.

Bond Lodgement

Prior to a Developer lodging a bond, a quote is to be requested from Council to confirm the required amount. The quote request must also state the time period within which the Developer will complete the work. If not completed within that date, Council may require completion and commence the process to draw on the bond if the work is not completed.

Certifier to check bonds

The Developer is to provide a cost estimate prepared by a qualified person (e.g., engineer or quantity surveyor) on which the bond amount is to be based. The estimate is to include all costs that would be incurred if Council were to execute the work including plant, materials, labour, profit and GST at market rates. Council staff may increase this amount to cover any risks which the Developer has not adequately covered in the estimate.

Bond securities may be paid either in cash, or as a bank guarantee issued by an Australian Authorised Deposit-taking Institution. Bank guarantees must be unconditional and have no expiry date.

When a bond is lodged it is to be accompanied by a completed bond lodgement form stating the DA/SWC reference number, the bond purpose and the contact details of the lodging party.

Any Outstanding Works bond, Road Occupancy bond and/or Environmental Management bond required by the DA consent conditions must be lodged with and confirmed by Council before the Certifier approves any construction permit (Subdivision Works Certificate or Roads Act s138).

A Defects Liability and Maintenance (DLM) bond must be lodged with and confirmed by Council before the Principal Certifier (usually Council) can provide a Compliance certificate. The DLM period commences on the date of release of the Subdivision Certificate.

Bond refund

Bonds are fully refundable (excluding the bond administration fee) minus the costs Council has reasonably incurred in completing the Developer's obligations under the DA consent. Bonds can only be refunded to the original lodging party unless a signed written authorisation from the lodging party confirms that the specific bond amount can be paid to another entity.

Using a bond

Before Council can step in and perform work at the Developer's cost under a DA, efforts must be made in writing and verbally over a reasonable time period to contact the Developer's representatives and give the option for the Developer to complete the work at its cost (subject to an existing construction permit being in place).

The requirement for reasonable notice period is however waived where there is an emergency such as a risk of injury to a person, environmental damage or pollution, or significant damage to property, if not immediately rectified.

B8 Road works and traffic management

Traffic Management Plan (TMP)

The Developer's representative will be required to prepare a Traffic Management Plan (TMP) incorporating a Traffic Control Plan (TCP) or Traffic Guidance Scheme where:

1. Work has potential to impact traffic flow, such as traffic directions, lane closures, or delays, or
2. Work is close to moving traffic and safety controls are required (e.g. by reducing speed limits or narrowing lanes to erect barriers or bollards).

All TCPs must be prepared in accordance with AS 1742 Manual of Uniform Traffic Control Devices by a person who holds RMS 'Prepare a Work Zone TMP' accreditation or equivalent.

Worker and vehicle safety is to be managed in line with the Contractor's risk assessment, but as a guide, work should not be undertaken within 1.5m of a traffic lane unless the traffic speed is reduced to 40 km/h or less, or an adequate vehicle deflection or crash barrier is in place between the work zone and traffic.

Roads Authority Review

TCPs are to be reviewed by Council as the Road Authority prior to implementation onsite. The Contractor should allow at least seven (7) days for review.

At least fourteen (14) days' notice is required if night works, full closures, detours or delays greater than 10 minutes at a time are required. In these circumstances Council may require public notice periods to be implemented, which may include a combination of signage along the route, letters to affected properties and stakeholders such as emergency services, and/or advertisement by radio and newspaper. The [Roads Regulation s5](#) requires minimum notice be given to the public before temporarily closing a public road (except in emergencies).

Notices should describe the location affected, the type of work, traffic impacts (e.g. delays, detours, changed traffic conditions), the start and end dates, and the Contractor's contact phone number for complaints and coordination.

Transport for NSW (TfNSW) construction permits

The Developer also needs to obtain approval from Transport for NSW for each of the following where applicable:

1. Concurrence to the design details, for works within a Classified State or Regional Road under Roads Act s138(2)
2. A Works Authorisation Deed (WAD) for works interfacing with a State Road asset (e.g., pavement widening for a turn lane), or installation or relocation of traffic signal equipment, and
3. A Road Occupancy Licence (ROL) where the TCP or proposed work has potential to affect traffic flow on a State Road, or the work zone is within 3m of a State Road, or within 100m of traffic signals on any road.

Road Crossings

Transport for NSW (TfNSW) requires all utility crossings of State Roads to be under bored to avoid traffic delays and trenching through the pavement.

Crossings of major Council roads may also be required to be under bored at Council's discretion. Where trenching is permitted, attention to subsoil drainage, the standard of backfill, compaction and construction joints will be required to prevent pavement failure along the trench.

Survey Marks

The Developer is to protect all existing State Survey Marks, bench and reference marks that may exist on and around the site. Damaging a survey mark may be a legal offence. Registered Surveyors may be engaged to attempt to re-establish damaged or lost survey marks.





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PART C

Construction

Construction

CI An introduction to construction of infrastructure

Once the various construction permits are approved, works onsite can commence. Meanwhile the Developer may have already completed procurement and engagement of the contractors involved.

The Developer is responsible for the costs to appoint and manage not only the Contractor, but also the Superintendent, who is a suitably qualified person (usually an engineering consultant) familiar with Council's local rules. The Superintendent will be required to supervise the Contractor's work progress, adherence to the requirements of the DA consent, and inspection of works on behalf of the Developer.

In addition to the Superintendent, the Contractor will need to have various plans and inspections signed off by the Principal Certifier. The NSW planning framework and the EP&A Act in particular determines who can be the Principal Certifier. For most DAs the developer must appoint Council as the Principal Certifier. This Handbook uses the term 'Principal Certifier' to cover all types of developments, including those where Council is not the Principal Certifier.

This role is not the same as the role as that of a 'Certifier', which is set out in [s6.5\(2\) of the EP&A Act](#). Certifiers approve subdivision Works Certificates (approval to construct) and can be Council or a accredited private certifier registered by NSW Fair Trading. Part B in this Handbook covers the process for Certifiers.

This Part sets out requirements during construction, up to the point that works are practically complete and the Developer initiates the handover process with the Principal Certifier, which is discussed in detail in Part D.



C2 Superintendent and Contractor

Contractor requirements

All principal Contractors (those with contracts directly with the Developer) shall have a quality management system that is accredited to the ISO 9000 series standard, or provide evidence of experience and a Quality Management Plan for the works that is acceptable to Council. Subcontractors are not required to be accredited but must work in accordance with the principal Contractor's quality assurance requirements.

Each principal Contractor must also hold contractor's insurance providing a minimum of \$20 million cover for each single event and in the aggregate, or equal to the total value of construction, whichever is greater. Where any work is on public land (including the road reserve), Council shall be named as an interested party on the policy.

Superintendent

The Superintendent must hold an Australian Qualification Framework AQF-7 (bachelor level) engineering degree or be a Registered Surveyor. The Superintendent must have had suitable experience in the supervision of subdivision construction works and also be independent of the Contractor's control.

The Superintendent shall hold public liability insurance providing minimum cover of \$20 million for each single event and in the aggregate, or equal to the total value of construction whichever is greater.

Superintendent role

During the handover process, the Superintendent must certify that the development has been completed in accordance with all relevant consent conditions and Council specifications (AUS-SPEC and this Handbook) and other relevant codes. To this end the Superintendent is required to ensure hold point inspections are raised with the principal certifier and records kept during construction to verify compliance. Inspections at a minimum are to be performed in accordance with any Inspection and Test Plan approved by the Principal Certifier or Council.

Prior to Works commencing

Before work onsite commences, the Developer must (in writing):

1. Formally appoint the Principal Certifier (normally Council) and pay inspection fees in advance, and
2. Notify Council and the Principal Certifier (if not Council)
 - Two (2) days before starting subdivision works on private property under [s6.12 of the EP&A Act](#), and
 - Seven (7) days before starting works on public land as required by any Council permit.

Stop Work Orders

Council may order construction to halt if the Developer is in default of its obligations under the DA consent or Council's standards. The Developer shall ensure that it has the contractual ability to order the Contractor to stop work if required by Council, for example in the event that the Superintendent is no longer able to perform its role in supervising the work.

C3 Quality Assurance and Inspections

Inspection and testing Plan (ITP)

The Contractor is responsible for developing and submitting an Inspection and Test Plan(s) for its work on the project (e.g., using Council's pro forma) for approval prior to starting work. The Contractor shall arrange all inspections as required by the ITP(s) and obtain signatures.

The Superintendent and Council are separately responsible for attending and signing off (or requiring rectification) of all inspections as per the ITP(s) and requirements of this clause.

The Superintendent is responsible for monitoring progress of the ITP(s) and verifying all inspections are signed and lodged with the Principal Certifier prior to handover of assets.

Refer to Part D in this Handbook for further details on that process.

Categories of inspections

Within the ITP(s), inspections may be:

1. **Mandatory or Hold Point** – the Contractor must give a minimum of forty-eight (48) hours' notice of the inspection time (or as agreed by all parties) in writing or by phone call, and shall obtain signatures from each required inspecting party before covering the work or proceeding to the next step.

If an inspector requires an action (e.g. rework) to satisfy the inspection, the Contractor cannot proceed until the inspector is satisfied.

If the Contractor proceeds without signature, the Superintendent or Council may require uncovering and rectification of the work at the Contractor's cost.

2. **Notifiable or Witness Point** – the Contractor must give a minimum of forty-eight (48) hours' notice of the inspection time (or as agreed by all parties) in writing or by phone call and inspectors may decide not to attend. At the agreed time, the Contractor is to allow any inspectors present to review the work and may then cover the work or proceed to the next step. The Contractor should obtain a signature from each inspector present.

If an inspector requires an action (e.g. rework) to satisfy the inspection, the Contractor cannot proceed until the inspector is satisfied.

If an inspector requests the inspection be delayed as they are running late, the Contractor is to make reasonable efforts to accommodate the delay.

3. **Not required** – no notification or inspection is required for that party.

Different requirements may apply to the Superintendent and Council. For example, pipe jointing may be a Hold Point for the Superintendent, but Notifiable or not required for Council.

Separate Lots of Work

Separate inspections should be held for each lot of work to the satisfaction of the inspector(s). Each installation process which occurs as a continuous run under similar conditions should be defined as a separate lot of work for Quality Assurance (QA) purposes. For instance, changes in climatic conditions, start of a new shift with different labourers, delays between deliveries, formation of cold joints, new layers and so on may influence the curing or performance of

particular civil works, so a new lot should be recorded to enable any future defects to be isolated, causes determined, and rectified. Records including site diaries, test records and diagrams depicting the position of each lot are to be kept by the Contractor in accordance with ISO 9001, or accredited QA system.

Conformance Survey Methods

To provide all of the Work-as-executed information required, the Developer is to ensure that conformance surveys are performed during the work prior to covering each element. Position and levels are to be confirmed by traditional high-accuracy land survey techniques such as total station and Global Positioning System (GPS).

Conformance surveys by aerial methods (e.g. drone photogrammetry or LIDAR) are not to be used for assets where high accuracy is required including pavements, structures and sports fields. They may be used to generate digital elevation models for general earthworks surfaces such as those within flood prone areas.

C4 Modifying a construction permit

Where a modification to a construction permit is required Council's Development Engineer responsible for the Development Application will determine whether the amendment is minor, and can be captured as a mark-up on the WAE, or is significant enough to require amendment to the construction permit, which may incur additional fees.



C5 Non-conformances and defects

Non-Conformance report (NCR)

Each non-conformance or defect that occurs during construction is to be submitted to the Principal Certifier for approval in the form of a Non-Conformance Report (NCR) as soon as practicable after the Contractor or Developer's representative become aware of it.

An NCR needs to:

1. Be assigned a unique reference number and maintained in a database by the Developer along with other NCRs, for handover to the Principal Certifier at completion
2. Explain the issue, how it occurred, extent and likely impacts of the non-conformance
3. Propose option(s) to rectify the issue and prevent reoccurrence, for approval by the Principal Certifier, which may include for example repair, replacement, or acceptance as-is
4. Put a time limit on when the rectification will occur by.

When is an NCR required?

The Developer's representative is to discuss with the Principal Certifier who will determine whether an NCR is required. Typical examples of non-conformances or defects may include where:

1. Constructed work does not match the approved design
2. Constructed work does not meet standards in Council's AUS-SPEC, and was not approved as an alternative solution before construction
3. Tests were not performed when required, or results do not comply with targets
4. Work has been covered before inspection and it is not economical to uncover to allow inspection, and/or
5. Work is defective, has failed or malfunctioned prematurely or is not fully functional.

Rectification

The Principal Certifier may agree, request information or reject the proposal at its discretion. For a solution to be accepted it needs to reflect an equivalent or superior option over the whole life of the asset compared with the approved design, having regard to:

- DA conditions of consent, relevant legislation, development control objectives, and relevant standards (e.g. Australian Standards, National Construction Code, Council's AUS-SPEC)
- Ongoing costs of maintenance and operation
- Quality performance
- Safety performance
- Environmental performance, and
- Amenity and character of the community.

No Retrospective

Once work is constructed, [s6.14\(2\) of the EP&A Act](#) restricts a Subdivision Works Certificate being issued in relation to that work. The applicant should seek legal advice in respect of any works which have been completed without the benefit of a SWC, a s138 permit (under the Roads Act) and/or a s68 permit (under the Local Government Act) to formalise approval.

To accept a non-conformance, a formal application to modify DA conditions may also be required by the Consent Authority. Generally, works that have been constructed without approval must go through the same approval process and will cost more to rectify if they do not meet current planning rules or engineering standards.

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PART D
Handover &
Subdivision

Handover and Subdivision

DI An introduction to the handover and subdivision process

Creation of new lots as part of a subdivision is done by lodgement and registration of a completed plan of subdivision at NSW Land Registry Services. Before any plan of subdivision can be registered however, a Subdivision Certificate is required from the 'Principal Certifier', even in the case of subdivisions which are exempt or complying development and don't require a DA.

The role of the Principal Certifier is to review construction of the infrastructure or subdivision works, including quality and compliance paperwork, and accept the development on behalf of the community and issue the Subdivision Certificate. Currently in NSW the developer may nominate a registered private practitioner (instead of Council) as the Principal Certifier for certain types of complying (non-DA) development, such as for strata certificates.

This review process is referred to as the handover process and includes a compulsory Defects liability and maintenance (DLM) period which the Developer serves before their obligations are completed in relation to newly constructed infrastructure.

The figure below illustrates the steps in the handover process which are explained in detail in this Part.

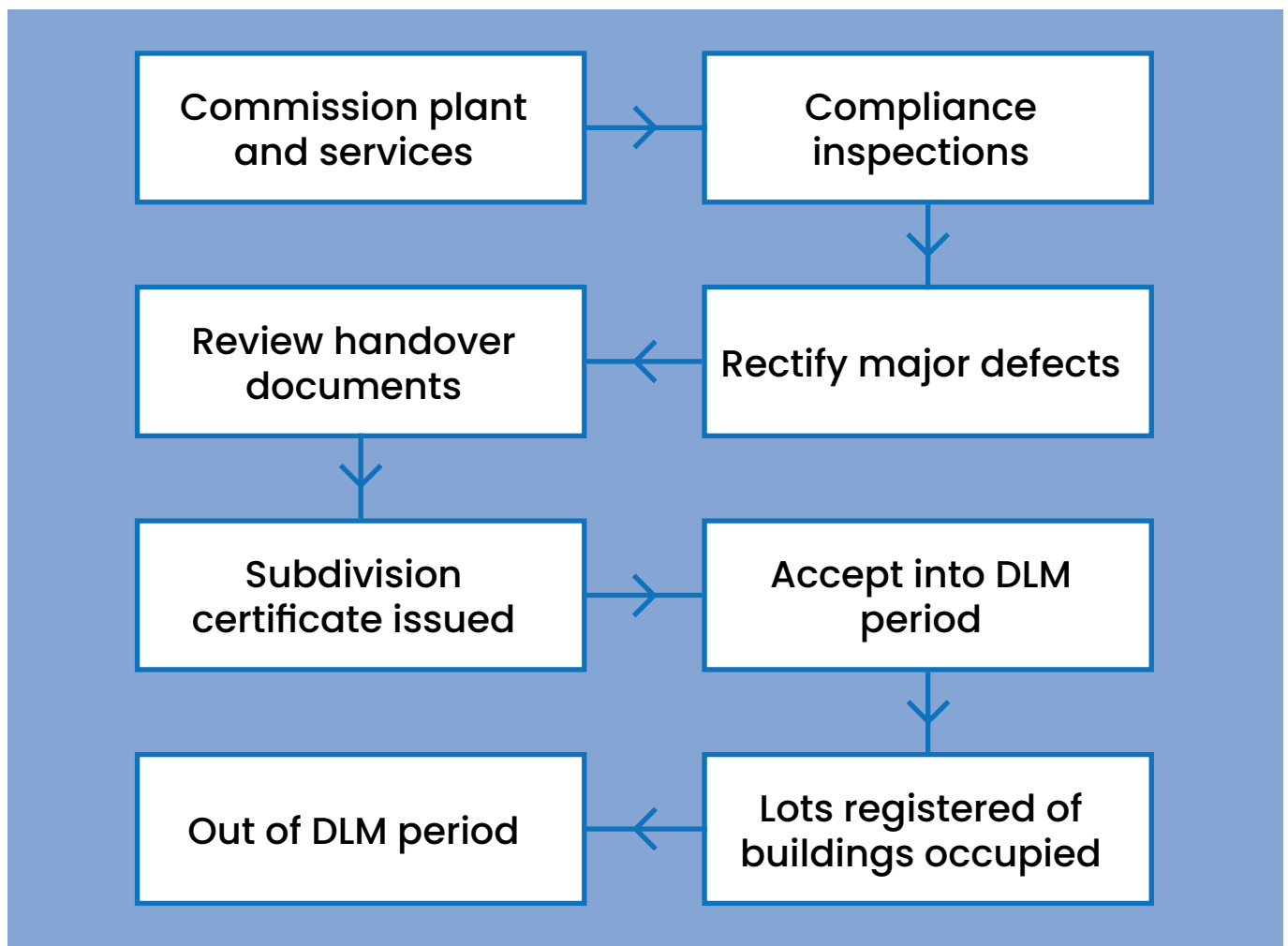


Figure 2: Handover process

D2 Commissioning

Hunter Water services

Once construction is completed, the Developer is to arrange for commissioning and testing of water supply and sewerage systems to the satisfaction of Hunter Water which may include:

- Pressure testing
- Disinfection
- Electrical commissioning of pumps and instrumentation, and
- Pipeline inspections by remote camera.

Stormwater CCTV

Remote camera inspections of completed stormwater infrastructure may be required at Council's discretion to verify tolerances and ensure there are no visual signs of damage incurred during construction, or obstruction to the flow of water.

CCTV requirements

Remote camera footage must be accompanied by a comprehensive written report prepared by a qualified and experienced operator in line with the requirements of WSA 05-2013 Conduit Inspection Reporting Code of Australia (or current version). The report is to be at the

Developer's cost and needs to highlight all defects and nonconformance for review by the Principal Certifier (for stormwater).

All lines must be flushed clear prior to CCTV inspection. The receiving manhole must be plugged, and debris pumped out without entering the public system.



D3 Compliance

Compliance certificate

A Compliance certificate is a requirement for physical works to be finished before handover and the Subdivision Certificate can progress. It should not be confused with the Contractor's practical completion, which is a separate contractual milestone between the Contractor and the Developer.

The Developer can arrange a compliance inspection with the relevant authority only once construction and commissioning of all the following public infrastructure is complete as required to service all lots or buildings:

1. Works required for safety or protection of the public or property
2. Works on private property (except work on residual land which will be controlled by the Developer may be incomplete)
3. Works which are explicitly required by DA consent conditions to be completed prior to release of a stage
4. Buildings and major engineering structures,
5. Roads
6. Stormwater drainage
7. Water supply
8. Sewerage
9. Electricity
10. Telecommunications
11. Bushfire protection measures
12. Flood policy or protection measures, and
13. Lot survey and service junction pegs.

Compliance inspection

The Developer is to arrange a time for representatives of the Contractor, Superintendent and Principal Certifier to attend the site and inspect all completed works. At least one representative of each party must be present. An attendee list should be notified to each party the day before inspection. Before the inspection, the Developer is to ensure:

1. The work site is clean and tidy, all roads have been swept free of mud and dust, and pits and manholes have been flushed
2. All manhole and pit lids, grates and fitting covers are open(able) for visual inspection
3. Arrange for a water truck to be available for flooding of kerb and gutter to detect sag points.

Inspection result

Within 1 week of the practical completion inspection, the Principal Certifier is to confirm in writing all matters such as defects and non-conformances that require attention. Reinspection of repaired defects may be required before the Subdivision Certificate or acceptance into DLM period can happen. The Principal Certifier may agree not to hold up the handover process for other non-major items by having the Developer lodge bond securities with Council. If further reinspection(s) is required because the Developer has not completed the minimum works listed, the Principal Certifier may charge the Developer a fee to cover its costs for the extra inspection(s).

D4 Rectification of defects prior to handover

Major defects

Major defects and non-conformances need to be rectified by the Developer before a compliance certificate, Subdivision Certificate, or acceptance into the DLM period, can occur. Major defects may include any of the following issues:

1. Pose a safety hazard to people, risk of environmental damage, risk of damage to property or infrastructure, or risk of added costs if not repaired soon
2. Prevent essential services (access, stormwater etc.) from operating once the development is released
3. Will be more difficult or costly to repair once the development is released, for example due to traffic control being required when traffic is using a road
4. Are located on private property so will not be accessible without inconveniencing the future owner once the lot is released.

Other defects

New assets should be free from wear and tear on the date of handover into DLM period and Subdivision Certificate.

The Principal Certifier may agree that any other (non-major) defects can be addressed during the DLM period and will not hold up the handover process, provided:

1. The Developer has committed to a timeframe for rectification, which is no longer than 3 months from the date of Subdivision Certificate or acceptance into DLM
2. Adequate bond securities are held by Council for the value of repairs (in addition to the usual DLM bond amount).

D5 Bond for deferred works

Deferral of Works

[EP&A Act s6.15\(2\)\(b\)](#) allows the Principal Certifier to agree to release the Subdivision Certificate and accept into DLM period even if some minor works are still outstanding. In the Cessnock area this can occur provided all the following are met:

1. The Developer has committed to a timeframe for completion of each item of outstanding work, which should generally be no longer than 3 months from the date of Subdivision Certificate or acceptance into DLM
2. Adequate bond securities are held by Council for the value of outstanding works (in addition to any DLM bond amount)
3. All infrastructure required for servicing lots listed at clause D3 Compliance must be complete and functional
4. For deferred works fronting lots that are to be released, future purchasers will be aware of the work, for example by inclusion of a letter and plan in the contract of sale. Disputes can arise from works such as street trees being established after purchase by a third party who was not aware, and Council may direct these enquiries to the Developer.

Minor outstanding works

Examples of works that can be deferred under the above clause (noting that an additional DLM may occur) may include;

- Street trees and landscaped area plantings
- Street furniture and playground equipment, and
- Line marking and signage where not required for traffic safety.

Additional DLM period

Upon completion of all deferred works, the Principal Certifier is to formally acknowledge commencement of the Developer's DLM period for these works, separately from the DLM period for works that have already been handed over.

D6 Documentation

Lodgement

Once the Developer has completed construction, a range of information must be submitted to the Principal Certifier to document that all infrastructure has been completed in line with the DA consent and specifications. Where these works are part of a subdivision, the documents are lodged with the Subdivision Certificate application. Otherwise, they are to be lodged at the start of the handover process before acceptance into a Defects Liability and Maintenance Period.

DA conditions schedule

The Developer is to lodge a schedule of all DA conditions along with a statement demonstrating how each condition has been complied with. Where multiple DAs apply to the works or subdivision, each one is to be included in the schedule.

NCR schedule

A schedule or register of each Non-Conformance Report that has been recorded by the Developer shall also be submitted, along with a summary of relevant information including the date submitted, the issue, the rectification action and whether rectification has been completed.

Notice of arrangement

A notice of arrangement is a certificate from the relevant utility authority certifying that the Developer has made satisfactory arrangements for provision of services to each lot. Satisfactory arrangements may mean practical completion of that type of work and/or payment of all required fees or contributions to the authority who will finish provisioning the services to each lot. This notice is required even when lots are approved to be 'off-grid' (not serviced) to the satisfaction of the relevant authorities. Notices of arrangement must be arranged by the Developer and submitted to the Principal Certifier (usually Council) from:

1. Council as the Road Authority, for example in the form of a Roads Act s138, or a Local Government Act s68 Certificate of Completion
2. Hunter water as the Water Authority, for example in the form of a Water Management Act s307 Certificate of Completion
3. Ausgrid for electricity supply works, and
4. NBN or Telstra for telecommunications supply works.

These certificates usually require assessment by the authority and may run separately to the Principal Certifier's assessment of the Subdivision Certificate, although they may require much of the same information as the Principal Certifier does. The Developer is advised to contact authorities to start each process as early as possible.

Work-as-executed information

Work-as-executed (WAE or as-built) records are a key part of the handover documentation. WAE drawings for public infrastructure must be based on the approved design plans and submitted in a digital CAD format (e.g., DXF) showing cadastral (lot) boundaries and other relevant site

features, with each entity being editable and contained on a suitably named layer. 'Red pen mark ups' of design plans in electronic format (e.g., PDF and CAD or GIS format) can only be accepted for small scale jobs with minor assets, as agreed by Council staff. This is so Council can efficiently import the data into the Geographic Information System.

The Superintendent shall certify each sheet in the WAE drawings 'is a true record of the works as executed'. They are to specifically show any as-constructed details relative to the approved design to highlight where these differ or do not conform.

Specific requirements for this information are set out in the relevant AUS-SPEC specifications, but include:

1. Pavement layer surfaces at top of subgrade, select fill zone, subbase, base and wearing course. This is to show the minimum pavement thicknesses have been achieved
2. Top of concrete for paths, cycleways and kerbs including all dimensions
3. Invert levels for sewerage and stormwater pits including full dimensions, pipe inlets and outlets with diameters, kerb and gutter type, table drains and other drainage elements such as flush points
4. Surveyed spot levels for earthworks, batters and particularly in areas subject to overland flow or flood inundation, and
5. Location of any fittings such as irrigation pipes, junctions, valves, stubs.

Quality Assurance

Council's AUS-SPEC standards require a range of tests and inspections to be undertaken during works, and these are to be submitted in relation to each QA lot to support the handover application, including (without limitation):

1. Completed Inspection and Test Plans, all signed Hold Points and Witness Points
2. QA lot register showing location and relevant details
3. Material supply compliance certificates
4. Compaction certificates for each pavement layer
5. Bitumen, asphalt and concrete batching and application records
6. Concrete sample strengths, and
7. Geotechnical bore logs, test pits, controlled fill supervision report and/or AS 2870 site classification report.

Expert certification

Wherever the DA conditions, Council's AUS-SPEC standards require a qualified person to certify a particular outcome or process has been met, a certificate to that effect needs to be submitted in support of the handover application.

The Superintendent shall also provide a general certification that:

1. All works have been completed in accordance with the DA consent conditions, Council's specifications, the approved design, and approved non-conformances
2. Any exceptions to the above are listed on the certificate.

Specialist reports

Other specialist reports to be submitted prior to handover are unique to the circumstances of each site and may be required for particular asset types or called out in the DA consent conditions. Examples may include:

- Manufacturer's operation or maintenance manuals (e.g. for sewage pump stations or proprietary products)
- Ecological works performance or outcome reports
- Contamination remediation reports
- Onsite detention operation and maintenance manuals, or
- Bio-retention basin maintenance manuals.

New Assets list

Council's standard Form "Cessnock Council – New Assets from Developments & Subdivisions" provides a summary of relevant information in regard to new pavements and is to be completed by the Developer for each road to be handed over.

Asset return

To assist Council in entering the capitalisation value of all works into its asset management database, the market value for construction (replacement) of all completed works (including labour, materials, profit and GST) is to be certified by the Superintendent on Council's standard Asset Return form.



D7 Defects Liability and Maintenance Period

Acceptance into Defect liability maintenance period

Where the Developer is dedicating infrastructure to the community (whether or not a Subdivision Certificate is involved), the Principal Certifier is to accept these assets into a twenty-four (24) month Defects Liability and Maintenance Period. The requirements of clauses D2 to D6 above are to be satisfied before acceptance of works into a DLM period. The start date of the DLM period should match the date the Subdivision Certificate is issued (if applicable). It must not be back dated to the date of compliance.

During the DLM period the Developer is required to do all of the following:

1. Fix any omissions, defects or failures which become apparent as directed by Council and at the Developer's cost
2. Water, weed, fertilise and treat illnesses for all vegetation plantings to aid establishment, and replace failed plantings like for like. Failures are likely to be caused by inadequate design, construction or maintenance of the planting medium
3. Maintain drainage basins and WSUD devices in a clean and tidy state until conclusion of the DLM.

Fair wear and tear, and issues proven to be caused by someone other than the Developer's representatives (such as graffiti or damage not arising from the design or construction) are generally Council's responsibility.

The DLM period is between Council and the Developer. It should not be confused with any defects liability Period which is between the Contractor and Developer. It is up to the Developer to ensure it is covered and can rectify any issues that occur during the DLM period.

DLM Bond

To guarantee the Developer's obligations in the DLM period, a DLM bond is to be lodged with and confirmed by Council, in addition to any other outstanding works or vegetation management bonds that will be required going forward.

The type and amount of the bond is to be as required at clause B7 Bond and is based on the values shown on the Asset Return that were accepted by the Principal Certifier.

Late subdivision registration

For subdivisions, where the plan of subdivision is not registered at NSW Land Registry Services within 3 months of the date the Subdivision Certificate is approved, Council is to extend the DLM period so it expires 21 months after the date that the plan of subdivision is registered at NSW Land Registry Services. This is to ensure that the infrastructure is used by the community during the DLM period, helping to reveal any issues or defects.

DLM period conclusion

Once the DLM period has expired, the Developer is to arrange a final DLM inspection with at least one representative being present from each of the Contractor, Superintendent and Council.

Participants should advise of the attendee list the day before the inspection. Inspection of pit and pipe assets by CCTV may also be required at the Developer's cost.

Any issues or outstanding works noted during the final inspection are to be completed at the Developer's cost prior to Council refunding the DLM bond security. Where the rectification involves construction of new assets, a separate twenty-four (24) month DLM period (and bond) is to apply to those new assets.

Once all issues are resolved, Council will confirm the Developer's DLM period is now discharged and the bond security amount to be refunded. The notice should confirm specifically which works are being let out of DLM period, to avoid confusion with other DLM periods (such as those being served by works which were deferred or outstanding).



D8 Subdivision Certificate

Subdivision certificate

Where the Developer is subdividing land, a Subdivision (or Strata) Certificate is the next required step, even for exempt or complying developments that don't require a DA. The Principal Certifier can issue a Subdivision Certificate provided:

1. The DA consent conditions are satisfied (in relation to that stage of the subdivision which is being released)
2. All outstanding infrastructure development contributions, fees and bonds are paid, as required by the DA conditions or (if applicable) a Voluntary Planning Agreement that the Developer has entered into
3. The requirements of clause D7 are satisfied for acceptance of community land and infrastructure into the DLM period, and
4. There are no restrictions on issue of the Subdivision Certificate as set out by [EP&A Act s6.15 \(formerly s109J\)](#).

The Principal Certifier may request revision of the submitted documents or further information to satisfy these requirements. In the event further information is required as a result of incorrect or known omissions by the Developer's representatives, the Principal Certifier may charge a fee for the additional time spent reviewing the application.

Registration of lots

Once the Subdivision Certificate is approved, it can be lodged with NSW Land Registry Services. Due to the formal lodgement requirements and review process involved, usually lodgement is best done on the Developer's behalf by their surveyor or solicitor. Following registration of the plan by NSW Land Registry Services, title in each of the lots will be created.

Handover to Council

In the rare case that the Principal Certifier is not Council, once the Subdivision Certificate has been issued by the Principal Certifier and the DLM period has commenced, Council becomes the authority for administering any further matters that may arise during the DLM period. The Principal Certifier must hand over to Council, within 7 days and in an electronic format, all asset information it has received and all approvals it has issued (including email correspondence where a determination has been made).

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PART E

Technical codes

Technical codes

E1 An introduction to the technical codes

The following Codes specify additional requirements for development proposals not covered in the previous Parts of the Handbook and includes references to those covered by Council's other documents (LEP, DCP or AUS-SPEC). They need to be considered at all stages of the development process: from Development Application through to handover and Subdivision Certificate approval.



E2 Fire

Bushfire protection

Generally, the requirements of the Rural Fire Service Planning for Bushfire Protection 2019 (PBP) as well as Council's AUS-SPEC Bushfire protection apply to all developments within mapped bushfire prone areas, whether or not they need to be referred to the Rural Fire Service under s100B.

Building protection

The National Construction Code provides for building fire safety requirements for different classes of building.

All buildings or approved building envelopes are to be serviced by hydrants in accordance with AS 2419.1, including requirements for maximum distance between hydrants, and maximum distance from a hydrant to an external point on a building. Where coverage is not available the Developer is required to upgrade the public mains or provide a private fire service onsite.

Outside of mains water supply areas, such as rural or rural-residential zones, buildings and building envelopes shall have a water tank with minimum storage volume, hose fittings and signage as required by PBP to facilitate firefighting.

Access

For all proposed development sites urban or rural, public and private vehicular access and manoeuvring areas for a Medium Rigid (as per AS/NZS 2890.2 Off-street Commercial Parking Facilities) fire truck is to be provided for any areas outside of hydrant coverage.

APZ in road reserves

Public land shall not be encumbered by proposed Asset Protection Zones, unless arrangements are made for the Developer to fund the net present value of all future costs for Council to maintain vegetation fuel loads to comply with APZ requirements. A Voluntary Planning Agreement may be one way to achieve this. The exception to this rule is public perimeter roads which may be used to provide an APZ, but only up to a maximum distance which is equal to the minimum width for the roadway type as specified in clause A10 Roadway concept. In other words, wider than necessary perimeter roads are not to be taken on by Council without satisfactory arrangements for funding.

APZ in public reserves

Asset Protection Zones conflict with the purposes of public land including nature reserve land, public parkland, and vegetated drainage basins, so land for these purposes should not be burdened by any APZ required as a result of nearby development, unless future costs are funded by the Developer as above. Where the land is to be counted the Developer will need to demonstrate that vegetation fuel loads on the land can be maintained for that purpose as follows:

1. Batter slopes are not to exceed a gradient of 1 in 4 (25%) for ease of access with equipment
2. Sparsely planted areas shall not exceed the maximum canopy covers set out by PBP, and access for mowing shall be practicable, and

3. Closely spaced planting areas may have difficulty complying with PBP. Where permitted, species are to be fire resistant with acceptably low fuel loads, and closely spaced with dense canopies or understorey foliage to minimise weed growth. An experienced bushfire planner will be required to certify that the design and as-planted landscaping meets the performance requirements for the APZ.

These reserves should be dedicated to the public as separate lots to ensure that the purpose of the land remains clear.

Fire Trails

Fire trails are required as follows for all vegetated public reserves to enable firefighters and regular maintenance vehicles to access the interior and perimeter of the reserve:

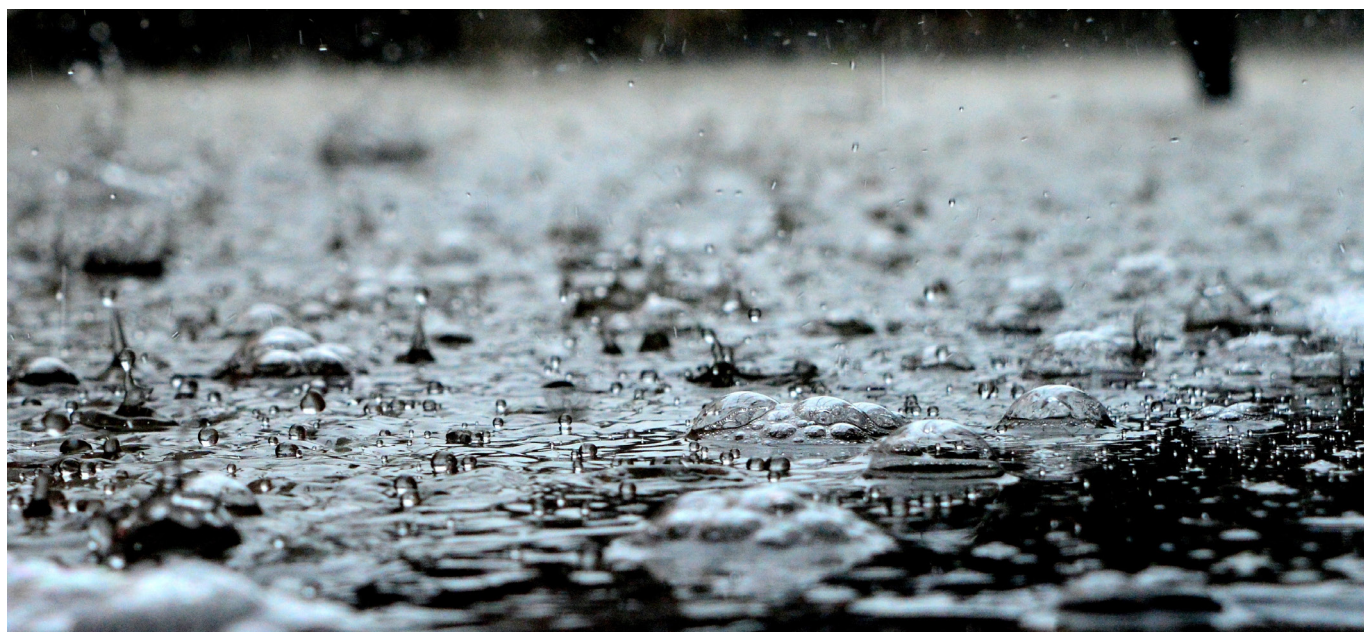
1. Legal ability to use fire trails on private land shall be provided by registering a right of access in favour of the Rural Fire Service or Council, but without obligating these authorities to maintain the trail in any way
2. Fire trails are to meet the requirements of the current version of Fire Trail Standards published by the Rural Fire Service, and
3. Requirements as set out in PBP also apply.

E3 Flooding

Flood Manuals

The requirements of Council's LEP, Development Control Plans and the NSW Flood Risk Management Manual (2023 Manual) apply to all developments in potentially flood prone areas.

Generally, development within flood prone land must be designed so as to ensure that flood patterns are not altered; otherwise, the impacts of those changes will need to be mitigated at the Developer's cost.



E4 Geotechnical and Soils

Slope stability

Where development is proposed on steep land potentially subject to landslip, a suitably qualified geotechnical consultant shall be engaged to prepare a report on the viability of the development in regard to slope stability.

Site classification

For all new lots where the building site (building envelope) is determined, a site classification report must be prepared by a qualified geotechnical engineer in accordance with AS 2870 before the Subdivision Certificate can be issued.

Erosion and sediment control plan

All construction permit applications are required to include an Erosion and Sediment Control Plan (ESCP) prepared by a suitably qualified person (such as an environmental or civil engineer) in accordance with current industry best practice. A relevant reference is the Landcom Managing Urban Stormwater: Soils and Construction (known as the 'blue book').

Once approved, the ESCP should form part of the Contractor's Soil and Water Management Plan for the development site, as the Contractor is responsible for preventing sediment from leaving the site following rainfall events and causing environmental damage. Effectiveness of onsite controls, including flocculation methodology, may be audited by Council and/or NSW EPA.

Where staged development is proposed, the developer shall provide an overall ESCP, as well as a detailed ESCP for each stage.

Acid Sulphate Soils

The Cessnock Council LEP Acid Sulfate Soil (ASS) mapping gives an indicative likelihood of encountering ASS to a high confidence based on field data and interpretation but may not always be accurate. ASS are soils that react when exposed to oxygen in the air, releasing sulfuric acid to the surrounds which can have devastating effects on flora and fauna, particularly in the marine environment. The Developer must ensure its agents always mitigate potential ASS risks to prevent environmental incidents.

Where potential ASS is encountered or suspected, the material is not to be disturbed or exposed except in accordance with an approved ASS Management Plan or as directed by a qualified environmental professional if urgent action is required. If the material has been exposed, professional advice is to be sought and may include capping to prevent oxidisation or disposal offsite to an approved waste management facility. Runoff water should not be allowed to flow through the affected area, and water from the affected area is not to be discharged to the surrounding environment or the stormwater or sewerage systems without adequate testing and treatment by an environmental professional.

An Acid Sulfate Soil Management Plan is to be prepared in consultation with an environmental professional in accordance with relevant guidelines including the NSW Acid Sulfate Soil Management Advisory Committee Acid Sulfate Soil Manual (1998) available on the NSW Environment Protection Authority website.

Foundations are to be specially designed for resilience to reactive or corrosive soils, particularly concrete in acidic soils.

Asbestos

Asbestos fibres can pose a risk of severe chronic respiratory illness including cancer if inhaled.

Historic dumping of building materials on land may potentially include Asbestos Containing Materials (e.g. in fragments of former roofing, cladding or insulation materials).

Asbestos may be naturally present in particular types of rock or soils occurring onsite, although uncommonly in the Cessnock Council area. Publicly available Naturally Occurring Asbestos maps provide an indication of known potential occurrence areas based on geological data. Refer to the NSW EPA or SafeWork NSW websites for links to this information.

If sources of asbestos are suspected onsite and disturbance during construction cannot be avoided, have samples tested by a NATA accredited laboratory to confirm its presence. If confirmed, Council and the Principal Certifier are to be notified, and an Asbestos Management Plan will need to be prepared in consultation with a licenced and qualified hygienist to minimise risks to workers and the public. NSW SafeWork is to be notified before commencing removal or work in contact with asbestos.

Contamination

A Developer needs to demonstrate that there is no potential history of contamination of the site, or otherwise a contamination assessment will be required with the DA. Subdivision proposals will need to demonstrate that any contamination is safe or will be remediated prior to the subdivision occurring, in accordance with NSW EPA guidelines and policies



E5 Traffic and Transport

Triggers for TIA

A Traffic Impact Assessment (TIA) is to be lodged by the Developer at the DA stage for traffic-generating development proposals in each of the following cases:

1. Meets any of the thresholds for referral to Transport for NSW under [SEPP \(Transport and Infrastructure\) 2021 Schedule 3](#)
2. For each road that provides access to the site with a speed limit greater than 60 km/h, the proposal is likely to result in an increase of 10% of Annual Average Daily Traffic on that road or 20 vehicle movements per day, whichever is higher, or
3. For each road that provides access to the site with a speed limit of 60 km/h or less, the proposal is likely to result in an increase of 20% of Annual Average Daily Traffic on that road or 40 vehicle movements per day, whichever is greater.

Where a TIA is not required, a traffic impact statement within the planning report will usually be enough. However, Council reserves the right to require a TIA for constrained sites or roads.

TIA procedure

A TIA should:

1. Be prepared by a suitably qualified and experienced person, who is independent of the Developer e.g. a traffic engineer
2. Be prepared in accordance with
 - AUSTROADS Guide to Traffic Management Part 12: Traffic Impacts of Developments
 - RMS publications Guide to Traffic Generating Developments (2002) and Guide to Traffic Generating Developments – Updated Traffic Surveys (2013), and
 - AS/NZS 2890 Parking Facilities set.
3. Describe the context of the proposal and relevant background information sources including infrastructure plans, pre-lodgement advice received from authorities, previous traffic data and reports
4. Define the scope and study area to include all roads which have potential to be measurably affected by traffic resulting from the development
5. Consult with Council as the Road Authority, and Transport for NSW if required – see clause A7 Referral to authorities for guidance. Existing strategic planning or modelling data within or near the study area may be relevant to the DA
6. Include a traffic study to gather data on the types and counts of existing (background) traffic within the study area, to complement missing or out-of-date data from existing sources. Explain the methodology used to collect the data and summarise the results which form the 'existing scenario' or 'baseline case'

7. Consider likely traffic growth in the study area over the next ten years and estimate the traffic for the 'existing scenario + 10 years' assuming the development has not gone ahead
8. Review other modes of transport that are available for the site (e.g. rail, buses, cycling, car-pooling, public and private) and/or propose initiatives that will encourage fewer vehicles on the road. Quantify how these will influence the traffic generation rate for the proposed development
9. Analyse the proposed development, stating all assumptions and data obtained from other sources to conclude on the likely traffic generated by the development. Explain the hours of operation and the mix of user types (e.g. staff, customers, residents, service vehicles etc)
10. Include a parking study for the proposal if it is of a type that may have high volume or variable parking demands, if there is likely to be an onsite shortfall of parking, or high utilisation of public or off-site parking. If parking rates for the type of proposal are not well documented in industry guides, consider including parking study data from a similar site that is already operating
11. Distribute and model trips across the network and the resulting network performance, using industry methods and/or software appropriate to the risk and complexity of the study area (e.g. SIDRA using linked intersections). Traffic needs to be considered both in terms of how it changes the Annual Average Daily Traffic (AADT) on roads, as well as how it changes the peak hourly trip rates. The peak hourly trips for the development may not necessarily coincide with the peak hourly trips for the road. Determine the likely 'post-development scenario'
12. Forecast the 'post-development scenario + 10 years' horizon by extending the above modelling
13. Compare the existing scenario with the post-development scenario over the ten-year horizon to determine likely impacts of the development on the road network
14. Consider whether a Road Safety Audit is warranted, e.g. due to existing crash history within the study area, and the combined effects or complexity of safety issues along the route
15. Identify road safety and efficiency concerns in line with the AUSTROADS Guide to Road Design and any RMS Supplements to AUSTROADS and propose solutions or upgrades to resolve these issues where the development contributes to them. Comment on the appropriate way to bring about these solutions, for example funding or construction by the Developer. Such considerations may include (without limitation):
 - Safe Systems approach
 - Level of Service, Degree of Saturation
 - Road geometry, curves, lane widths
 - Intersection treatments (e.g. roundabout / signalisation)
 - Turning lanes, acceleration and deceleration lanes
 - Queue storage distances
 - Sight distances
 - Speed zones
 - Gap acceptance
 - Lighting classification of roadways, or flag lighting at intersections or crossings, in accordance with AS/NZS 1158.
16. Summarise the recommendations and conclusions arising from the TIA.

E6 Water Sensitive Urban Design and Stormwater Management

Water Sensitive Urban Design (WSUD)

WSUD is a combination of principles and technical requirements for the management of all water cycles in the urban environment to maximise sustainable use of water as a resource. For subdivision and public infrastructure works these include rules for stormwater management. Council's Stormwater Management policy is available on the website.

Impervious areas

Where new hardstands or roofed areas are proposed, these will change the hydrological behaviour and response of a catchment to rainfall, by decreasing infiltration into the soil, increasing the rate of outflow, and decreasing the rate of absorption of pollutants (both excess nutrients and gross pollutants). The Developer is to mitigate any changes or impacts from the resulting stormwater runoff pattern by designing stormwater drainage and a treatment train to cater for it. To meet the required performance, the Developer's design may need to include water quality controls and water quantity controls (e.g. onsite detention basins, raingardens and so on).

Trunk drainage system

In land development, the concept of the major / minor stormwater systems is different to the definition of trunk drainage.

A trunk drainage line is a primary drainage system that receives stormwater runoff from upstream developed land and conveys it to the community end-of-line treatment facilities before release to the environment. Each trunk line generally serves a catchment or sub-catchment.

Major and minor drainage system

The major / minor system represents the entire drainage network (including trunk drainage) which is the sum of two related parts as follows.

The minor drainage system is defined as the network of pits and pipes that is designed (suitably sized) to convey stormwater runoff underground for all storm events up to a certain magnitude (Annual Exceedance Probability or AEP). For example, a minor system with a 5% AEP would be designed so that surface flooding or ponding only occurs on average once every 20 years.

The major drainage system is defined as the network of overland or surface flow paths which will convey stormwater runoff whenever the capacity of the minor system is exceeded (or blocked). So, for a minor system with a 5% AEP design capacity, the major system will show surface flows less than once every 20 years on average.

Upslope runoff

New developments must include suitably designed major and minor systems to cater for runoff from any catchment or land above the site, assuming that land is fully developed in accordance with the current land zoning. This may be achieved by diverting flows from upslope around the development site where convenient and in accordance with the DCP.

This means that if the development site receives runoff from R1 General Residential zoned land upstream, the design must include larger pipes to accommodate a fully developed urban area, even if the land is currently undeveloped. The reason for this is that the nexus or reason for creating piped drainage is both to convey flow safely and conveniently from the development, and also to protect the development from flows coming from upslope or upstream.

Sag points

At all local sag points within the public road network, the concept plan (DA) and detailed design must include land dedicated to the public (e.g. drainage or footpath reserves) to safely convey overland flows for all storm AEPs without impacting private property. For this reason, cul-de-sacs should be designed not to terminate downhill (as the stormwater runoff must be given a route to escape).

Overland Flow Paths

All overland flow paths and easements must be designed to convey overland flows entirely within the drainage path without impacting adjoining property, for all storm events up to 1% AEP, for example by reshaping the land to provide a wide gully.

Where a dedicated overland flow path, building or easement is proposed or required in a sag or gully for a significant catchment that runs through the site or is close to the shoreline of a water body, and the 1% AEP stormwater level is not known, a local flood study by an experienced hydrological engineer may be required.

Buildings located within overland flow paths shall be designed for compatibility or resilience to flooding in accordance with Council's flooding policies (e.g. non-habitable buildings).

Inter-allotment drainage

Stormwater drainage of freehold (Torrens) title properties is generally to serve no more than six (6) allotments before draining to a public road.

This inter-allotment drainage is to be formalised by an easement to drain water over the line of pipes and the surface flow path is to be regraded to contain overland flows within the site of the easement. The easement is to benefit each upstream owner, not Council.

Drainage reserves

Easements to drain water from public land over private property should generally not be permitted. A public reserve should be dedicated for this purpose instead.



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