9.4.3 Site earthworks code

9.4.3.1 Application - Site earthworks code

This code applies to assessing development, if:

- 1. self-assessable or assessable development where this code is an applicable code identified in the assessment criteria column of a table of assessment (Part 5);
- 2. impact assessable development (Part 5).

When using this code, reference should be made to 5.3.2 Determining the level of assessment and, where applicable, 5.3.3 Determining the level of assessment located in Part 5.

For development made self-assessable or assessable for this code in Part 5:

- 1. Part A of the code applies only to self-assessable development;
- 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. Infrastructure and services are provided in an efficient manner.
 - c. 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;
 - viii. maintain or improve the structure and condition of drainage lines and riparian areas;
 - iv. avoid off-site adverse impacts from stormwater.
 - d. The development does not result in unacceptable impacts on the safety of the external road network.
 - e. Site works including earthworks are managed to be safe and have minimal impacts on adjoining or adjacent premises, the streetscape or the environment.
 - f. The construction of dams, filling and excavation minimise adverse impacts on the amenity, stability, drainage and environmental quality of the lot and surrounding area.
 - g. Development avoids areas subject to constraint, limitation, or environmental value. Where development 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, limitation 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 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 2012.

- iv. maintaining, restoring and rehabilitating environmental values, including natural, ecological, biological, aquatic, hydrological and amenity values, and enhancing these values through the provision of planting and landscaping, and facilitating safe wildlife movement and connectivity through:
 - A. the provision of replacement, restoration, rehabilitation planting and landscaping;
 - B. the location, design and management of development to avoid or minimise adverse impacts on ecological systems and processes;
 - C. the requiring of environmental offsets in accordance with the Environmental Offsets Act 2014.
- v. protecting native species and protecting and enhancing species habitat;
- vi. protecting and preserving the natural, aesthetic, architectural historic and cultural values of significant trees, places, objects and buildings of heritage and cultural significance;
- vii. establishing effective separation distances, buffers and mitigation measures associated with identified infrastructure to minimise adverse effects on sensitive land uses from odour, noise, dust and other nuisance generating activities;
- viii. establishing, maintaining and protecting appropriate buffers to waterways, wetlands, native vegetation and significant fauna habitat;
- ix. ensuring it promotes and does not undermine the ongoing viability, integrity, operation, maintenance and safety of identified infrastructure;
- x. ensuring effective and efficient disaster management response and recovery capabilities;
- xi. where located in an overland flow path:
 - A. development siting, built form, layout and access responds to the risk presented by the overland flow and minimises risk to personal safety;
 - B. development is resilient to the impacts of overland flow by ensuring the siting and design accounts for the potential risks to property associated with the overland flow;
 - C. development 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;
 - D. development 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 Assessment criteria

To determine if development is self-assessable, development must comply with the self-assessable acceptable outcomes set out in Part A, Table 9.4.3.1. Where development does not meet an acceptable outcome (SAO) of the relevant criteria Part A Table 9.4.3.1, assessment is against the corresponding performance outcome (PO) identified in the table below. This only occurs whenever a self-assessable SAO is not met, and is therefore limited to the subject matter of the self-assessable SAOs that are not complied with. To remove any doubt, for those SAOs that are complied with, there is no need for assessment against the corresponding PO.

Self-assessable SAO	Corresponding PO	
SAO1	PO1	
SAO2	PO1	
SAO3	PO1	
SAO4	PO2	
SAO5	PO3	
SAO6	PO3	
SAO7	PO3	
SAO8	PO5	
SAO9	PO6	

Self-assessable SAO	Corresponding PO
SAO10	PO6
SAO11	PO6
SAO12	PO6
SAO13	PO6
SAO14	PO6
SAO15	PO7
SAO16	PO7
SAO17	PO9
SAO18	PO9
SAO19	PO10
SAO20	PO10
SAO21	PO6
SAO22	PO6
SAO23	PO6
SAO24	PO6
SAO25	PO6
SAO26	PO6
SAO27	PO6
SAO28	PO11
SAO29	PO6
SAO30	PO6
SAO31	PO6
SAO32	PO6
SAO33	PO6
SAO34	PO6
SA035	P011
SAO36	P012-P023
SAO37	PO24
SAO38	PO25
SAO39	PO26
SAO40	PO26
SAO41	PO26
SAO42	P027
SAO43	PO28
SAO44	PO29

Self-assessable SAO	Corresponding PO
SAO45	PO30
SAO46	PO31, PO32, PO33, PO35, PO36, PO37
SAO47	PO31, PO32, PO33, PO35, PO36, PO37
SAO48	PO31-33
SAO49	PO34
SAO50	PO38
SAO51	PO39

Part A - Criteria for self-assessable development - Site earthworks

Table 9.4.3.1 Self-assessable development - Site earthworks

54047		PO37	
SAO48		PO31-33	
SAO49		PO34	
SAO50		PO38	
SAO51	PO39		
		sessable development - Sit	
Self-asse	essable acceptab	le outcomes	
		Genera	criteria
Construc	tion managemen	t	
SAO1	in accordance wi Stormwater man the following: a. stormwater pre-existing b. stormwater c. stormwater d. the 10% AE e. the 50% AE Stormwater run-o filling or excavati	ith the Urban Stormwater Qu agement and Planning scher is not discharged to adjacen g conditions; discharged to adjoining and discharge rates do not exce EP storm event is the minimum P storm event is the minimum	ff, erosion and sediment controls and trash traps designed ality Planning Guidelines, Planning Scheme Policy - ne policy - Integrated design including, but not limited to t properties in a manner that differs significantly from downstream properties does not cause scour and erosion; ed pre-existing conditions; m design storm for all temporary diversion drains; design storm for all silt barriers and sedimentation basins.
		es are adjusted on-site to maximise	
SAO3			using turf, established grass seeding, mulch or sprayed I sediment and dust from leaving the property.
SAO4	No dust emissior works.	ns extend beyond the bounda	aries of the site during soil disturbances and construction
SAO5	All native vegeta development wo		emporarily fenced or protected prior to and during
	Note - Refer to Value	es and constraints SAO's in this table	for classes of vegetation to be retained for self-assessable development.
	1		

	Note - No parking of vehicles or storage of machinery or goods is to occur in these areas during development works.		
SAO6	All declared weeds, stumps, fallen trees, rubbish, car bodies, scrap metal and the like are removed and disposed of in a Council land fill facility.		
SAO7	Disposal of cleared vegetation is managed in one or more of the following ways:		
	a. cleared vegetation is taken off site to an approved waste disposal facility; or		
	b. all native vegetation with a diameter below 400mm is to be chipped and stored on-site.		
SAO8	Any material dropped, deposited or spilled on the road(s) as a result of construction processes association with the site are to be cleaned at all times.		
Earthwor	ks		
SAO9	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.		
SAO10	Stabilisation measures are provided, as necessary, to ensure long-term stability and low maintenance of steep rock slopes and batters.		
	Note - Inspection and certification of steep rock slopes and batters may be required by a suitably qualified and experienced RPEQ.		
SAO11	All fill and excavation is contained on-site.		
SAO12	All fill and excavation is free draining.		
SAO13	All fill placed on-site is:		
	a. limited to that required for the necessary approved use;		
	b. clean and uncontaminated (i.e. no building waste, concrete, green waste or contaminated materia etc. is used as fill).		
SAO14	The site is prepared and the fill placed on-site in accordance with AS3798.		
X	Note - The fill is to be inspected and tested in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.		
SAO15	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 the Sustainable Planning Act 2009.		
SAO16	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;		
	 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. 		

SAO17	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.	
SAO18	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:-	
	i. for sand – 2 horizontal to 1 vertical;	
	ii. for silt – 4 horizontal to 1 vertical;	
	iii. for firm clay – 1 horizontal to 1 vertical;	
	iv. for soft clay – 3 horizontal to 2 vertical;	
	b. any fill batter, (other than a compacted fill batter), is no steeper than 4 horizontal to 1 vertical;	
	c. any compacted fill batter is no stepper than:-	
	i. for sand – 5 horizontal to 2 vertical;	
	ii. for silt – 4 horizontal to 1 vertical;	
	iii. for firm clay – 2 horizontal to 1 vertical.	
SAO19	Any retaining walls or embankments are setback at least the equivalent height of the wall or embankment from any boundary of the site.	
SAO20	Any embankments more than 1.5 metres in height are stepped, terraced and landscaped.	
>	Figure - Embankment	
	2 5 500mm min the second sec	
	1.5m	
SAO21	All filling or excavation works are completed within 3 months of the commencement date.	
SAO22	Stormwater discharge from dams and other water impoundments on the development site is undertaken in a manner which 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 nuisance or annoyance to any person, property or premises.	

SAO23	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.
SAO24	All fill (including the embankment) for dams is setback a minimum of 10 metres from any property boundary.
SAO25	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.
SAO26	Earth embankments are fully and thoroughly compacted.
SAO27	The top water surface in the dam is setback a minimum 10 metres from any property boundary.
SAO28	When identified on Overlay map - Acid sulfate soils and excavating more than 100m ³ of material below RL 5.0m AHD or filling (includes the dam embankment) more than 500m ³ of material on land that is below RL 5.0m AHD:
	a. undertake a soil test to determine that Acid Sulfate Soils are not being disturbed (i.e. the soil contains no acid sulfate);
	OR
	b. otherwise treat, any disturbed or excavated soil or sediment with fine agricultural lime to neutralise acidity. A minimum application rate of 80kg agricultural lime/m ³ is used (assumes oxidisable sulphur of 1.0% and a bulk density of 1.7);
	c. the stockpiling and neutralisation of excavated sediment or soil is carried out on an impermeable treatment pad, which prevents acid leaching and contains stockpile runoff;
	d. any exposed sediment or soil in excavation puts or trenches is treated with agricultural lime to neutralise acidity and prevent further acid generation at a minimum application rate of 5.0kg agricultural lime/m ³ .
SAO29	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
X	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.
SAO30	Dam embankments are constructed by a suitably experienced and qualified construction contractor.
SAO31	The freeboard between the top water level and the top of the embankment is not less than 1 metre.
SAO32	Dams with an embankment height up to 3 metres have a minimum embankment crest width of 2.5 metres
SAO33	Dams have a spillway bypass with sufficient flow capacity to prevent floodwater overtopping the dam embankment.
SAO34	Dam spillways have surface protection to prevent erosion and scour during all flood events.
	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 sulfa apply)	ate so	oils - (refer Overlay map - Acid sulfate soils to determine if the following as	sessment criteria	
	Note - Planning scheme policy - Acid sulfate soils provides guidance for self-assessable 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.			
SAO35	Fillir	ng or excavation works, other than dams, does not involve:		
	a.	excavation or otherwise removing of more than 100m ³ of soil or sediment where b Height Datum AHD, or	elow 5m Australian	
	b.	filling of land of more than 500m ³ of material with an average depth of 0.5m or gr the 5m AHD.	eater where below	
		Surface Elevation ≤5m AHD 5urface Elevation >5m and <20m AHD +20m AHD —	Surface Elevation ≥20m AHD	
		+15m AHD	Excavation area Assessable development Self assessable development	
		+5m AHD		
		0m AHD - 2100m ³ ≥100m ³ <100m ³ <100m ³		
		-5m AHD- V X V V X X	×	
Environm criteria a		l areas (refer Overlay map - Environmental areas to determine if the follow	ing assessment	
Note - The	followi	ing are exempt from the native clearing provisions of this planning scheme:		
a. Clea	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. Gra	izing of native pasture by stock;		
i. Nati	. Native forest practice where exempt under Part 1, 1.7.7 Exempt development.		
Note - Defi	Note - Definition for native vegetation is located in Schedule 1 Definitions.		
environme Schedule 7	ive vegetation subject to this criteria primarily comprises of matters of national environmental significance (MNES), matters of state intal significance (MSES). They also comprise some matters of local environmental significance (MLES). A MLES is defined in 1.2, Administrative definitions. A list of the elements that apply to the mapped MSES and MLES is provided in Appendix 1 of the scheme policy - Environmental areas.		
	ote - The accuracy of overlay mapping can be challenged through the development application process (code assessable ent) or by way of a planning scheme amendment. See Council's website for details.		
Editors' No	ote - When clearing native vegetation within a MSES area, you may still require approval from the State government.		
SAO36	Filling or excavation does not result in clearing of native vegetation in High Value Area or Value Offset Area.		
	re resources transport routes (refer Overlay map - Extractive resources (transport route and buffer) nine if the following assessment criteria apply)		
SAO37	Filling or excavation is not carried out in the Extractive resources transport route or buffer, other than on public roads.		
the follow Note - Plac landscape heritage sig	and landscape character (refer Overlay map - Heritage and landscape character to determine if wing assessment criteria apply) ces, including sites, objects and buildings having local cultural heritage significance, are identified on Overlay map - Heritage and character and listed in Schedule 1 of Planning scheme policy - Heritage and landscape character. Places also having cultural ignificance at a State level and being entered in the Queensland Heritage Register, are also identified in Schedule 1 of Planning objects - Heritage and landscape character.		
SAO38	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.		
SAO39			
SAO39 SAO40	historical and cultural value of Planning scheme policy - Heritage and landscape character. 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 Appendix 2 of Planning scheme policy – Heritage		

SAO41	Pruning of a significant tree occurs in accordance with Australian Standard AS 4373-2007 - Pruning of Amenity Trees.
Infrastru criteria a	cture buffers (refer Overlay map - Infrastructure buffers to determine if the following assessment pply)
SAO42	Filling or excavation does not occur in the Bulk water supply infrastructure buffer.
SAO43	Filling or excavation does not not occur in the Gas pipeline buffer.
SAO44	Filling or excavation does not occur in the High voltage electricity line buffer.
Landslid apply)	e hazard (refer Overlay map - Landslide hazard to determine if the following assessment criteria
SAO45	 Development does not: a. involve earthworks exceeding 50m³; 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 apply)	flow path (refer Overlay map - Overland flow path to determine if the following assessment criteria
SAO46	Development for a material change of use or building work does not involve the construction of a building or structure in an Overland flow path area.
SAO47	Development for a material change of use or 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
SAO48	Development for a material change of use or building work ensures that fencing in an overland flow path area is at least 50% permeable.
SAO49	Development for a material change of use or building work that involves a hazardous chemical ensures the hazardous chemicals is not located within an overland flow path area.
SAO50	Development for a material change of use or building work for a Park ⁽⁵⁷⁾ ensures that work is provided in accordance with the requirements set out in Appendix B of the Planning scheme policy - Integrated design.
following	and wetland setbacks (refer Overlay map - Riparian and wetland setback to determine if the assessment criteria apply) W2 and W3 waterway and drainage lines, and wetlands are mapped on Schedule 2, Section 2.5 Overlay Maps – Riparian and tbacks.
	a. 50m from top of bank for W1 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 code assessable development in the Table of Assessment, the assessment criteria for that development are set out in Part B, Table 9.4.3.2.

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Where development is impact assessable, the assessment criteria becomes the whole of the planning scheme.

Performance outcome	Acceptable outcome
Construction management	
P01	A01.1
 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; c. ensure stormwater discharge is managed in a manner that does not cause nuisance or annoyance 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. 	 Works incorporate temporary stormwater runoff, erosion and sediment controls and trash traps designed in accordance with the Urban Stormwater Quality Planning Guidelines, 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 and erosion; c. stormwater discharge rates do not exceed pre-existing conditions; d. the 10% AEP storm event is the minimum design storm for all temporary diversion drains; e. the 50% AEP storm event is the minimum design storm for all silt barriers and sedimentation basins.

Earthworks are to be undertaken to ensure that soil disturbances are staged into manageable areas of not greater than 3.5 hectares.	
Note - Soil disturbances of greater than 1 hectare require a site specific Erosion and Sediment Control Plan (ESCP).	
Note - Council will consider clearing of larger areas in exceptional circumstances based on the staging of development.	
PO5	A05.1
All works on-site and 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 - Where the amount of imported or exported material is greater than 50m ³ , a haulage route must be identified and approved by Council.	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. AO5.2 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. Note - A Traffic Management Plan may be required for the site in accordance with the Manual of Uniform Traffic Control Devices (MUTCD).
	AO5.3 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.
	site are to be cleaned at an times.
Earthworks	
PO6	AO6.1
On-site earthworks are designed to consider:a. the natural topographical features of the site;b. short and long-term slope stability;	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.
c. soft or compressible foundation soils;	AO6.2
d. reactive soils;	Stabilisation measures are provided, as necessary, to
e. low density or potentially collapsing soils;	ensure long-term stability and low maintenance of steep rock slopes and batters.
f. existing fill and soil contamination that may exist on-site;	AO6.3
g. the stability and maintenance of steep rock slopes and batters;	Inspection and certification of steep rock slopes and batters is required by a suitably qualified and experienced RPEQ.

h. the visual impact of the excavation (cut) and fill and impacts on the amenity of adjoining lots (e.g.	AO6.4
residential).	All filling or excavation is contained on-site.
i. special requirement for dams.	AO6.5
Note - Filling or excavation works are to be completed within six (6) months of the commencement date.	All filling or excavation is free draining.
months of the commencement date.	AO6.6
	All fill placed on-site is:
	a. limited to that required for the necessary approved use;
	b. clean and uncontaminated (i.e. no building waste, concrete, green waste or contaminated material etc. is used as fill).
	AO6.7
	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.
	$\mathcal{C}^{\mathcal{O}}$
	AO6.8
	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 flows rates of stormwater over the affected section of the adjacent land above the pre-existing situation; or
B	d. cause nuisance or annoyance to any person or premises.
Ar.	AO6.9
~	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.
	AO6.10
	All fill (including the embankment) for dams is setback a minimum of 10 metres from any property boundary.

	AO6.11 The dam embankment is designed by a suitably qualified and experienced RPEQ.
	AO6.12 The dam embankment is constructed with a clay core and cut-off trench to prevent seepage through the embankment.
	AO6.13 The top water surface in the dam is setback a minimum 10 metres from any property boundary.
	AO6.14 The crest width of the dam embankment is not less than 2.5 metres.
	AO6.15 Dams have a spillway bypass with sufficient flow capacity to prevent floodwater overtopping the dam embankment.
	AO6.16 Dam spillways have surface protection to prevent erosion and scour during all flood events.
 PO7 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 	AO7.1 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 the Sustainable Planning Act 2009.
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 the Sustainable Planning Act 2009.	 AO7.2 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. Note - Public sector entity is defined in the Sustainable Planning Act
	2009.

PO8	No acceptable outcome provided.
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.	cion?
PO9	A09.1
Filling and excavation does not result in land instability. 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.	 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: a. outer slope of dam wall – 1 vertical to 2 horizontal; b. all internal slopes – 1 vertical to 4 horizontal. AO9.2 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: i. for sand – 2 horizontal to 1 vertical; ii. for silt – 4 horizontal to 1 vertical; iii. for firm clay – 1 horizontal to 2 vertical; b. any fill batter, (other than a compacted fill batter), is no steeper than 4 horizontal to 1 vertical; c. any compacted fill batter is no stepper than: i. for sand – 5 horizontal to 2 vertical; ii. for silt – 4 horizontal to 1 vertical; ii. for silt – 4 horizontal to 2 vertical;
PO10	AO10.1

Embankments are stepped, terraced and landscaped to Any retaining walls or embankments are setback at least the equivalent height of the wall or embankment from not adversely impact on the visual amenity of the surrounding area. any boundary of the site. AO10.2 Any embankments more than 1.5 metres in height are stepped, terraced and landscaped. Figure - Embankment 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. AO11 **PO11** Development avoids disturbing acid sulfate soils. Where Development does not involve: development disturbs acid sulfate soils, development: excavation or otherwise removing of more than а. is managed to avoid or minimise the release of 100m³ of soil or sediment where below than 5m a. surface or groundwater flows containing acid and Australian Height datum AHD; or metal contaminants into the environment; b. filling of land of more than 500m³ of material with b. protects the environmental and ecological values an average depth of 0.5m or greater where below the 5m Australian Height datum AHD. and health of receiving waters; protects buildings and infrastructure from the effects C. of acid sulfate soils.

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

Note – The following are exempt 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 exempt under Part 1, 1.7.7 Exempt 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 **PO12** No acceptable outcome provided. 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: the quality and integrity of the biodiversity and a. ecological values inherent to a High Value Area and a Value Offset Area is maintained and not lost or degraded; on-site mitigation measures, mechanisms or b. 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.

P013	No acceptable outcome provided.
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.	C ersi
Vegetation clearing and habitat protection	
 PO14 Development ensures that the biodiversity quality and integrity of habitats is not adversely impacted upon but maintained and protected. PO15 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 	No acceptable outcome provided. No acceptable outcome provided.
Queensland Ecological Restoration Framework. P016	No acceptable outcome provided.
 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. 	

Vegetation clearing and soil resource stability		
PO1	7	No acceptable outcome provided.
Dev	elopment does not:	
a. b.	result in soil erosion or land degradation; leave cleared land exposed for an unreasonable period of time but is rehabilitated in a timely manner.	
Veg	etation clearing and water quality	
PO1	8	No acceptable outcome provided.
grou	elopment maintains or improves the quality of indwater and surface water within, and downstream, site by:	
a. b.	ensuring an effective vegetated buffers and setbacks from waterbodies is retained to achieve natural filtration and reduce sediment loads; avoiding or minimising changes to landforms to maintain hydrological water flows;	C Jers
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.	ene
PO 1	9	No acceptable outcome provided.
run-	elopment minimises adverse impacts of stormwater off on water quality by:	S
a. b. c.	minimising flow velocity to reduce erosion; minimising hard surface areas; maximising the use of permeable surfaces;	
d. e.	incorporating sediment retention devices; minimising channelled flow.	
Vegetation clearing and access, edge effects and urba		an heat island effects
PO2	20	No acceptable outcome provided.
in a effe	elopment retains safe and convenient public access manner that does not result in the adverse edge cts or the loss or degradation of biodiversity values in the environment.	
PO2	21	No acceptable outcome provided.
	elopment minimises potential adverse edge effects 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.			
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.			
PO22	No acceptable outcome provided.		
Development avoids adverse microclimate change and does not result in increased urban heat island effects. Adverse urban heat island effects are minimised by:	C Jers		
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.			
Vegetation clearing and Matters of Local Environmental Significance (MLES) environmental offsets			
PO23 No acceptable outcome provided.			
Where development regults in the unevoidable loss of			
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, State Planning Regulatory Provision environmental offset provisions apply.			
Extractive resources transport route (refer Overlay map - Extractive resources (transport route and buffer) to determine if the following assessment criteria apply)			
PO24	AO24		
Development does not prevent or constrain the	Filling or excavation is not carried out in a Extractive		
acquisition, construction or function and efficient transport	resources transport route, other than on public roads.		
of extractive material using the Extractive resources	,,		
transport route.			
Heritage and landscape character (refer Overlay map the following assessment criteria apply)	- Heritage and landscape character to determine if		

PO2	5	No acceptable outcome provided
Wor	ks 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.	Sion
PO2	6	No acceptable outcome provided.
	ks retain significant trees and incorporates them into provision of infrastructure.	
	estructure buffers (refer Overlay map - Infrastruc eria apply)	ture buffers to determine if the following assessment
PO2	7	A027
	elopment within a Bulk water supply infrastructure er is located, designed and constructed to:	Filling or excavating does not occur in a Bulk water supply infrastructure buffer.
a. b.	protect the integrity of the water supply pipeline;	
	maintain adequate access for any required maintenance or upgrading work to the water supply pipeline;	
PO2	maintenance or upgrading work to the water supply pipeline;	AO28
Dev	maintenance or upgrading work to the water supply pipeline; 8 elopment in the Gas pipeline buffer:	
	maintenance or upgrading work to the water supply pipeline;	Filling or excavating does not occur in the Gas pipeline
Dev	maintenance or upgrading work to the water supply pipeline; 8 elopment in the Gas pipeline buffer: maintains adequate access for any required	Filling or excavating does not occur in the Gas pipeline
Dev a.	maintenance or upgrading work to the water supply pipeline; 8 elopment in the Gas pipeline buffer: maintains adequate access for any required maintenance or upgrading work; minimises risk of harm to people and property.	Filling or excavating does not occur in the Gas pipeline
Dev a. b. PO2 Dev	maintenance or upgrading work to the water supply pipeline; 8 elopment in the Gas pipeline buffer: maintains adequate access for any required maintenance or upgrading work; minimises risk of harm to people and property. 9 elopment in a High voltage electricity line buffer:	Filling or excavating does not occur in the Gas pipeline buffer.
Dev a. b. PO2	maintenance or upgrading work to the water supply pipeline; 8 elopment in the Gas pipeline buffer: maintains adequate access for any required maintenance or upgrading work; minimises risk of harm to people and property. 9	Filling or excavating does not occur in the Gas pipeline buffer. AO29 Filling or excavating does not occur in a High voltage

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.		
PO30	AO30	
Development:	Development does not:	
 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. 	 a. involve earthworks exceeding 50m³; 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.		
PO31 Development:	No acceptable outcome provided.	
 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. 		
PO32	AO32	
 Development: 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. 	No acceptable outcome provided.	
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.		

PO33	No acceptable outcome provided.
 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. 	
PO34 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.	AO34 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.
PO35 Development which is not in a Rural zone ensures that overland flow is not conveyed from a road or public open space onto a private lot.	AO35 Development which is not in a Rural zone that an overland flow paths and drainage infrastructure is provided to convey overland flow from a road or public open space area away from a private lot.
PO36 Development ensures that inter-allotment drainage infrastructure, overland flow paths and open drains through private property cater for overland flows for a fully developed upstream catchment and are able to be easily maintained. 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	 AO36.1 Development ensures that roof and allotment drainage infrastructure is provided in accordance with the following relevant level as identified in QUDM: a. Urban area – Level III; b. Rural area – N/A; c. Industrial area – Level V; d. Commercial area – Level V. AO36.2 Development ensures that inter-allotment drainage infrastructure is designed to accommodate any event up to and including the 1% AEP for the fully developed upstream catchment.
PO37 Development protects the conveyance of overland flow such that an easement for drainage purposes is provided over:	No acceptable outcome provided.

a. a stormwater pipe if the nominal pipe diameter exceeds 300mm;	
b. an overland flow path where it crosses more than one premises;	
c. inter-allotment drainage infrastructure.	
Note - Refer to Planning scheme policy - Integrated design for details and examples.	
Note - Stormwater Drainage easement dimensions are provided in accordance with Section 3.8.5 of QUDM.	
Additional criteria for development for a Park ⁽⁵⁷⁾	
PO38	A038
Development for a Park ⁽⁵⁷⁾ ensures that the design and layout responds to the nature of the overland flow affecting the premises such that:	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.
a. public benefit and enjoyment is maximised;	
b. impacts on the asset life and integrity of park structures is minimised;	
c. maintenance and replacement costs are minimised.	CO
Riparian and wetland setbacks	
PO39	AO39
Development provides and maintains a suitable setback	Development does not occur within:
from waterways and wetlands that protects natural and environmental values. This is achieved by recognising and responding to the following matters:	a. 50m from top of bank for W1 waterway and drainage line
a. impact on fauna habitats;	 b. 30m from top of bank for W2 waterway and drainage line
b. impact on wildlife corridors and connectivity;c. impact on stream integrity;	c. 20m from top of bank for W3 waterway and drainage line
d. impact of opportunities for revegetation and rehabilitation planting;	d. 100m from the edge of a Ramsar wetland, 50m from all other wetlands.
e. edge effects.	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.