9.4.3 Site earthworks code

9.4.3.1 Application - Site earthworks code

This code applies to undertaking development, if:

1. the development has been categorised as either accepted development subject to requirements or assessable development - code assessment, and this code is identified as applicable to that development in the assessment benchmarks for assessable development and requirements for accepted development column of a table of assessment (Part 5);

2. the development has been categorised as assessable development - impact assessment (Part 5).

When using this code, reference should be made to section 5.3.1 'Process for determining the category of development and category of assessment for assessable development' and, where applicable, section 5.3.2 'Determining the category of development and category of assessment'.

For accepted development subject to requirements or assessable development under this Code:

1. Part A of the code applies only to accepted development subject to requirements;

2. Part B of the code applies only to assessable development.

9.4.3.2 Purpose - Site earthworks

1. The purpose of the Site Earthworks code will be achieved through the following overall outcomes:

    a. Safe, convenient, functionally efficient and attractive communities and environments are created, that are consistent with the character and amenity of the relevant zone.

    b. The development manages stormwater to:

        i. ensure the discharge of stormwater does not adversely affect the quality, environmental values or ecosystem functions of downstream receiving waters;

        ii. prevent stormwater contamination and the release of pollutants;

        iii. maintain or improve the structure and condition of drainage lines and riparian areas;

        iv. avoid off-site adverse impacts from stormwater.

    c. Earthworks are managed to be safe and have minimal impacts on adjoining or adjacent premises, the streetscape or the environment.

    d. The construction of dams, filling and excavation minimise adverse impacts on the amenity, stability, drainage, Council or public sector entity maintained infrastructure on or adjacent to the land and environmental quality of the lot and surrounding area.

    e. Filling and excavation avoids areas subject to constraint, or environmental value. Where filling and excavation cannot avoid these identified areas, it responds by:

        i. adopting a 'least risk, least impact' approach when designing, siting and locating development in any area subject to a constraint or environmental value to minimise the potential risk to people, property and the environment;
        ii. ensuring no further instability, erosion or degradation of the land, water or soil resource;

iii. when located within a Water supply buffer area, complying with the Water Quality Vision and Objectives contained in the Seqwater Development Guidelines: Development Guidelines for Water Quality Management in Drinking Water Catchments 2017.
iv. protecting native species and protecting and enhancing species habitat;
v. protecting and preserving the natural, aesthetic, architectural historic and cultural values of significant trees, places, objects and buildings of heritage and cultural significance;
vi. where located in an overland flow path:

A. filling and excavation does not impact on the conveyance of the overland flow for any event up to and including the 1% AEP for the fully developed upstream catchment;
B. filling and excavation directly, indirectly and cumulatively avoid an increase in the severity of overland flow and potential for damage on the premises or other premises, public lands, watercourses, roads or infrastructure.

9.4.3.3 Requirements for assessment

If development is to be categorised as accepted development subject to requirements it must comply with the requirements for accepted development set out in Part A, Table 9.4.3.1. Where the development does not meet a requirement for accepted development (RAD) within Part A Table 9.4.3.1, the category of development changes to assessable development under the rules outlined in section 5.3.3. (1), and assessment is against the corresponding performance outcome (PO) identified in the table below. This only occurs whenever a RAD is not met, and is therefore limited to the subject matter of the RADs that are not complied with. To remove any doubt, for those RADs that are complied with, there is no need for assessment against the corresponding PO.

Requirements for accepted development (RAD)	Corresponding PO
RAD1	PO1
RAD2	PO1
RAD3	PO1
RAD4	PO1
RAD5	PO2
RAD6	PO1
RAD7	PO3
RAD8	PO3
RAD9	PO5
RAD10	PO5
RAD11	PO5
RAD12	PO6
RAD13	PO7
RAD14	PO7
RAD15	PO7
RAD16	PO7

Requirements for accepted development (RAD)	Corresponding PO
RAD17	PO7
RAD18	PO8
RAD19	PO8
RAD20	PO10
RAD21	PO10
RAD22	PO11
RAD23	PO11
RAD24	PO7
RAD25	PO13
RAD26	PO12
RAD27	PO7
RAD28	PO7
RAD29	PO7
RAD30	PO7
RAD31	PO7
RAD32	PO7
RAD33	PO7
RAD34	PO7
RAD35	PO7
RAD36	PO7
RAD37	PO7
RAD38	PO7
RAD39	PO15
RAD40	PO16-PO27
RAD41	PO28
RAD42	PO29
RAD43	PO30
RAD44	PO30
RAD45	PO30
RAD46	PO31
RAD47	PO32
RAD48	PO33

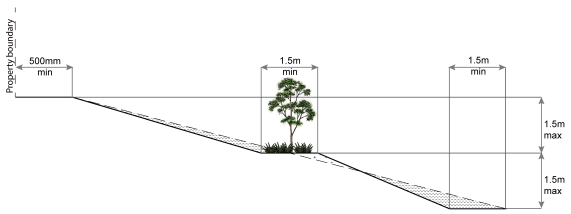
Requirements for accepted development (RAD)	Corresponding PO
RAD49	PO34
RAD50	PO35-PO37
RAD51	PO40

Part A - Requirements for accepted development - Site earthworks

Table 9.4.3.1 Requirements for accepted development - Site earthworks

Requirements for accepted development	
General requirements	
Site works and construction management	
RAD1	Works incorporate temporary stormwater runoff, erosion and sediment controls and trash removal devices designed in accordance with the Urban Stormwater Quality Planning Guidelines, State Planning Policy, Schedule 10 - Stormwater management design objectives, Planning scheme policy - Stormwater management and Planning scheme policy - Integrated design including, but not limited to the following: a. stormwater is not discharged to adjacent properties in a manner that differs significantly from pre-existing conditions; b. stormwater discharged to adjoining and downstream properties does not cause scour or erosion of any kind; c. stormwater discharge rates do not exceed pre-existing conditions; d. the design storm for all temporary diversion drains and sedimentation basins in accordance with Schedule 10 - Stormwater management design objectives; e. ponding or concentration of stormwater does not occur on adjoining properties.
RAD2	Stormwater run-off, erosion and sedimentation controls are constructed in accordance with Planning scheme policy - Integrated design (Appendix C) prior to commencement of any filling or excavation and are maintained and adjusted as necessary at all times to ensure their ongoing effectiveness. Note - The measures are adjusted on-site to maximise their effectiveness.
RAD3	The completed earthworks area is stabilised using turf, established grass seeding, mulch or sprayed stabilisation techniques to control erosion and sediment and dust from leaving the property.
RAD4	Existing street trees are protected and not damaged during works. Note - Where development occurs in the tree protection zone, measures and techniques as detailed in Australian Standard AS 4970 Protection of trees on development sites are adopted and implemented.
RAD5	No dust emissions extend beyond the boundaries of the site during soil disturbances and construction works.

RAD6	Any damage to Council land or infrastructure is repaired or replaced to the satisfaction of Council.
RAD7	All native vegetation to be retained on site is temporarily fenced or protected prior to and during filling and excavation. Note - No parking of vehicles or storage of machinery or goods is to occur in these areas during development earthworks.
RAD8	Disposal of cleared vegetation is managed in one or more of the following ways: a. all cleared vegetation, declared weeds, stumps, rubbish, car bodies, scrap metal and the like are removed and disposed of in a Council land fill facility; or b. all native vegetation with a diameter below 400mm is to be chipped and stored on-site. Note - No burning of cleared vegetation is permitted.
RAD9	Construction traffic including contractor car parking is controlled in accordance with a traffic management plan, prepared in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) to ensure all traffic movements to and from the site are safe.
RAD10	Any material dropped, deposited or spilled on the road(s) as a result of construction processes associated with the site are to be cleaned at all times.
RAD11	Access to the development site is obtained via an existing lawful access point.
RAD12	Filling or excavation is carried out within the following times: a. Monday to Saturday (other than public holidays) between 6:30am and 6:30pm on the same day; b. no work is to be carried out on Sundays or public holidays.
Earthworks	
RAD13	All cut and fill batters are provided with appropriate scour, erosion protection and run-off control measures including catch drains at the top of batters and lined batter drains as necessary.
RAD14	Stabilisation measures are provided, as necessary, to ensure long-term stability and low maintenance of steep slopes and batters. Note - Inspection and certification of steep slopes and batters may be required by a suitably qualified and experienced RPEQ.
RAD15	All fill and excavation is contained on-site and is free draining.
RAD16	All fill placed on-site is: a. limited to that necessary for the approved use; b. clean and uncontaminated (i.e. no building waste, concrete, green waste, actual acid sulfate soils, potential acid sulfate soils or contaminated material etc.).
RAD17	The site is prepared and the fill placed on-site in accordance with AS3798. Note - The fill is to be inspected and tested in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.

RAD18	No filling or excavation is undertaken in an easement issued in favour of Council or a public sector entity. Note - Public sector entity is defined in Schedule 2 of the Act.
RAD19	Filling or excavation that would result in any of the following is not carried out on-site: a. a reduction in cover over any Council or public sector entity infrastructure service to less than 600mm; b. an increase in finished surface grade over, or within 1.5m on each side of, the Council or public sector entity infrastructure above that which existed prior to the earthworks being undertaken; c. prevent reasonable access to Council or public sector entity maintained infrastructure or any drainage feature on, or adjacent to the site for monitoring, maintenance or replacement purposes. Note - Public sector entity is defined in Schedule 2 of the Act. Note - All building work covered by QDC MP1.4 is excluded from this provision.
RAD20	Where the earthworks is associated with a dam and on-site water impoundment (other than swimming pools), batter slopes are no steeper than the following: a. outer slope of dam wall – 1 vertical to 2 horizontal; b. all internal slopes – 1 vertical to 4 horizontal.
RAD21	Cut and fill batters, (other than batters to dams and water impoundments), have a finished slope no steeper than the following:- a. any cut batter is no steeper than 1V in 4H; b. any fill batter, (other than a compacted fill batter), is no steeper than 1V in 4H; c. any compacted fill batter is no stepper than 1V in 4H.
RAD22	Any retaining walls or embankments are setback at least the equivalent height of the wall or embankment from any boundary of the site.
RAD23	Any embankments more than 1.5 metres in height are stepped, terraced and landscaped. **Figure - Embankment** 
RAD24	All filling or excavation works are completed within 3 months of the commencement date.

RAD25	Filling or excavation undertaken on the development site are shaped in a manner which does not: a. prevent stormwater surface flow which, prior to commencement of the earthworks, passed onto the development site, from entering the land; or b. redirect stormwater surface flow away from existing flow paths; or c. divert stormwater surface flow onto adjacent land, (other than a road), in a manner which: i. concentrates the flow; or ii. increases the flow rates of stormwater over the affected section of the adjacent land above the situation which existed prior to the diversion; or iii. causes actionable nuisance to any person, property or premises.
RAD26	The area subject to filling or excavation does not contain any utility services or on-site effluent disposal areas.
RAD27	A preliminary geotechnical assessment of the suitability of the dam site in terms of soil and slope stability has been carried out by an appropriately experienced and quality geotechnical engineer to confirm the dam site is suitable and stable.
RAD28	All fill (including the embankment) for dams is setback a minimum of 10 metres from any property boundary.
RAD29	The dam embankment is constructed with a clay core and cut-off trench to prevent seepage through the embankment. The cut-off trench is taken down a minimum of 600mm into impervious soil and back filled with good quality clay that is thoroughly compacted.
RAD30	Earth embankments are fully and thoroughly compacted.
RAD31	The top water surface in the private dam is setback a minimum: a. 10.0 metres from any property boundary; b. 30.0 metres from the irrigation area of a household sewage treatment plant (secondary treatment); c. 50.0 metres from the irrigation area of a septic trench (primary treatment).
RAD32	Dams have an overflow facility which: a. is of sufficient capacity to fully contain the flows from a 10% AEP storm event over the entire catchment of the water impoundment; b. is positioned so that the flows from a 10% AEP storm event over the entire catchment of the water impoundment do not surcharge over any dam wall; c. is lined with velocity dissipation, flow dispersion and erosion protection mechanisms able to withstand the dynamic forces of a 10% AEP storm event over the entire catchment of the dam; d. is wide enough to provide for sheet flow; e. directs flows towards existing flow paths.
RAD33	Dams with the following features are designed, constructed and inspected by a suitably qualified and experienced RPEQ: a. an embankment height greater than 3 metres at any point; or b. a top water level surface area greater than 5,000m^2; or

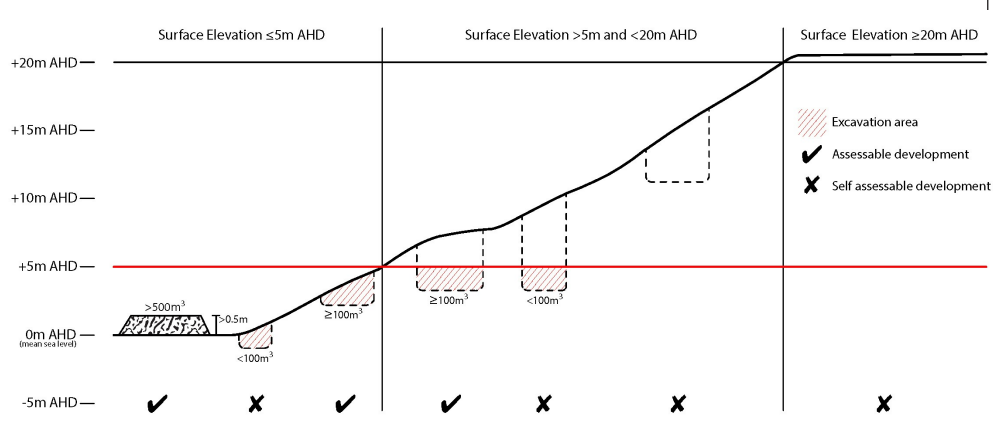
	c. with an impoundment volume exceeding 5 megalitres; or d. where a dam break would threaten the lives of occupiers of downstream premises.
RAD34	Dam embankments are constructed by a suitably experienced and qualified construction contractor.
RAD35	The freeboard between the top water level and the top of the embankment is not less than 1 metre.
RAD36	Dams with an embankment height up to 3 metres have a minimum embankment crest width of 2.5 metres
RAD37	Dams have a spillway bypass with sufficient flow capacity to prevent floodwater overtopping the dam embankment.
RAD38	Dam spillways have surface protection to prevent erosion and scour during all flood events.

Values and constraints requirements

Note - The relevant values and constraints requirements do not apply where the development is consistent with a current Development permit for Reconfiguring a lot or Material change of use or Operational work, where that approval has considered and addressed (e.g. through a development footprint plan (or similar in the case of Landslide hazard) or conditions of approval) the identified value or constraint under this planning scheme.

Acid sulfate soils - (refer Overlay map - Acid sulfate soils to determine if the following requirements apply)

Note - Planning scheme policy - Acid sulfate soils provides guidance for requirements for accepted development that has the potential to disturb acid sulfate soils i.e. development involving filling or excavation works below the thresholds of 100m^3 and 500m^3 respectively.

RAD39	Filling or excavation works, other than dams, does not involve: a. excavation or otherwise removing of more than 100m^3 of soil or sediment where below 5m Australian Height Datum AHD, or b. filling of land of more than 500m^3 of material with an average depth of 0.5m or greater where below the 5m AHD. 

Environmental areas (refer Overlay map - Environmental areas to determine if the following requirements apply)

Note - The following are excluded from the native clearing provisions of this planning scheme:

a. Clearing of native vegetation located within an approved development footprint;

b. Clearing of native vegetation within 10m from a lawfully established building reasonably necessary for emergency access or immediately required in response to an accident or emergency;

c. Clearing of native vegetation reasonably necessary to remove or reduce the risk vegetation poses to serious personal injury or damage to infrastructure;

d. Clearing of native vegetation reasonably necessary to construct and maintain a property boundary fence and not exceed 4m in width either side of the fence where in the Rural, Rural residential and Environmental Management and Conservation zones. In any other zone, clearing is not to exceed 2m in width either side of the fence;

e. Clearing of native vegetation reasonably necessary for the purpose of maintenance or works within a registered easement for public infrastructure or drainage purposes;

f. Clearing of native vegetation in accordance with a bushfire management plan prepared by a suitably qualified person, submitted to and accepted by Council;

g. Clearing of native vegetation associated with removal of recognised weed species, maintaining existing open pastures and cropping land, windbreaks, lawns or created gardens;

h. Grazing of native pasture by stock;

i. Native forest practice where accepted development under Part 1, 1.7.7 Accepted development.

Note - Definition for native vegetation is located in Schedule 1 Definitions.

Note - Native vegetation subject to this requirement primarily comprises of matters of national environmental significance (MNES), matters of state environmental significance (MSES). They also comprise some matters of local environmental significance (MLES). A MLES is defined in Schedule 1.2, Administrative definitions. A list of the elements that apply to the mapped MSES and MLES is provided in Appendix 1 of the Planning scheme policy - Environmental areas.

Editors' Note - The accuracy of overlay mapping can be challenged through the development application process (code assessable development) or by way of a planning scheme amendment. See Council's website for details.

Editors' Note - When clearing native vegetation within a MSES area, you may still require approval from the State government.

RAD40	Filling or excavation does not result in clearing of native vegetation in High Value Area or Value Offset Area.

Extractive resources transport routes (refer Overlay map - Extractive resources (transport route and buffer) to determine if the following requirements apply)

RAD41	Filling or excavation is not carried out in the Extractive resources transport route or buffer, other than on public roads.

Heritage and landscape character (refer Overlay map - Heritage and landscape character to determine if the following requirements apply)

Note - Places, including sites, objects and buildings having local cultural heritage significance, are identified on Overlay map - Heritage and landscape character and listed in Schedule 1 of Planning scheme policy - Heritage and landscape character. Places also having cultural heritage significance at a State level and being entered in the Queensland Heritage Register, are also identified in Schedule 1 of Planning scheme policy - Heritage and landscape character.

RAD42	A cultural heritage conservation management plan is prepared in accordance with Planning scheme policy – Heritage and landscape character and submitted to Council prior to the commencement of any preservation, maintenance, repair and restoration works. Any preservation, maintenance, repair and restoration works are in accordance with the Council approved cultural heritage conservation management plan. This does not apply to Listed item 99 in Schedule 1 - List of sites, objects and buildings of significant historical and cultural value of Planning scheme policy - Heritage and landscape character.
RAD43	Development does not result in the removal of or damage to any significant tree identified on Overlay map – Heritage and landscape character and listed in Planning scheme policy – Heritage and landscape character (Appendix 2).
RAD44	The following development does not occur within 20m of the base of any significant tree, identified on Overlay map – Heritage and landscape character and listed in Appendix 2 of Planning scheme policy – Heritage and landscape character: a. construction of any building; b. laying of overhead or underground services; c. any sealing, paving, soil compaction; d. any alteration of more than 75mm to the ground surface prior to work commencing.
RAD45	Pruning of a significant tree occurs in accordance with Australian Standard AS 4373 Pruning of Amenity Trees.
Infrastructure buffers (refer Overlay map - Infrastructure buffers to determine if the following requirements apply)	
RAD46	Filling or excavation does not occur in the Bulk water supply infrastructure buffer.
RAD47	Filling or excavation does not not occur in the Gas pipeline buffer.
RAD48	Filling or excavation does not occur in the High voltage electricity line buffer.
Landslide hazard (refer Overlay map - Landslide hazard to determine if the following requirements apply)	
RAD49	Development does not: a. involve earthworks exceeding 50m^3; b. involve cut and fill having a height greater than 600mm; c. involve any retaining wall having a height greater than 600mm; d. redirect or alter the existing flow of surface or groundwater.
Overland flow path (refer Overlay map - Overland flow path to determine if the following requirements apply)	
RAD50	Development for operational work does not impede the flow of flood waters through the premises or worsen flood flows to other premises. Note - A report from a suitably qualified Registered Professional Engineer Queensland is required certifying that the development does not increase the potential for significant adverse impacts on an upstream, downstream or surrounding premises. Note - Reporting to be prepared in accordance with Planning scheme policy – Flood hazard, Coastal hazard and Overland flow

Riparian and wetland setbacks (refer Overlay map - Riparian and wetland setback to determine if the following requirements apply) Note - W1, W2 and W3 waterway and drainage lines, and wetlands are mapped on Schedule 2, Section 2.5 Overlay Maps – Riparian and wetland setbacks.	
RAD51	No development is to occur within: a. 50m from top of bank for W1 waterway and drainage line b. 30m from top of bank for W2 waterway and drainage line c. 20m from top of bank for W3 waterway and drainage line d. 100m from the edge of a Ramsar wetland, 50m from all other wetlands. Note - W1, W2 and W3 waterways and drainage lines, and wetlands are mapped on Schedule 2, Section 2.5 Overlay Maps – Riparian and wetland setbacks. Note - In some cases, the top of bank may not be easily defined, as such a hydraulic measurement may be applied instead. Moreton Bay Regional Council will provide further direction on how to determine and locate the setback boundary in these locations. Note - The minimum setback distance applies to the each side of waterway.

Part B - Criteria for assessable development - Site earthworks

Where development is categorised as assessable development - code assessment in the Table of Assessment, the assessment benchmarks are the criteria set out in Part B, Table 9.4.3.2 as well as the purpose statement and overall outcomes of this code.

Where development is categorised as assessable development - impact assessable, the assessment benchmarks become the whole of the planning scheme.

Table 9.4.3.2 Assessable development - Site earthworks

Performance outcome	**Examples that achieve aspects of the Performance Outcome**
Site works and construction management	
PO1 All works on-site are managed to: a. minimise as far as practicable, impacts on adjoining or adjacent premises and the streetscape in regards to erosion and sedimentation, dust, noise, safety and light; b. minimise as far as practicable, impacts on the natural environment;	**E1.1** Works incorporate temporary stormwater runoff, erosion and sediment controls and trash removal devices designed in accordance with the Urban Stormwater Quality Planning Guidelines, State Planning Policy, Schedule 10 - Stormwater management design objectives, Planning Scheme Policy - Stormwater management and Planning scheme policy - Integrated design including but not limited to the following:

c. ensure stormwater discharge is managed in a manner that does not cause actionable nuisance to any person or premises; d. avoid adverse impacts on street trees and their critical root zone. Note - Refer to Planning scheme policy - Integrated design for details and examples.	a. stormwater is not discharged to adjacent properties in a manner that differs significantly from pre-existing conditions; b. stormwater discharged to adjoining and downstream properties does not cause scour or erosion of any kind; c. stormwater discharge rates do not exceed pre-existing conditions; d. the design storm for all temporary diversion drains and sedimentation basins in accordance with Schedule 10 - Stormwater management design objectives; e. ponding or concentration of stormwater does not occur on adjoining properties.
	E1.2 Stormwater runoff, erosion and sediment controls are constructed in accordance with Planning scheme policy - Integrated design (Appendix C) prior to commencement of any clearing or earthworks and are maintained and adjusted as necessary at all times to ensure their ongoing effectiveness. Note - The measures are adjusted on-site to maximise their effectiveness.
	E1.3 The completed earthworks area is stabilised using turf, established grass seeding, mulch or sprayed stabilisation techniques to control erosion and sediment and dust from leaving the property.
	E1.4 Existing street trees are protected and not damaged during works. Note - Where development occurs in the tree protection zone, measures and techniques as detailed in Australian Standard AS 4970 Protection of trees on development sites are adopted and implemented.
PO2 Dust suppression measures are implemented during soil disturbances and construction works to protect nearby premises from unreasonable dust impacts.	**E2** No dust emissions extend beyond the boundaries of the site during soil disturbances and construction works.
PO3	**E3.1**

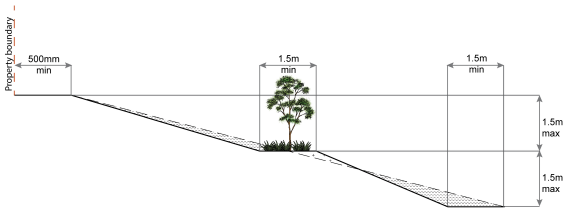
The clearing of vegetation on-site: a. is limited to the area of infrastructure works, buildings areas and other necessary areas for the works; b. includes the removal of declared weeds and other materials which are detrimental to the intended use of the land; c. is disposed of in a manner which minimises nuisance and annoyance to existing premises. Note - No burning of cleared vegetation is permitted.	All native vegetation to be retained on-site is temporarily fenced or protected prior to and during development works. Note - No parking of vehicles of storage of machinery or goods is to occur in these areas during development works.
	E3.2 Disposal of materials is managed in one or more of the following ways: a. all cleared vegetation, declared weeds, stumps, rubbish, car bodies, scrap metal and the like are removed and disposed of in a Council land fill facility; or b. all native vegetation with a diameter below 400mm is to be chipped and stored on-site. Note - The chipped vegetation must be stored in an approved location.
PO4 Earthworks are undertaken to ensure that soil disturbances are staged into manageable areas. Note - A site specific Erosion and Sediment Control Plan (ESCP) may be required to demonstrate compliance with this PO. An ESCP is to be prepared in accordance with Planning scheme policy - Stormwater management and Planning scheme policy - Integrated design (Appendix C).	No example provided.
PO5 All filling or excavation works including the transportation of material to and from the site are managed to not negatively impact the existing road network, the amenity of the surrounding area or the streetscape. Note - A Traffic Management Plan may be required to demonstrate compliance with this PO. A Traffic Management Plan is to be prepared in accordance with the Manual of Uniform Traffic Control Devices (MUTCD). Note - A haulage route must be identified and approved by Council where imported or exported material is transported to the site via a road of Local Collector standard or less, and: a. the aggregate volume of imported or exported material is greater than 1000m^3; or	**E5.1** Construction traffic including contractor car parking is controlled in accordance with a traffic management plan, prepared in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) to ensure all traffic movements to and from the site are safe.
	E5.2 All contractor car parking is either provided on the development site, or on an alternative site in the general locality which has been set aside for car parking. Contractors vehicles are generally not to be parked in existing roads. Contractor vehicles are generally not to be parked in existing roads.
	E5.3

b. the aggregate volume of imported or exported material is greater than 200m^3 per day; or c. the proposed haulage route involves a vulnerable land use or shopping centre. Note - A dilapidation report (including photographs) may be required for the haulage route to demonstrate compliance with this PO.	Any material dropped, deposited or spilled on the road(s) as a result of construction processes associated with the site are to be cleaned at all times.
	E5.4 Where works are carried out in existing roads, the works must be undertaken so that the existing roads are maintained in a safe and useable condition. Practical access for residents, visitors and services (including postal deliveries and refuse collection) is retained to existing lots during the construction period and after completion of the works. Note - A traffic control plan prepared in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) will be required for any works that will affect access, traffic movements or traffic safety in existing roads.
	E5.5 Access to the development site is obtained via an existing lawful access point.
PO6 Filling or excavation is carried out at times which minimise noise impacts to residents.	**E6** Filling or excavation is carried out within the following times: a. Monday to Saturday (other than public holidays) between 6:30am and 6:30pm on the same day; b. no work is to be carried out on Sundays or public holidays. Note - Work outside the above hours may be approved (in writing) where it can be demonstrated that the work will not cause significant inconvenience or disruption to the public, or the work is unlikely to cause annoyance or inconvenience to occupants of adjacent properties.
Earthworks	
PO7 On-site earthworks are designed to consider: a. the natural topographical features of the site; b. short and long-term slope stability; c. soft or compressible foundation soils; d. reactive soils; e. low density or potentially collapsing soils;	**E7.1** All cut and fill batters are provided with appropriate scour, erosion protection and run-off control measures including catch drains at the top of batters and lined batter drains as necessary.
	E7.2

f. existing fill and soil contamination that may exist on-site; g. the stability and maintenance of steep slopes and batters; h. the visual impact of the excavation (cut) and fill and impacts on the amenity of adjoining lots (e.g. residential); i. long term stability of dam embankments.	Stabilisation measures are provided, as necessary, to ensure long-term stability and low maintenance of steep slopes and batters.
	E7.3 Inspection and certification of steep slopes and batters is required by a suitably qualified and experienced RPEQ.
	E7.4 All filling or excavation is contained on-site and is free draining.
	E7.5 All fill placed on-site is: a. limited to that necessary for the approved use; b. clean and uncontaminated (i.e. no building waste, concrete, green waste, actual acid sulfate soils, potential acid sulfate soils or contaminated material etc.).
	E7.6 The site is prepared and the fill placed on-site in accordance with AS3798. Note - The fill is to be inspected and tested in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
	E7.7 Dams have an overflow facility which: a. is of sufficient capacity to fully contain the flows from a 10% AEP storm event over the entire catchment of the water impoundment; b. is positioned so that the flows from a 10% AEP storm event over the entire catchment of the water impoundment do not surcharge over any dam wall; c. is lined with velocity dissipation, flow dispersion and erosion protection mechanisms able to withstand the dynamic forces of a 10% AEP storm event over the entire catchment of the dam; d. is wide enough to provide for sheet flow; e. directs flows towards existing flow paths.
	E7.8

	A preliminary geotechnical assessment of the suitability of the dam site in terms of soil and slope stability has been carried out by an appropriately experienced and quality geotechnical engineer to confirm the dam site is stable.
	E7.9 All fill (including the embankment) for dams is setback a minimum of 10 metres from any property boundary.
	E7.10 The dam embankment is designed by a suitably qualified and experienced RPEQ.
	E7.11 The dam embankment is constructed with a clay core and cut-off trench to prevent seepage through the embankment.
	E7.12 The top water surface in the private dam is setback a minimum: a. 10.0 metres from any property boundary; b. 30.0 metres form the irrigation area of a household sewage treatment plant (secondary treatment); c. 50.0 metres from the irrigation area of a septic trench (primary treatment).
	E7.13 The crest width of the dam embankment is not less than 2.5 metres.
	E7.14 Dams have a spillway bypass with sufficient flow capacity to prevent floodwater overtopping the dam embankment.
	E7.15 Dam spillways have surface protection to prevent erosion and scour during all flood events.
PO8	**E8.1**

Filling or excavation is undertaken in a manner that: a. does not adversely impact on Council or public sector entity maintained infrastructure or any drainage feature on, or adjacent to the site; b. does not preclude reasonable access to Council or public sector entity maintained infrastructure or any drainage feature on, or adjacent to the site for monitoring, maintenance or replacement purposes. Note - Public sector entity is defined in Schedule 2 of the Act.	No filling or excavation is undertaken in an easement issued in favour of Council or a public sector entity. Note - Public sector entity is defined in Schedule 2 of the Act. **E8.2** Filling or excavation that would result in any of the following are not carried out on-site: a. a reduction in cover over any Council or public sector entity infrastructure service to less than 600mm; b. an increase in finished surface grade over, or within 1.5m on each side of, the Council or public sector entity infrastructure above that which existed prior to the filling or excavation works being undertaken; c. prevent reasonable access to Council or public sector entity maintained infrastructure or any drainage feature on, or adjacent to the site for monitoring, maintenance or replacement purposes. Note - Public sector entity is defined in Schedule 2 of the Act. Note - All building work covered by QDC MP1.4 is excluded from this provision.
PO9 Filling or excavation does not result in: a. adverse impacts on the hydrological and hydraulic capacity of the waterway or floodway; b. increased flood inundation outside the site; c. any reduction in the flood storage capacity in the flood way; and d. any clearing of native vegetation. Note - To demonstrate compliance with this outcomes, Planning scheme policy - Stormwater Management provides guidance on the preparation of a site based stormwater management plan by a suitably qualified professional. Refer to Planning scheme policy - Integrated design for guidance on infrastructure design and modelling requirements.	No example provided.
PO10 Filling and excavation does not result in land instability.	**E10.1** Where the earthworks is associated with a dam or on-site water impoundment (other than swimming pools), batter slopes are no steeper than the following:

Note - Steep rock slopes and batters are inspected and certified for long-term stability by a suitably qualified and experienced geotechnical engineer with RPEQ qualifications. Stabilisation measures are provided, as necessary, to ensure long-term stability and low maintenance.	a. outer slope of dam wall – 1 vertical to 2 horizontal; b. all internal slopes – 1 vertical to 4 horizontal.
	E10.2 Cut and fill batters, (other than batters to dams and water impoundments), have a finished slope no steeper than the following: a. any cut batter is no steeper than 1V in 4H; b. any fill batter, (other than a compacted fill batter), is no steeper than 1V in 4H; c. any compacted fill batter is no stepper than 1V in 4H.
PO11 Embankments are stepped, terraced and landscaped to not adversely impact on the visual amenity of the surrounding area.	**E11.1** Any retaining walls or embankments are setback at least the equivalent height of the wall or embankment from any boundary of the site.
	E11.2 Any embankments more than 1.5 metres in height are stepped, terraced and landscaped. **Figure - Embankment** 
PO12 Filling or excavation does not cause any adverse impacts on utility services or on-site effluent disposal areas.	**E12.1** The area subject to filling or excavation does not contain any utility services.
	E12.2 The distance between the top water level of a private dam and the irrigation area of a household sewage treatment plant (secondary treatment) is 30.0 metres.
	E12.3

	The distance between the top water level of a private dam and the irrigation area of a septic trench (primary treatment) is 50.0 metres. Note - Refer to the Water Quality Vision and Objectives contained in the Seqwater Development Guidelines: Development Guidelines for Water Quality Management in Drinking Water Catchments 2017 where contained within water resource area and water supply buffer area.
PO13 Filling or excavation on the development site is undertaken in a manner which does not create or accentuate problems associated with stormwater flows and drainage systems on land adjoining the site.	**E13** Filling or excavation undertaken on the development site are shaped in a manner which does not: a. prevent stormwater surface flow which, prior to commencement of the earthworks, passed onto the development site, from entering the land; or b. redirect stormwater surface flow away from existing flow paths; or c. divert stormwater surface flow onto adjacent land, (other than a road), in a manner which: i. concentrates the flow; or ii. increases the flow rates of stormwater over the affected section of the adjacent land above the situation which existed prior to the diversion; or iii. causes actionable nuisance to any person, property or premises.
PO14 Stormwater discharge from dams and other water impoundments on the development site is undertaken in a manner which does not cause actionable nuisance to users of adjacent land.	**E14** Stormwater discharge from dams and other water impoundments on the development site is undertaken in a manner that does not: a. concentrate the flow onto adjacent land; or b. cause scour and erosion on adjacent land; or c. increase the flow rates of stormwater over the affected section of the adjacent land above the pre-existing situation; or d. cause actionable nuisance to any person or premises.
Values and constraints criteria Note - The relevant values and constraints criteria do not apply where the development is consistent with a current Development permit for Reconfiguring a lot or Material change of use or Operational work, where that approval has considered and addressed (e.g. through a development footprint plan (or similar in the case of Landslide hazard) or conditions of approval) the identified value or constraint under this planning scheme.	
Acid sulfate soils - (refer Overlay map - Acid sulfate soils to determine if the following assessment criteria apply)	

Note - To demonstrate achievement of the performance outcome, an Acid sulfate soils (ASS) investigation report and soil management plan is prepared by a qualified engineer. Guidance for the preparation an ASS investigation report and soil management plan is provided in Planning scheme policy - Acid sulfate soils.

PO15	E15
Development avoids disturbing acid sulfate soils. Where development disturbs acid sulfate soils, development: a. is managed to avoid or minimise the release of surface or groundwater flows containing acid and metal contaminants into the environment; b. protects the environmental and ecological values and health of receiving waters; c. protects buildings and infrastructure from the effects of acid sulfate soils.	Development does not involve: a. excavation or otherwise removing of more than 100m^3 of soil or sediment where below than 5m Australian Height datum AHD; or b. filling of land of more than 500m^3 of material with an average depth of 0.5m or greater where below the 5m Australian Height datum AHD.

Environmental areas (refer Overlay map - Environmental areas to determine if the following assessment criteria apply)

Note – The following are excluded from the native vegetation clearing provisions of this planning scheme:

a. Clearing of native vegetation located within an approved development footprint;

b. Clearing of native vegetation within 10m from a lawfully established building reasonably necessary for emergency access or immediately required in response to an accident or emergency;

c. Clearing of native vegetation reasonably necessary to remove or reduce the risk vegetation poses to serious personal injury or damage to infrastructure;

d. Clearing of native vegetation reasonably necessary to construct and maintain a property boundary fence and not exceed 4m in width either side of the fence where in the Rural, Rural residential and Environmental Management and Conservation zones. In any other zone, clearing is not to exceed 2m in width either side of the fence;

e. Clearing of native vegetation reasonably necessary for the purpose of maintenance or works within a registered easement for public infrastructure or drainage purposes;

f. Clearing of native vegetation in accordance with a bushfire management plan prepared by a suitably qualified person, submitted to and accepted by Council;

g. Clearing of native vegetation associated with removal of recognised weed species, maintaining existing open pastures and cropping land, windbreaks, lawns or created gardens;

h. Grazing of native pasture by stock;

i. Native forest practice where accepted development under Part 1, 1.7.7 Accepted development

Note - Definition for native vegetation is located in Schedule 1 Definitions.

Note - Native vegetation subject to this criteria primarily comprises of matters of national environmental significance (MNES), matters of state environmental significance (MSES). They also comprise some matters of local environmental significance (MLES). A MLES is defined in Schedule 1.2, Administrative definitions. A list of the elements that apply to the mapped MSES and MLES is provided in Appendix 1 of the Planning scheme policy - Environmental areas.

Editors' Note - The accuracy of overlay mapping can be challenged through the development application process (code assessable development) or by way of a planning scheme amendment. See Council's website for details.

Note - To demonstrate achievement of the performance outcome, an ecological assessment, vegetation management plan and fauna management plan, as required, are prepared by a suitably qualified person. Guidance for the preparation of above mentioned reports is provided in Planning scheme policy - Environmental areas.	
Vegetation clearing, ecological value and connectivity	
PO16 Development avoids locating in a High Value Area or a Value Offset Area. Where it is not practicable or reasonable for development to avoid establishing in these areas, development must ensure that: a. the quality and integrity of the biodiversity and ecological values inherent to a High Value Area and a Value Offset Area is maintained and not lost or degraded; b. on-site mitigation measures, mechanisms or processes are in place demonstrating the quality and integrity of the biodiversity and ecological values inherent to a High Value Area and a Value Offset Area are maintained. For example, this can be achieved through replacement, restoration or rehabilitation planting as part of any proposed covenant, the development of a Vegetation Management Plan, a Fauna Management Plan, and any other on-site mitigation options identified in the Planning scheme policy - Environmental areas*. * Editor's note - This is not a requirement for an environmental offset under the Environmental Offsets Act 2014.	No example provided.
PO17 Development provides for safe, unimpeded, convenient and ongoing wildlife movement and establishes and maintains habitat connectivity by: a. retaining habitat trees; b. providing contiguous patches of habitat; c. provide replacement and rehabilitation planting to improve connectivity; d. avoiding the creation of fragmented and isolated patches of habitat; e. providing wildlife movement infrastructure. Editor's note - Wildlife movement infrastructure may include refuge poles, tree boulevarding, 'stepping stone' vegetation plantings, tunnels, appropriate wildlife fencing; culverts with ledges, underpasses, overpasses, land bridges and rope bridges. Further information is provided in Planning scheme policy – Environmental areas.	No example provided.

Vegetation clearing and habitat protection	
PO18 Development ensures that the biodiversity quality and integrity of habitats is not adversely impacted upon but maintained and protected.	No example provided.
PO19 Development does not result in the net loss or degradation of habitat value in a High Value Area or a Value Offset Area. Where development does result in the loss or degradation of habitat value, development will: a. rehabilitate, revegetate, restore and enhance an area to ensure it continues to function as a viable and healthy habitat area; b. provide replacement fauna nesting boxes in the event of habitat tree loss in accordance with Planning scheme policy - Environmental areas; c. undertake rehabilitation, revegetation and restoration in accordance with the South East Queensland Ecological Restoration Framework.	No example provided.
PO20 Development ensures safe, unimpeded, convenient and ongoing wildlife movement and habitat connectivity by: a. providing contiguous patches of habitat; b. avoiding the creation of fragmented and isolated patches of habitat; c. providing wildlife movement infrastructure; d. providing replacement and rehabilitation planting to improve connectivity.	No example provided.
Vegetation clearing and soil resource stability	
PO21 Development does not: a. result in soil erosion or land degradation; b. leave cleared land exposed for an unreasonable period of time but is rehabilitated in a timely manner.	No example provided.
Vegetation clearing and water quality	
PO22	No example provided.

Development maintains or improves the quality of groundwater and surface water within, and downstream, of a site by: a. ensuring an effective vegetated buffers and setbacks from waterbodies is retained to achieve natural filtration and reduce sediment loads; b. avoiding or minimising changes to landforms to maintain hydrological water flows; c. adopting suitable measures to exclude livestock from entering a waterbody where a site is being used for animal husbandry[(4)] and animal keeping[(5)] activities.	
PO23 Development minimises adverse impacts of stormwater run-off on water quality by: a. minimising flow velocity to reduce erosion; b. minimising hard surface areas; c. maximising the use of permeable surfaces; d. incorporating sediment retention devices; e. minimising channelled flow.	No example provided.
Vegetation clearing and access, edge effects and urban heat island effects	
PO24 Development retains safe and convenient public access in a manner that does not result in the adverse edge effects or the loss or degradation of biodiversity values within the environment.	No example provided.
PO25 Development minimises potential adverse edge effects on ecological values by: a. providing dense planting buffers of native vegetation between a development and environmental areas; b. retaining patches of native vegetation of greatest possible size where located between a development and environmental areas; c. restore, rehabilitate and increase the size of existing patches of native vegetation; d. ensuring that filling or excavation are setback as far as possible from environmental areas and corridors; e. landscaping with native plants of local origin.	No example provided.

Editor's note - Edge effects are factors of development that go to detrimentally affecting the composition and density of natural populations at the fringe of natural areas. Factors include weed invasion, pets, public and vehicle access, nutrient loads, noise and light pollution, increased fire frequency and changes in the groundwater and surface water flow.	
PO26 Development avoids adverse microclimate change and does not result in increased urban heat island effects. Adverse urban heat island effects are minimised by: a. pervious surfaces; b. providing deeply planted vegetation buffers and green linkage opportunities; c. landscaping with local native plant species to achieve well-shaded urban places; d. increasing the service extent of the urban forest canopy.	No example provided.
Vegetation clearing and Matters of Local Environmental Significance (MLES) environmental offsets	
PO27 Where development results in the unavoidable loss of native vegetation within a Value Offset Area MLES waterway buffer or a Value Offset Area MLES wetland buffer, an environmental offset is required in accordance with the environmental offset requirements identified in Planning scheme policy - Environmental areas. Editor's note - For MSES Koala Offsets, the environmental offset provisions in Schedule 11 of the Regulation, in combination with the requirements of the Environmental Offsets Act 2014, apply.	No example provided.
Extractive resources transport route (refer Overlay map - Extractive resources (transport route and buffer) to determine if the following assessment criteria apply)	
PO28 Development does not prevent or constrain the acquisition, construction or function and efficient transport of extractive material using the Extractive resources transport route.	**E28** Filling or excavation is not carried out in a Extractive resources transport route, other than on public roads.
Heritage and landscape character(refer Overlay map - Heritage and landscape character to determine if the following assessment criteria apply) Note - The identification of a development footprint will assist in demonstrating compliance with the following performance criteria.	
PO29	No example provided.

Works do not: a. reduce public access to a heritage place, building, item or object; b. create the potential to adversely affect views to and from the heritage place, building, item or object; c. obscure or destroy any pattern of historic subdivision, historical context, landscape setting or the scale and consistency of the urban fabric relating to the local heritage place.	
PO30 Works retain significant trees and incorporates them into the provision of infrastructure.	No example provided.
Infrastructure buffers (refer Overlay map - Infrastructure buffers to determine if the following assessment criteria apply)	
PO31 Filling and excavation within a Bulk water supply infrastructure buffer is located, designed and constructed to: a. protect the integrity of the water supply pipeline; b. maintain adequate access for any required maintenance or upgrading work to the water supply pipeline; c. the extent of proposed works confirmed with the Utility authority.	**E31** Filling or excavating does not occur in a Bulk water supply infrastructure buffer.
PO32 Filling and excavation in the Gas pipeline buffer: a. maintains adequate access for any required maintenance or upgrading work; b. minimises risk of harm to people and property; c. has the extent of proposed works confirmed with the Utility authority.	**E32** Filling or excavating does not occur in the Gas pipeline buffer.
PO33 Filling and excavation in a High voltage electricity line buffer: a. is located and designed in a manner that maintains a high level of security of supply;	**E33** Filling or excavating does not occur in a High voltage electricity line buffer.

b. is located and design so not to impede upon the functioning and maintenance of high voltage electrical infrastructure; c. has the extent of proposed works confirmed with the Utility authority.	
Landslide hazard (refer Overlay map - Landslide hazard to determine if the following assessment criteria apply) Note - To demonstrate achievement of the performance outcomes, a site-specific geotechnical assessment report is prepared by a qualified engineer. Guidance for the preparation of a geotechnical assessment report is provided in Planning scheme policy – Landslide hazard.	
PO34 Development: a. maintains the safety of people and property on a site and neighbouring sites from landslides; b. ensures the long-term stability of the site considering the full nature and end use of the development; c. ensures site stability during all phases of construction and development; d. minimises disturbance of natural drainage patterns of the site and does not result in the redirection or alteration of the existing flow if surface or groundwater e. minimises adverse visual impacts on the amenity of adjoining residents and provides a positive interface with the streetscape.	**E34** Development does not: a. involve earthworks exceeding $50m^3$; b. involve cut and fill having a height greater than 600mm; c. involve any retaining wall having a height greater than 600mm; d. redirect or alter the existing flow of surface or groundwater.
Overland flow path (refer Overlay map - Overland flow path to determine if the following assessment criteria apply) Note - The applicable river and creek flood planning levels associated with defined flood event (DFE) within the inundation area can be obtained by requesting a flood check property report from Council.	
PO35 Development: a. minimises the risk to persons from overland flow; b. does not increase the potential for damage from overland flow either on the premises or other premises, public land, watercourses, roads or infrastructure.	No example provided.
PO36 Development:	No example provided.

a. maintains the conveyance of overland flow predominantly unimpeded through the premises for any event up to and including the 1% AEP for the fully developed upstream catchment; b. does not concentrate, intensify or divert overland flow onto an upstream, downstream or surrounding property. Note - A report from a suitably qualified Registered Professional Engineer Queensland is required certifying that the development does not increase the potential for significant adverse impacts on an upstream, downstream or surrounding premises. Note - Reporting to be prepared in accordance with Planning scheme policy – Flood hazard, Coastal hazard and Overland flow.	
PO37 Development does not: a. directly, indirectly or cumulatively cause any increase in overland flow velocity or level; b. increase the potential for flood damage from overland flow either on the premises or other premises, public lands, watercourses, roads or infrastructure. Note - Open concrete drains greater than 1m in width are not an acceptable outcome, nor are any other design options that may increase scouring.	No example provided.
PO38 Development ensures that public safety and the risk to the environment are not adversely affected by a detrimental impact of overland flow on a hazardous chemical located or stored on the premises.	**E38** Development ensures that a hazardous chemical is not located or stored in an Overland flow path area. Note - Refer to the Work Health and Safety Act 2011 and associated Regulation and Guidelines, the Environmental Protection Act 1994 and the relevant building assessment provisions under the Building Act 1975 for requirements related to the manufacture and storage of hazardous substances.
Additional criteria for development for a Park(57)	
PO39 Development for a Park(57) ensures that the design and layout responds to the nature of the overland flow affecting the premises such that: a. public benefit and enjoyment is maximised;	**E39** Development for a Park(57) ensures works are provided in accordance with the requirements set out in Appendix B of the Planning scheme policy - Integrated design.

b. impacts on the asset life and integrity of park structures is minimised; c. maintenance and replacement costs are minimised.	
Riparian and wetland setbacks	
PO40 Development provides and maintains a suitable setback from waterways and wetlands that protects natural and environmental values. This is achieved by recognising and responding to the following matters: a. impact on fauna habitats; b. impact on wildlife corridors and connectivity; c. impact on stream integrity; d. impact of opportunities for revegetation and rehabilitation planting; e. edge effects.	**E40** Development does not occur within: a. 50m from top of bank for W1 waterway and drainage line b. 30m from top of bank for W2 waterway and drainage line c. 20m from top of bank for W3 waterway and drainage line d. 100m from the edge of a Ramsar wetland, 50m from all other wetlands. Note - W1, W2 and W3 waterway and drainage lines, and wetlands are mapped on Schedule 2, Section 2.5 Overlay Maps – Riparian and wetland setbacks.