



## Shire of Boddington Local Planning Policy No. 18 – Cut, Fill and Retaining Walls

### 1. Policy statement

The intention of this Policy is to provide guidance for landowners, subdividers and the Council to ensure that cut, fill and associated retaining walls are suitably located, designed and constructed to address safety, amenity and stormwater considerations.

### 2. Background and issues

The municipality, including the Boddington and Ranford townsites, contains various areas of moderately to steeper sloping land. Current building practices generally require buildings to be constructed on level pads. Cut, fill and the construction of retaining walls with associated building practices have contributed to more comfortable living conditions. However, cut, fill and retaining walls have the potential to impact on the natural topography and create safety, stormwater management, privacy and visual impact issues.

Relevant issues are more effectively addressed “upfront” in the planning/design process and preferably at the structure plan and scheme amendment stages. At the subdivision stage, the systematic development of retaining walls and associated stormwater management should generally be provided for the whole of the land as relevant to the application. It is often significantly more problematic, when individual landowners seek to establish retaining walls and address stormwater management at the Building Permit stage, compared to previously addressing matters earlier in the planning/design process.

Building large retaining walls on the boundaries of an individual lot has the potential to create conflict between neighbours and can adversely affect the use and enjoyment of adjoining land. The impacts of unregulated designs and finishes include on immediate neighbours and the locality as a whole. In addition to the impact of the actual retaining wall, there is a requirement to place a fence on top of the wall to maintain privacy and safety.

Unless approvals for retaining walls have been obtained at the subdivision stage, a Building Permit is required for any retaining wall that retains ground 0.5 metres and above as set out in Schedule 4 of the *Building Regulations 2012*.

### 3. Definitions

For the purposes of this Policy, the following definitions apply:

“Boundary Fence” – a fence that separates the lands of different owners.

“Batter” – a slope, as of the outer face of a wall, which recedes from backwards and upwards.

“Building” - any structure or an appurtenance whether fixed or movable, temporary or permanent, placed or erected upon land, and the term shall include dwellings and buildings appurtenant to dwellings such as carports, garages, verandahs and retaining walls, but shall

exclude a boundary fence, pergolas, garden sheds and the like, and swimming pools where no part is more than 600mm above surrounding ground level.

“Controlled Fill” – material that has been placed and compacted in layers by compaction equipment within a defined moisture range to a defined density requirement.

“Cut and Fill” – a process of localised gradation where material removed from one place is, subject to soil type, deposited a short distance away.

“Dwelling” - as defined in the *Residential Design Codes of Western Australia*, is “A building or portion of a building being used, adapted, or designed or intended to be used for the purpose of human habitation on a permanent basis by a single person, a single family, or no more than six persons who do not comprise a single family.”

“Height” – the difference between the natural ground level to the top of the finished earthwork level, or between the natural ground level to the top of the retaining wall.

“Natural Ground Level” – as defined by the *Residential Design Codes of Western Australia* is “The levels on a site which precede the proposed development, excluding any site works unless approved by the decision-maker or established as part of subdivision of the land preceding development”.

“Outbuildings” - are an enclosed non-habitable structure that is detached from any dwelling.

“Professional Engineer” as defined in the *Building Code of Australia* is “a person who is:

- (a) if legislation is applicable - a registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field; or
- (b) if legislation is not applicable -
  - (i) a Corporate Member of the Institution of Engineers, Australia; or
  - (ii) eligible to become a Corporate Member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.”

“R Codes” - the *Residential Design Codes of Western Australia*, adopted by the Western Australian Planning Commission including any updates.

“Retaining Wall” – a built wall intended to hold back water and/or earth. Under the *R Codes*, a retaining wall is included in the definition of a “building”.

“Subdivisional Retaining Wall” – refers to a wall designed to retain soil resulting from earthworks associated with compliance with a condition of subdivisional approval issued by the Western Australian Planning Commission.

“Terrace” – is a series of flat platforms (or steps) on the side of a hill, rising one above the other. The base of the terrace is taken to be the bottom of the lowest step with the top being the highest point of the highest step.

“Topsoil” – is taken to be the soil zone containing decomposed organic matter and seed source, generally not to exceed 150mm in depth.

#### **4. Objectives**

The objectives of this Policy are to:

- (a) assess the safety and appearance of retaining walls over 0.9 metre in height;

- (b) preserve the natural topography by limiting the extent of cut and fill on steeper slopes;
- (c) ensure that at the subdivision stage, an assessment is made in regards to the extent of cut, fill and retaining walls, based on the slope of the land, soil types, stormwater management, lot size and land use;
- (d) provide "acceptable development" standards that suit local conditions to limit the extent of cut and fill permitted on sites through the control of building pad levels;
- (e) minimise the impact of retaining walls on streetscapes/landscapes and the character and the amenity of adjoining/nearby properties;
- (f) assist in promoting housing and building designs which complement the natural slope of the land to reduce the building's bulk and visual impact;
- (g) establish an "acceptable development" height for boundary retaining walls and allow retaining walls to be established on the boundary;
- (h) provide further interpretation of the *Shire of Boddington Local Planning Scheme No. 2* (LPS2) in the assessment of subdivision and development applications;
- (i) provide greater certainty for landowners, the community and others and to assist in providing greater consistency in decision making by the local government; and
- (j) facilitate the effective and timely processing of retaining wall applications in accordance with this Policy.

## 5. Application of the Policy

This Policy applies throughout the municipality.

## 6. Links to Local Planning Scheme and other documents

This Policy relates to various requirements set in LPS2, the R Codes, various Local Planning Policies relating to development, the *Building Code of Australia* and the *Building Regulations 2012*.

This Policy addresses filling, excavation and the re-contouring of land if there is greater than a 0.9 metre change to the natural ground level and it is not within a flood plain or flood affected area, as set out in the Supplemental Provisions of LPS2. This Policy also provides amplification for retaining walls above 0.9 metres in height as set out in the Supplemental Provisions of LPS2.

## 7. Policy Provisions

### 7.1 Address considerations early in the planning/design process

The Council requires that applicants/landowners consider the approach to cut, fill, retaining walls and stormwater management early on in the planning/design process. This includes at the scheme amendment and structure planning stages which is refined at the subdivision stage. For steeper land, this may require larger lots, restricting the level of cut and fill development or requiring building construction techniques such as pole homes and stump systems. At the subdivision stage, the agreed form of land preparation is to be addressed with the local government with the approved approach to cut, fill, retaining walls and stormwater management to be implemented prior to the creation of titles.

### 7.2 When a Development Application is required

Most cut, fill and retaining walls do not require the submission of a Development Application. A Development Application is however required:

- (a) where there is cutting (excavation) or filling which is more than a 0.9 metre change to the natural ground level and is not part of a Development Application for associated development; or

- (b) where the retaining wall is 0.9 metres and above and is not part of a Development Application for associated development; or
- (c) any filling within the flood plain or flood affected areas.

As a general guide, no Development Application is required for a single house where the cutting (excavation) is within the approved building footprint as provided via a Building Permit.

A Building Permit is required for all retaining walls above 0.5 metres which are to be accompanied by plans which are certified by a professional engineer.

### 7.3 Key considerations

When assessing cut, fill and retaining walls, the local government will consider matters including:

- (a) the extent of the works and its location;
- (b) physical restrictions of the property (easements, unusual shape, excessive gradients);
- (c) any alternative design options which may exist;
- (d) structural integrity;
- (e) how stormwater will be addressed;
- (f) relative levels, finish floor levels and contours of adjoining and abutting properties;
- (g) ease of vehicle accessibility to the site;
- (h) retaining wall construction;
- (i) retaining wall colours when viewed from the street and/or from public places (colours should be sympathetic to the streetscape and to public places with generally natural and earthy colours); and
- (j) the existing streetscape and the amenity of the locality.

Any permanent excavation with a slope steeper than the angle of repose or natural slope of the site, is required to have retaining walls of masonry or other materials approved by the local government. The retaining wall is to be of sufficient strength and stability to retain the embankment together with any surcharged loads.

### 7.4 Engineering/geotechnical assessment and engineering certification

As part of a planning process, any retaining wall exceeding 0.9 metre in height shall be designed and certified by a professional engineer, with certified engineering drawings to be submitted to the local government for approval. As set out in section 7.2, a professional engineer is also required to certify all retaining walls above 0.5 metres as part of a Building Permit.

Retaining walls located within 1.0 metre of a dwelling (including neighbouring properties) are to be designed to accommodate any additional surcharge and shall be accompanied by a certificate from a professional engineer.

Information to be supplied with the engineering assessment, whether that is at the Subdivision Application, Development Application or Building Permit stages will generally include:

- (a) a site plan showing the main topographical features of the site including vegetation;
- (b) contours;
- (c) drainage lines and watercourses;
- (d) soil type/geotechnical assessment;
- (e) buildings and fences;
- (f) level of top of sand pad/fill;
- (g) finish floor level;
- (h) cut and fill section showing sub soil drainage and cut off drains;

- (i) cut and fill section (of greatest cut and fill) showing method of retention;
- (j) design and construction details of the retaining walls; and
- (k) other details required to address site specific issues.

The local government will require a compaction certificate at the Building Permit stage, including where fill is introduced to the site.

The landowner/applicant is responsible for meeting all costs associated with a geotechnical investigation and services undertaken by a professional engineer.

### 7.5 Subdivision

At the subdivision stage, unless justified and agreed to by the local government, a subdivider is to:

- (a) identify, through a slope analysis, all slopes of 1:10 and greater;
- (b) note the maximum extent of filling to be undertaken on individual lots is not to exceed 1.0 metre in height unless there are exceptional circumstances that do not impact adjoining or nearby properties;
- (c) construct retaining walls, up to a total maximum height of 3.0 metres along a property boundary or on other parts of the lot, to create a site capable and suitable for building construction including appropriate vehicle access between the lot and the public road;
- (d) ensure that where the proposed retaining wall is to be constructed on the outer boundary of the subdivision area, and it abuts an existing developed land parcel, the subdivider shall consult with the adjoining landowner/s to ensure the amenity of the neighbour's property is not compromised;
- (e) resolve stormwater management to ensure neighbouring properties are not impacted as a result of site works and construction; and
- (f) confirm retaining wall construction and colours.

The Council generally prefers that lots created through the subdivision process below 1,000m<sup>2</sup> are flat to gently sloping. The Council will support the following:

- (i) for lots below 500m<sup>2</sup>: a 0.5 metre (500mm) longitudinal slope and a 0.3 metre (300mm) crossfall; and
- (ii) for lots between 500m<sup>2</sup> – 999m<sup>2</sup>: a 1.0 metre longitudinal slope and a 0.5 metre crossfall.

The local government may require the subdivider to undertake a visual assessment to the requirements and satisfaction of the local government for land identified as "Landscape Protection" in the *Shire of Boddington Local Planning Strategy*, or the *Boddington-Ranford Townsite Strategy*, or on land containing slopes greater than 1:5.

Where the subdivision process has changed the natural ground levels, the relevant levels to be taken at the development/building stage are those established at the subdivision stage.

### 7.6 Cut (excavation)

Requirements relating to cut include:

- (a) where a slope is 1:5 or greater or the local government considers that a lot may contain unstable soil, a geotechnical report and/or a professional engineer's report is required;
- (b) any site with a slope of 1:5 or greater should not be developed using cut and fill techniques, unless it can be justified by the proponent and which is approved by the local government;

- (c) where a building is to be constructed partially on cut and partially on fill, the excavated material is to be placed outside the building footprint to form batters and embankments and the platform is to be filled with sand. Consolidated in even lifts, not exceeding 600mm, to produce a density which will resist seven blows per 300mm of standard 16mm diameter penetrometer. As an alternative, pile and beam foundations into natural uncut ground in the fill area are acceptable;
- (d) excavation below natural ground level is generally not visually obtrusive and is considered not to significantly impact on adjacent landowners if the application addresses the deemed-to-comply or design principles for site works of the R Codes. There is no maximum limit to the amount of excavation within the building footprint to allow for basements, garages and similar subject to the design and construction being certified by a professional engineer;
  - water discharge from the site during development is to be controlled by the use of ripping, contour/grade banks, sumps and other approved measures to attenuate water leaving the site;
  - access tracks are to be located in such a manner as to minimise required earthworks; and
  - all exposed embankments are required to be suitably stabilised and generally landscaped. The local government encourages landowners/proponents to strip the topsoil, stockpile it, and redistribute the topsoil during the landscaping phase. A landscaping plan should be consistent with that set out in *Local Planning Policy 11 Landscaping and Revegetation*.

## 7.7 Fill

### *7.7.1 General*

Filling above the natural ground level can result in visually prominent development and can create overlooking and/or overshadowing. In accordance with the R Codes, overlooking and overshadowing are valid planning considerations. The loss of views is however not a valid planning consideration if the subdivision/development complies with the R Codes, the Local Planning Strategy and/or LPS2.

On land zoned "Residential", "Special Residential", "Rural Residential" and "Special Use" (allocated as Residential, Special Residential and Rural Residential), filling should not exceed 1.0 metre in height unless justified by the proponent to the satisfaction of the local government.

The importation of fill to increase the building pad level shall generally be limited to no more than 0.3 metre above the average building pad level of the site. Sites where subsurface rock or clay occurs, which requires the importation of more than 0.3 metre of fill, shall be substantiated by a professional engineer's report that demonstrates such a presence.

Filling within the front setback is only supported if:

- (a) a terrace within 1.0 metre of the front boundary is not to exceed 0.5 metre in filling;
- (b) subsequent terraces should generally be of equal height and equally spaced across the slope;
- (c) the vertical ride of terraces are not to exceed the horizontal return; and
- (d) terraces are spaced a minimum of 1.0 metre apart.

Where required due to issues relating to flood risk, stormwater management, effluent disposal or other considerations, the Council will generally require subdividers to install fill, prior to the creation of new titles, for proposed lots less than 1000m<sup>2</sup> unless appropriately justified by the proponent. The Council may require fill to be installed prior to the creation of new titles for lots 1000m<sup>2</sup> and larger to ensure that the lot is capable of accommodating proposed development.

### *7.7.2 Filling in flood prone land*

A Development Application is required for all retaining walls and fill within flood prone land either as set out in the *Shire of Boddington Floodplain Management Strategy* (floodway or flood fringe) or for other flood risk land in the opinion of the local government. The local government will consider the Floodplain Management Strategy, *Local Planning Policy 6 Development in Flood Affected Areas* and advice from the Department of Water in determining Development Applications.

## 7.8 Retaining walls

### *7.8.1 General*

The Council will generally require subdividers to install retaining walls, prior to the creation of new titles, for proposed lots less than 1,000m<sup>2</sup> unless appropriately justified by the proponent. The Council may require retaining walls to be installed prior to the creation of new titles for lots 1,000m<sup>2</sup> and larger where site conditions are steep, there are issues associated with building construction, stormwater management or vehicular access, where a coordinated approach is required or to ensure that the lot is capable of accommodating proposed development.

Requirements relating to retaining walls include:

- (a) unless the retaining walls were provided as part of the subdivision, or part of a previous dwelling or approved building, retaining walls in areas subject to the R Codes will be treated as though they are a building wall, with the same setbacks from property boundaries as required for a dwelling;
- (b) unless otherwise provided for within this Policy, retaining walls will be required where cut or fill is equal to, or in excess, of 1.0 metre;
- (c) as outlined in section 7.4, retaining walls of 0.9 metre or greater in height require development approval, a Building Permit and an engineer's certificate before construction is to commence. Unless approvals for retaining walls have been obtained at the subdivision stage, a Building Permit is required for any retaining wall that retains ground 0.5 metres and above as set out in Schedule 4 of the *Building Regulations 2012*;
- (d) in areas subject to the R Codes, a retaining wall is generally not to exceed 3.0 metres in height;
- (e) where an unprotected embankment (the face area of a section of fill that is not subject to retaining or other forms of stabilisation) is proposed, no retaining will be required where it is in accordance with *Building Code of Australia*. Such embankments are to be landscaped in accordance with an approved landscaping plan;
- (f) where a retaining wall is proposed on a boundary, a licensed surveyor will generally be employed by the landowner/applicant to set out the boundaries prior to the commencement of any works; and
- (g) retaining walls which are subject to development approval are required to be finished to a professional standard to the satisfaction of the local government.

### *7.8.2 Retaining on property boundaries and boundary fences/walls*

The maximum height of a retaining wall on a neighbouring property boundary is to be no higher than 3.0 metres.

Any change of level along a property boundary must be retained by a retaining wall where the soil cannot be maintained on its natural angle of repose (slope of ratio in relation to the type of soil) within the property boundary.

The maximum combined height of a retaining wall and a fence on a property boundary is 4.2 metres above natural ground level. Subject to applicant and neighbouring landowner

requirements, the combined height of the retaining wall and fence exceeding 3.0 metres in height may comprise a "visually permeable fence".

No Development Application is required for side or rear fences/walls throughout the municipality unless it is within the floodway. LPS2 sets fencing standards in certain zones.

A Development Application is required for front fences in the Residential, Special Residential, Special Use (allocated as Residential and Special Residential) and Commercial zones where the fence is above 1.2 metres. If the fence is above 1.2 metres, unless justified by the applicant, the fence should be visually permeable.

### *7.8.3 Retaining within the confines of the property*

To conserve streetscape amenity, the local government will control retaining within the front setback of sites. For applications subject to the R-Codes, the local government will require the applicant to either address the deemed-to-comply or design principles for site works. For applications not subject to the R-Codes, the retaining walls in the front setback area should generally be no higher than 2.0 metres.

Retaining within 3.0 metres of a neighbouring property boundary is to be no higher than 3.0 metres.

Beyond 3.0 metres of the property boundaries (other than in the front setback), retaining is to be generally no higher than 3.0 metres unless suitably justified by the applicant.

Where retaining is undertaken for the purpose of constructing a building, the external walls of the building should be designed as retaining walls and contain the soil created by the cutting and filling.

Minor retaining within the lot is acceptable to provide for garden areas, open spaces and to accommodate vehicle movements provided it is structurally sound and stormwater is appropriately controlled.

## 7.9 Drainage

The Council requires subdividers to appropriately address drainage and stormwater management for all proposed lots prior to the creation of new titles. All proposed lots are required to be capable of accommodating proposed development.

The Council will require applicants to ensure that stormwater is appropriately managed so as not to create undesirable impacts to adjoining/nearby properties. The Council prefers that stormwater disposal is retained or at least detained within the site wherever possible. If stormwater cannot be retained on site, stormwater should be directed to a Shire stormwater legal point of discharge.

As part of undertaking any cut, fill and retaining on a property, stormwater is not to be redirected onto adjoining properties. Additionally, adequate stormwater management should be provided during excavations and construction.

## 7.10 Location of essential services

Essential services, particularly when protected by an easement, should be located prior to excavation or works associated with the construction of a retaining wall. The proponent is to undertake required due diligence with servicing authorities including via *Dial Before You Dig*. Suitable design and materials should be used in regards to excavation in these areas.



### 7.11 Building and Landscape Design Guidelines

The Council supports subdividers formulating Building and Landscaping Guidelines for specific areas to guide the design of the subdivision/development to achieve a shared vision. The guidelines can further assist to promote sustainability, respond to site characteristics (including cut, fill and retaining walls), provide a sense of place and assist to ensure that landowner investment is protected by maintaining similar standards for the development of neighbouring properties. The guidelines may be adopted as a Local Planning Policy. If a Building and Landscaping Guideline is adopted as a Local Planning Policy, it will override this Policy if there are any inconsistencies.

A Development Application is required for cut, fill and retaining walls which are inconsistent with Building and Landscaping Guidelines which are adopted as a Local Planning Policy.

### 7.12 Onus of proof

The "onus of proof" rests with the applicant to justify their Development Application and variations to this Policy, and for applicants to justify their application for a Building Permit.

## **8. Administration**

### 8.1 Matters to be addressed prior to formally lodging the Development Application

Proponents are encouraged to discuss proposals that seek to vary Policy requirements with the Shire administration early on in the planning/design process and prior to the formal lodgement of a Development Application.

### 8.2 Application requirements

Development Applications are to include the following:

- (a) the requirements set out in Clauses 62 and 63 of Schedule 2 in the *Planning and Development (Local Planning Schemes) Regulations 2015* which includes a site plan and setting out the location of easements on the property;
- (b) details of intended use/s;
- (c) filling in the Development Application form;
- (d) payment of the Shire Development Application fee; and
- (e) a fully dimensioned cross sectional detail.

Should a Development Approval be issued, it may also be necessary for the proponent to submit a Building Permit Application (which gains necessary approval) prior to undertaking construction.

Subject to the proposed location and the scale of the proposed development, the local government may also require the applicant at the Subdivision Application, Development Application or Building Permit stages to provide:

- (i) a fully dimensioned cross sectional detail which shows the following for the proposed retaining wall:
  - overall height and thickness;
  - type of construction and material;
  - reinforcement details;
  - footing details;
  - drainage behind the retaining wall if applicable;

- manufacturer's specifications; and
- waterproofing details;
- (ii) detailed contour information and a site plan prepared by a licenced surveyor or professional retaining wall contractor depicting:
  - all existing and proposed natural ground levels (in RLs) with spot levels provided at 0.5 metre intervals for the subject site and finished floor levels immediately adjoining the property;
  - all existing or proposed built structures and their finish floor levels;
  - top of wall and bottom of wall heights of all proposed and existing retaining walls in relative levels shown at each change in height;
  - Finish Floor Levels of neighbouring dwellings; and
  - a reference datum point;
- (iii) the provision of a professional engineers certification (including for retaining walls over 0.9 metres in height for planning proposals and 0.5 metres and above for a Building Permit);
- (iv) written information justifying why any requirements of this Policy should be varied; and
- (v) any other plan or information that the local government may reasonably require to enable the application to be determined.

### 8.3 Consultation with affected landowners and/or stakeholders

Where an application for a retaining wall is made that does not comply with the requirements as set out in this Policy, or is likely to have off-site impacts, the application may be referred to adjoining/nearby landowners, State Government agencies or other stakeholders for comment.

### 8.4 Assessing the Development Application

In assessing a Development Application, the local government will have regard to matters including the following:

- (a) lot size, shape and features;
- (b) the location of the cut, fill and retaining wall;
- (c) intended use of the site;
- (d) this Policy and LPS2;
- (e) information provided by the applicant and any submissions received; and
- (f) any other circumstance and factor affecting the application in the opinion of the local government.

Should a Development Application not comply with the requirements of this Policy, the application may be referred to Council for consideration.

Where objections are received and the objections are not able to be adequately dealt with through conditions of approval, the application will be referred to Council for determination.

The Council may refuse a Development Application where the application is inconsistent with this Policy or LPS2, or based on information set out in any submissions received.

### 8.5 Building Permit

A Building Permit is required for all retaining walls 0.5 metres and above, and for all retaining walls within 1.0 metre of a dwelling or other building regardless of the height of the retaining wall.

### 8.6 Other Approvals

Approval for a retaining wall may also be required by other government departments or servicing authorities. It is the responsibility of the applicant/owner to obtain all required approvals. For example, at the time of adopting this Policy, retaining walls of 1.2 metres or greater in height require approval from the Water Corporation.

Related Policies	<i>LPP Urban Drainage Contribution LPP 6 Development in Flood Affected Areas LPP 15 Buildings and Structures in and near Drainage Easements LPP 17 Stormwater Management</i>
Related Procedures and Documents	<i>Planning and Development (Local Planning Schemes) Regulations 2015, Building Code of Australia</i>
Delegation Level	Chief Executive Officer, Principal Environmental Health Officer/Building Surveyor
Adopted	Originally adopted 16 April 2013 Revised policy granted final adoption on 14 March 2017