9.4.2 Works code

9.4.2.1 Application - Works 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).

Note - This code does not apply to building work that is regulated under the Building Code of Australia.

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.

9.4.2.2 Purpose - Works code

1. The purpose of the Works 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. A high standard of electricity, telecommunications, roads, sewerage, water supply and street lighting services is provided to new development to meet the current and future needs of users of the site.

    c. Infrastructure and services are provided in an efficient manner.

    d. 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.

    e. The development does not result in unacceptable impacts on the capacity and safety of the external road network.

    f. The development ensures the safety, efficiency and usability of traffic movement, access ways and parking areas.

    g. Site works including earthworks are managed to be safe and have minimal impacts on adjoining or adjacent premises, the streetscape or the environment.

h. All structures including bridges, pontoons and retaining walls are designed and constructed in accordance with current standards and meet their intended design life.

i. 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 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. 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.

9.4.2.3 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 9.4.2.1. Where the development does not meet a requirement for accepted development (RAD) within Part A Table 9.4.2.1, 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 performance outcomes (PO)
RAD1	PO63
RAD2	PO63
RAD3	PO65
RAD4	PO65
RAD5	PO65
RAD6	PO27, PO28
RAD7	PO72

Part A - Requirements for accepted development - Works

Table 9.4.2.1 Requirements for accepted development - Works

Requirements for accepted development	
Works within a non-tidal artificial waterway	
RAD1	Pontoons, jetty's and berthed vessels are setback a minimum of 1.5 metres from the water allocation side boundaries.
RAD2	Boardwalks and decks are setback a minimum of 3 metres from the prolongation of side lot boundaries and extend no more than 3 metres seaward of the property boundary.
RAD3	Pontoons, jetty's, boardwalks and decks are not roofed.
RAD4	The underside of the jetty/gangway is a maximum of 300mm above the height of the revetment wall.
RAD5	All lighting, other than an aid to navigation, is hooded and directed downwards.
Access	
RAD6	An access driveway: a. serves no more that 2 lots; b. has a stormwater catchment less than 0.5 hectares for cross drainage purposes; c. has a longitudinal grade of less than 12%; d. has a depth of cut or fill less than 0.5m; e. has safe sight distance available at the road without the need for earthworks in the road; f. does not require any service alterations or extensions. Note - Refer to Australian Standard AS 2890 for further information on safe site distances.

RAD7	Rear allotment access driveways and crossovers, from the back of kerb for the full length of the access handle, are designed and constructed to the following minimum requirements: a. design loading of $2.3x10^3$ ESA for each lot entitled to use the driveway; b. a minimum sealed width of 3.0 metres; c. a constructed driveway crossover from the constructed road to the site is designed and constructed in accordance with Planning scheme policy - Integrated design; d. for urban residential driveways, within the site, reinforced concrete slabs or interlocking concrete pavers; e. for non-urban residential driveways, within the site, reinforced concrete slabs or a 2 coat sealed gravel or 25mm asphalt sealed gravel pavement. Pavement with minimum gravel class of 2.1 and minimum thickness of 150mm; f. appropriate longitudinal drainage, cross drainage and scour/erosion protection works provided in accordance with Planning scheme policy - Integrated design (Appendix C); g. the general maximum longitudinal grade is to be 16%; h. conduits for underground electricity supply and telecommunications are installed, including draw wires within and for the entire length of the access handle. Note - All works associated with the driveway access including cut and fill batters, drainage works and utility services are to be contained within the access handle or access easement. Note - Refer to relevant standard drawing RS-049, RS-050 or RS-056 included in Planning scheme policy - Integrated design (Appendix H) for constructed driveway crossover design.

Part B - Criteria for assessable development - Works

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 9.4.2.2 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 9.4.2.2 Assessable development - Works

Performance outcomes	Examples that achieve aspects of the Performance Outcomes
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;	**E1.1** Works incorporate temporary stormwater runoff, erosion and sediment controls and trash removal devises designed in accordance with the Urban Stormwater Quality Planning Guidelines, State Planning Policy, Schedule 10 - Stormwater management design objectives, Planning scheme

b. minimise as far as practicable, impacts on the natural environment; 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.	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.
	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 AS4970 Protection of trees on developments sites are adopted and implemented.
PO2	**E2**

Dust suppression measures are implemented during soil disturbances and construction works to protect nearby premises from unreasonable dust impacts.	No dust emissions extend beyond the boundaries of the site during soil disturbances and construction works.
PO3 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.	**E3.1** All native vegetation to be retained on-site is temporarily fenced or protected prior to and during development works. Note - No parking of vehicles or 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 All disturbed areas are to be progressively stabilised during construction and the entire site rehabilitated and substantially stabilised at the completion of construction.	**E4** At completion of construction all disturbed areas of the site are to be: a. topsoiled with a minimum compacted thickness of fifty (50) millimetres; b. stabilised using turf, established grass seeding, mulch or sprayed stabilisation techniques. Note - These areas are to be maintained during any maintenance period to maximise grass coverage.
PO5 Earthworks are undertaken to ensure that soil disturbances are staged into manageable areas.	No example provided.

Note - A site specific Erosion and Sediment Control Plan (ESCP) will 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).	
PO6 All development 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 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. Editor's note - Where associated with a State-controlled road, further requirements may apply, and approval may be required from the Department of Transport and Main Roads.	**E6.1** 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. **E6.2** 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. Contractor vehicles are generally not to be parked in existing roads. **E6.3** 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. **E6.4** Construction traffic to and from the development site use the highest classification streets or roads where a choice of access routes is available. Haul routes for the transport of imported or spoil material and gravel pavement material along Council roads below sub-arterial standard must be approved routes. Note - The road hierarchy is mapped on Overlay map - Road hierarchy. Note - A dilapidation report may be required to demonstrate compliance with this example. **E6.5** 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.
	E6.6 Access to the development site is obtained via an existing lawful access point.
PO7 All development works are carried out at times which minimise noise impacts to residents.	**E7** All development works are 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.
PO8 Any alteration or relocation in connection with or arising from the development to any service, installation, plant, equipment or other item belonging to or under control of the telecommunications authority, electricity authorities, the Council or other person engaged in the provision of public utility services, is carried out prior to the approval of the plan of subdivision.	No example provided.
Earthworks	
PO9 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; f. existing fill and soil contamination that may exist on-site;	**E9.1** All cut or fill batters are provided with appropriate scour, erosion protection and runoff control measures including catch drains at the top of batters and lined batter drains as necessary.
	E9.2 Stabilisation measures are provided, as necessary, to ensure long-term stability and low maintenance of steep slopes and batters.

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).	**E9.3** Inspection and certification of steep slopes and batters is required by a suitably qualified and experienced RPEQ.
	E9.4 All fill batters steeper than 1 (V) in 6 (H) on residential lots are fully turfed to prevent scour and erosion.
	E9.5 All filling or excavation is contained on-site and is free draining.
	E9.6 All fill placed on-site is: a. limited to that area 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.).
	E9.7 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.
PO10 Fill is not placed on existing or proposed park(57) unless specifically approved in writing by Council's engineer.	No example provided.
PO11 The location and extent of filling or excavation is limited to the extent necessary for the intended use of the site.	**E11** Filling or excavation does not encroach onto areas which do not form part of the development.
PO12 Filling or excavation does not result in:	No example provided.

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 outcome, 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.	
PO13 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.	**E13.1** 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 Schedule 2 of the Act. **E13.2** 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.
PO14 Filling or excavation does not result in land instability.	No example provided.

Note - Steep 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.	
PO15 Council is provided with accurate representations and quality assurance documentation of the completed works.	**E15** On maintenance documentation is provided in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
Street design and layout	
PO16 Development provides for a transport network which is designed to achieve a high level of legibility, permeability and connectivity particularly for pedestrians, cyclists and public transport both within the development and to the surrounding area.	**E16** Development provides for a street network in accordance with the desired street patterns in Planning scheme policy - Neighbourhood design.
PO17 Street design prioritises the movement and needs of pedestrians, cyclists, and public transport uses while providing a setting for social interaction and community life.	**E17** On street facilities for non-vehicular traffic such as cycle lanes and off-street facilities such as concrete footpaths and street furniture are designed and constructed in accordance with relevant standards located in Planning scheme policy - Integrated design.
PO18 The street design considers existing and future streetscapes in the surrounding area.	**E18** All adjoining streets: a. provide consistent footpath width, verge width, and road pavement widths where the street classifications are the same; b. provide landscape themes complimentary to each other that create a seamless transition between development sites.
PO19 Streets are designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures. The street and road design and construction accommodates the following primary functions: a. access to premises by providing convenient vehicular movement for residents between their homes and the major road network;	**E19.1** Streets and roads are designed and constructed in the appropriate zone and precinct in accordance with Planning scheme policy - Integrated design, Planning scheme policy - Operational works inspection, maintenance and bonding procedures and Austroads. **E19.2**

b. safe and convenient pedestrian and cycle movement; c. adequate on-street carparking; d. social and activity space; e. stormwater drainage paths and treatment facilities; f. efficient public transport; g. utility services; h. emergency access and waste collection; i. setting and approach (streetscape, landscaping and street furniture) for adjoining residences; j. expected traffic speeds and volumes; and k. wildlife movement (where relevant). Note - Preliminary road design (including all services, street lighting, stormwater infrastructure, access locations, street trees and pedestrian network) may be required to demonstrate compliance with this PO. Note - Refer to Planning scheme policy - Environmental areas and corridors for examples of when and where wildlife movement infrastructure is required.	Road pavement and surfaces are designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
	E19.3 Laneways and associated works are designed and constructed in accordance with Planning scheme policy – Integrated design and the following: a. central stormwater drainage system and inverted road cross-section to contain the minor storm ARI (piped) and major storm ARI (overland); b. reinforced concrete road pavement with colour and finish resembling a residential driveway in appearance. Concrete to be designed in accordance with rigid road pavement design principles or flexible pavement design with AC surfacing and concrete invert; c. industrial standard crossover at each end of the laneway, to cater for the turning movements of garbage collection trucks; d. services are not located in the laneway unless necessary to provide street lighting in accordance with the relevant Australian Standard; e. where a laneway provides access to residential lots it must: i. dedicate a minimum 2.5m wide pathway as road reserve along the park(57) frontage of the lots to contain all services and a 2.0m wide concrete path; ii. not locate electrical, water or sewerage services in the laneway.
	E19.4 Stormwater treatment is designed to capture pollutants ‘at source’ in lieu of end of line where possible.
	E19.5 On-street car parking is provided at a rate of no less than the rates identified in Planning scheme policy - Integrated design.

	E19.6 Street verge profiles and widths are provided in accordance with Planning scheme policy - Integrated design.
	E19.7 Typical service conduit sections are provided in locations in accordance with the relevant standard drawings in Planning scheme policy - Integrated design.
	E19.8 Areas of grass verge are to be graded away from the allotment at 1 in 20. Note - Council may approve a rising grade of 1 in 8 within 1 m of the property boundary.
	E19.9 Typical driveway grades extending from the street to within the allotments are provided in accordance with the relevant standard drawings in Planning scheme policy - Integrated design.
	E19.10 Sealed temporary turnaround areas are designed and constructed at the end of all roads that are to be extended with future development (including staged developments). The turnaround is to be of a configuration that enables Council's standard waste collection vehicle to undertake a three point turn or better. Note - Additional road reserve width may be required in order to provide the turnaround within road reserve, or easements may be required to provide lawful access. Note - Refer to Planning scheme policy - Waste for information on Council's waste collection vehicles.
	E19.11 Landscaping (including street trees) is provided in accordance with Planning scheme policy - Integrated design.
	E19.12

	Construction procedures are to be in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
PO20 The roads and drainage pathways have the capacity to safely convey stormwater flows for the 1% AEP event for the fully developed upstream catchment.	**E20.1** Except in the Rural zone, kerb and channel is provided to adequately convey road surface runoff to catchpits and other drainage features.
	E20.2 Kerb and channel and subsoil drains are to be provided in accordance with Planning scheme policy - Integrated design. Note - Council will consider Water Sensitive Urban Design alternatives based on their merit.
PO21 All Council controlled frontage roads are designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures. All new works are extended to join any existing works within 20m. Note - Frontage roads include streets where no direct lot access is provided. Note - The road network is mapped on Overlay map - Road hierarchy. Note - The primary and secondary active transport network is mapped on Overlay map - Active transport. Note - Roads are considered to be constructed in accordance with Council's standards when there is sufficient pavement width, geometry and depth to comply with the requirements of Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.	**E21** Where existing frontage roads do not form part of the modified grid pattern, and were created prior to the adoption of the current planning scheme, frontage roads are to be designed and constructed to integrate into the existing street network.
PO22 Sealed and flood free road access during the minor storm event is available to the site from the nearest arterial or sub-arterial road.	**E22** Roads or streets giving access to the development from the nearest arterial or sub-arterial road are flood free during the minor storm event and are sealed.

Editor's note - Where associated with a State-controlled road, further requirements may apply, and approvals may be required from the Department of Transport and Main Roads.	
PO23 Roads which provide access to the site from an arterial or sub-arterial road remain trafficable during major storm events without flooding or impacting upon residential properties or other premises.	**E23.1** Access roads to the development have sufficient longitudinal and cross drainage to remain safely trafficable during major storm (1% AEP) events. Note - The road network is mapped on Overlay map - Road hierarchy. Note - Refer to QUDM for requirements regarding trafficability.
	E23.2 Culverts and causeways do not increase inundation levels or increase velocities, for all events up to the Defined Flood Event, to upstream or downstream properties.
PO24 New works (new internal roads, pathways and frontage works) are extended to join any existing works that are within 20 metres of the end of the new work within and fronting the development.	**E24** All works are designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
PO25 New intersections along all streets and roads are located and designed to provide safe and convenient movements for all users.	**E25.1** Intersections are designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
	E25.2 Coloured asphaltic concrete (AC) or full depth coloured concrete threshold treatments are provided to differentiate Local Area Traffic Precincts as defined in Department of Transport and Main Roads' Manual of Uniform Traffic Control Device (MUTCD).
PO26 Existing on-street car parking is retained, wherever practicable, at new or upgraded road intersections and frontage roads.	**E26.1** Intersection design identifies the existing location of on-street carparking. New or augmented intersections are to ensure there is no loss of on-street car parking due to the intersection configuration.

	E26.2 Frontage road design and construction retains existing on-street parking wherever practicable.
PO27 All turns vehicular access to existing lots is retained, wherever practicable, at new or upgraded road intersections. Note - Allotment access locations must comply with AS/NZS 2890.1 Parking facilities Part 1: Off-street car parking.	No example provided.
PO28 New vehicular access locations are provided which are safe and convenient for the future users.	**E28** Proposed access points to allotments from existing or proposed roads are to be indicated on the drawings. Access locations shall be in accordance with Australian Standard AS/NZS 2890.1 Part 1: Off-street car parking.
PO29 The existing road network (whether trunk or non-trunk) is upgraded where necessary to cater for the impact from the development. Note - An applicant may be required to submit an Integrated Transport Assessment (ITA), prepared in accordance with Planning scheme policy - Integrated transport assessment to demonstrate compliance with this PO, when any of the following occurs: • Development is within 200m of a transport sensitive location such as a school, shopping centre, bus or train station or a large generator of pedestrian or vehicular traffic; • Forecast traffic to/from the development exceeds 5% of the two way flow on the adjoining road or intersection in the morning or afternoon transport peak within 10 years of the development completion; • Development access onto a sub arterial, or arterial road or within 100m of a signalised intersection; • Residential development greater than 50 lots or dwellings; • Offices greater than 4,000m^2 Gross Floor Area (GFA); • Retail activities including Hardware and trade supplies, Showroom, Shop or Shopping centre greater than 1,000m^2 GFA; • Warehouses(88) and Industry greater than 6,000m^2 GFA; • On-site carpark greater than 100 spaces; • Development has a trip generation rate of 100 vehicles or more within the peak hour; • Development which dissects or significantly impacts on an environmental area or an environmental corridor.	**E29.1** New intersections onto existing roads are designed to accommodate traffic volumes and traffic movements taken from a date 10 years from the date of completion of the last stage of the development. Detailed design is to be in accordance with Planning scheme policy - Integrated design. Note - All turns vehicular access to existing lots is to be retained at new road intersections wherever practicable. Note - Existing on-street parking is to be retained at new road intersections and along road frontages wherever practicable. **E29.2** Existing intersections external to the site are upgraded as necessary to accommodate increased traffic from the development. Detailed design is in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures. Note - Existing on-street parking is to be retained at upgraded road intersections and along road frontages wherever practicable.

The ITA is to review the development's impact upon the external road network for the period of 10 years from completion of the development. The ITA is to provide sufficient information for determining the impact and the type and extent of any ameliorative works required to cater for the additional traffic. The ITA must include a future structural road layout of adjoining properties that will form part of this catchment and road connecting to these properties. The ITA is to assess the ultimate developed catchment's impacts and necessary ameliorative works, and the works or contribution required by the applicant as identified in the study. Note - The road network is mapped on Overlay map - Road hierarchy. Note - The primary and secondary active transport network is mapped on Overlay map - Active transport.	Note - All turns vehicular access to existing lots is to be retained at upgraded road intersections wherever practicable. **E29.3** The active transport network is extended in accordance with Planning scheme policy - Integrated design.
PO30 The pedestrian and bikeway network is designed to provide for safe, attractive and convenient movement of pedestrians and cyclists between each residential precinct and major attractions such as neighbourhood hubs, community activities, parks, sporting facilities, bus routes (existing and planned) and railway stations.	**E30.1** All pathways are provided in accordance with the relevant standard drawings in Planning scheme policy - Integrated design. **E30.2** Pathway and cycle lane widths are in accordance with Planning scheme policy - Integrated design.
PO31 The road design facilitates walking and cycling within the neighbourhood and to neighbourhood hubs and local centres.	**E31.1** All pathways are provided in accordance with the relevant standard drawings and connect with: a. any existing concrete footpaths/cycle paths within 20m of the pathway; b. any proposed concrete footpaths/cycle paths in the development within 20m of the pathway; c. the kerb and channel by way of a kerb ramp; d. where there is no kerb and channel, the carriageway. **E31.2** Kerb ramps are provided in accordance with Planning scheme policy - Integrated design.
PO32 All Council controlled roads contain measures to ensure safety from errant vehicles, where there is a medium to high risk of significant damage or injury.	**E32** Safety barriers are provided in the following situations:

	a. fill formations on straights and curves where the height of the shoulder exceeds 4.5m and the slope of the fill batter is steeper than 1(V) in 4(H); b. where the consequences of a vehicle leaving the road would be severe (e.g. adjacent to a railway, river, creek, retaining wall, large structure or large tree); c. where the effective formation width is reduced (e.g. at a bridge or culvert); d. on roads in a rural area on the outside of substandard curves where: i. the curve design speed is 20kph less than the design speed of the road immediately preceding the curve; or ii. height of fill exceeds 2m; or iii. slope of the fill batter is steeper than 1(V) in 4 (H); e. split level roads where the height of fill exceeds 2m; f. medians of divided roads where the slope across the median exceeds 1(V) in 4(H). Note - An RPEQ must design, position and certify that safety barriers are provided in accordance with Austroad Standards.
PO33 Council is provided with accurate representations and quality assurance documentation of the completed works.	**E33** On maintenance documentation is provided in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
Stormwater management - Quantity	
PO34 All stormwater management drainage systems are designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures. The stormwater design:	No example provided.

a. utilises methods and materials to minimise the whole of life cycle costs of the stormwater management system; b. are coordinated with civil and landscaping works.	
PO35 Minor stormwater drainage systems (internal and external) have the capacity to convey stormwater flows from frequent storm events for the fully developed upstream catchment whilst ensuring pedestrian and vehicular traffic movements are safe and convenient.	**E35.1** Fully piped stormwater drainage is provided through existing park[(57)], or land to be dedicated as park[(57)], with capacity for the minor stormwater event except where the drainage channel through the park[(57)] is greater than 50m. The standard of drainage through parks is the same as the standard of drainage through lots.
	E35.2 The capacity of all minor drainage systems are designed in accordance with Planning scheme policy - Integrated design.
	E35.3 Stormwater pipe network capacity is to be calculated in accordance with the Hydraulic Grade Line method as detailed in Australian Rainfall and Runoff or QUDM.
	E35.4 Development ensures that inter-allotment drainage infrastructure is provided in accordance with the relevant level as identified in QUDM. Note - Development within the General residential zone and Township zone - Township residential precinct provide inter-allotment – QUDM level III drainage, including bunds, to all lots that have a gradient less than 1 in 100 (for the whole of the allotment) to the road. Provide the inter-allotment drainage system (including easements) in accordance with Planning scheme policy - Integrated design.
PO36 Major stormwater drainage system(s) have the capacity to safely convey stormwater flows for the 1% AEP event for the fully developed upstream catchment.	**E36.1** Development in the Rural zone provides roads, drainage pathways, drainage features and waterways to safely convey the stormwater flows for the 1% AEP event. Note - Pathways are designed and constructed to allow safe and convenient access for pedestrians and cyclists.
	E36.2

	Development in the Centre zone, Community facilities zone, Emerging community zone - Transition precinct, General residential zone, Industry zone, Rural residential zone and Township zone provides roads, drainage pathways, drainage features and waterways to safely convey the stormwater flows of the 1% AEP event and to ensure flows from a road or public open space area do not encroach upon private lots.
	E36.3 The minimum width of drainage pathways is 8m. Pathways are also designed and constructed to allow safe and convenient access for pedestrians and cyclists. Note - Pathways are designed and constructed to allow safe and convenient access for pedestrians and cyclists.
	E36.4 Major drainage systems have a minimum design of 1% AEP (ultimate development catchment characteristics upstream).
	E36.5 The flow velocity in all unlined or soft faced open drains is kept within acceptable limits for the type of material or lining and condition of the channel. Note - Refer to QUDM for recommended average flow velocities.
	E36.6 Development surface levels are provided in accordance with Planning scheme policy - Integrated design.
PO37 Bridges and culverts minimise traffic disruption, allow for terrestrial and aquatic habitat and fauna movements, bikeways and walkways.	**E37** Road cross drainage is designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
PO38 Stormwater management facilities are located outside of riparian areas and prevent increased channel bed and bank erosion.	No example provided.

PO39 Stormwater pipes in the road reserve are designed to accommodate the expected construction and operation design loadings and are constructed of durable and adequate materials. Note - All stormwater pipes including inter allotment drainage will be inspected in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.	No example provided.
PO40 Stormwater pipe layout is efficient and contained in the road reserve.	**E40** Stormwater pipe layout is in accordance with Planning scheme policy - Integrated design.
PO41 Catchpits in Council controlled roads are designed and constructed with lip in line inlets.	**E41** Kerb in line catchpits are designed and constructed in accordance with the relevant standard drawings in Planning scheme policy - Integrated design.
PO42 Stormwater runoff from the site is conveyed to a point of lawful discharge without causing actionable nuisance to any person, property or premises. Note - Refer to Planning scheme policy - Integrated design for details and examples. Note - A downstream discharge report in accordance with Planning scheme policy - Stormwater management may be required to demonstrate compliance with this performance outcome. Note - A watercourse as defined in the Water Act may be accepted as a lawful point of discharge providing the drainage discharge from the site does not increase the downstream flood levels during events up to and including the 1% AEP storm. An afflux of +20mm may be accepted on Council controlled land and road infrastructure. No worsening is ensured when stormwater is discharged into a catchment that includes State Transport Infrastructure.	No example provided.
PO43 Stormwater generated from the development does not compromise the capacity of existing stormwater infrastructure downstream of the site.	No example provided.

<table>
<tr><td>Note - A downstream drainage discharge report in accordance with Planning scheme policy - Stormwater management may be required to demonstrate compliance with this performance outcome.</td><td></td></tr>
<tr><td>PO44

Provide measures to properly manage surface flows for the 1% AEP event (for the fully developed catchment) draining to and through the land to ensure no actionable nuisance is created to any person or premises as a result of the development. The development must not result in ponding on adjacent land, redirection of surface flows to other premises or blockage of a surface flow relief path for flows exceeding the design flows for any underground system within the development.</td><td>E44

The stormwater drainage system is designed and constructed in accordance with Planning scheme policy - Integrated design.</td></tr>
<tr><td>PO45

Development provides surface and sub-surface drainage to prevent water seepage, concentration of run-off or ponding of stormwater on adjacent land.</td><td>E45

Development ensures all flows and subsoil drainage are directed to a lawful point of discharge of a surface water diversion drain, including to the top or toe of a retaining wall in accordance with the Planning scheme policy - Integrated design.</td></tr>
<tr><td>PO46

Stormwater drainage pipes and structures through or within private land (including inter-allotment drainage) are protected by easements in favour of Council with sufficient area for practical access for maintenance purposes.

Note - In order to achieve a lawful point of discharge, stormwater easements may also be required over temporary drainage channels/infrastructure where stormwater discharges to a balance lot prior to entering Council's stormwater drainage system.</td><td>E46.1

Stormwater drainage infrastructure (excluding detention and bio-retention systems) through or within private land (including inter-allotment drainage) is protected by easements in favour of Council. Minimum easement widths are in accordance with the table below:

<table><tr><th>Pipe Diameter</th><th>Minimum Easement Width (excluding access requirements)</th></tr><tr><td>Stormwater pipe up to 825mm diameter</td><td>3.0m</td></tr><tr><td>Stormwater pipe up to 825mm diameter with sewer pipe up to 225m diameter</td><td>4.0m</td></tr><tr><td>Stormwater pipe greater than 825mm diameter</td><td>Easement boundary to be 1m clear of the outside wall of the stormwater pipe (each side).</td></tr></table></td></tr>
</table>

	Note - Refer to Planning scheme policy - Integrated design (Appendix C) for easement requirements over open channels and detention basins.
	E46.2 Easements are provided over all headwalls and outlet structures within private land. The easement is to cover all drainage works and extend to the point where the stormwater flows return to natural flow conditions.
PO47 All lots have freeboard to major flood levels in rivers, creeks, watercourses and engineered open drains to facilitate dwelling construction without the need for levies or special dwelling design for flotation.	No example provided
Stormwater management - Quality	
PO48 Where development: a. involves a land area greater than 2500m^2; or b. results in 6 or more dwellings; or c. results in an impervious area greater than 25% of the net developable area, stormwater quality management systems are designed, constructed, established and maintained to minimise the environmental impact of stormwater on surface, groundwater and receiving water environments and meet the design objectives outlined in Schedule 10 - Stormwater management design objectives. Note - In this instance development for an urban purpose includes development with a density of 1.25 lots/dwellings per hectare and above, the entire development area is to be treated by the stormwater quality management system/s. For Rural residential development with a density less than 1.25 lots/dwellings per hectare, the road reserve is only to be treated by the stormwater quality management system/s. Note - A site based stormwater management plan prepared by a suitably qualified professional will be required in accordance with Planning scheme policy- Stormwater management. Stormwater quality infrastructure is to be designed in accordance with Planning scheme policy - Integrated design (Appendix C).	No example provided.
PO49	No example provided.

Where the development is Industrial or Commercial in nature, allotment specific stormwater quality treatment devices are not provided on privately owned land (i.e. regional devices must be provided in public land areas to treat industrial and commercial stormwater runoff). Note - A downstream discharge report in accordance with Planning scheme policy - Stormwater management may be required to demonstrate achievement of this performance outcome.	
PO50 Where development is in the Emerging community zone, the development achieves the greater pollutant removal of: a. no increase in mean annual pollutant loads (TSS, TP, TN and gross pollutants) from the existing land uses; or b. the stormwater management design objectives for post-construction as outlined in Schedule 10 - Stormwater management design objectives. Note - Achievement of this performance outcome may require the development to be in accordance with a stormwater management plan prepared for the area.	No example provided.
PO51 Stormwater quality infrastructure provided to Council meets its required design life, is safe to the public before, during and after a range of storm events, and is designed to minimise maintenance costs in accordance with Planning scheme policy - Integrated design (Appendix C) and Planning scheme policy - Operational works inspection, maintenance and bonding procedures.	**E51.1** Stormwater quality treatment devices and stormwater quantity devices have a safety inspection undertaken by a RPEQ prior to dedicating the facility over to Council.
	E51.2 Stormwater quality devices are provided with a trafficable access driveway between the device (including access to inlets, outlets and sediment forebays) and the constructed road suitable for Council's maintenance equipment. The design must include provision for a standing area outside the traffic lanes, for a standard MRV vehicle.
PO52 Areas constructed as detention basins are adaptable for passive recreation wherever practicable.	**E52** Large dry detention basins are designed to accommodate passive recreation. The basin includes a low flow drainage system with capacity to carry 3mm/hr rainfall in the catchment. The basin floor is sloped at not less than 1(V) to 100(H) towards its perimeter drains.

PO53 Community benefit is maximised through the retention and enhancement of natural streams and vegetation wherever practicable.	No example provided.
PO54 Vegetated stormwater management systems are provided to Council with established vegetation growth and the functional elements of the system achieving the design objectives at the end of the maintenance period.	**E54** Vegetated stormwater management systems proposed to be dedicated as public assets are established and maintained for a minimum 6 months maintenance period, commencing from a minimum built out of 80% of the catchment which contributes to the design of the vegetated stormwater management system or 2 years, whichever occurs first.
PO55 Stormwater management facilities (excluding outlets) are located outside of riparian areas and prevent increased channel bed and bank erosion.	No example provided.
PO56 Constructed water bodies proposed to be dedicated as public assets are avoided, unless there is an overriding need in the public interest.	No example provided.
PO57 Council is provided with accurate representations and quality assurance documentation of the completed works.	**E57** On maintenance documentation is provided in accordance with Planning scheme policy - Operational works inspection, maintenance and bonding procedures.
Public transport	
PO58 The road design provides for potential bus routes including safe convenient stops and, where necessary, bus turnaround areas. Note - Consult with Department of Transport and Main Roads on this matter.	**E58.1** Bus routes are located, designed and constructed in accordance with Planning scheme policy - Integrated design and relevant statutory requirements and regulations.
	E58.2 Indented bus bays are provided on roads identified as containing possible bus routes in Planning scheme policy - Integrated design. Indented bus bays are provided where the bus stop:

	a. is used as a timing point, where buses may need to wait several minutes if running early; or b. is used as a bus driver change-over point requiring the bus to stop for longer periods; or c. is a particularly high loading bus stop, where the time taken to load passengers can regularly take minutes.
	E58.3 Detailed design of bus stops, indented bus bays and relevant infrastructure is provided in accordance with the Transport Planning and Coordination Regulation 2005 and Translink's Public Transport Infrastructure Manual.
PO59 The road design caters for the extension of existing and future public transport routes to provide sufficient services that are convenient and accessible to the community.	No example provided.
Utilities	
PO60 Development in the Centre zone, Community facilities zone, Emerging community zone - Transition precinct, General residential zone, Industry zone, Recreation and open space zone, and Township zone is provided with services including water supply, sewage disposal, electricity, street lighting, telecommunications and gas (if available) in accordance with Planning scheme policy - Integrated design (Appendix A).	No example provided.
PO61 Development in the Emerging community zone - Interim precinct, Rural zone and Rural residential zone is provided with services including water supply, sewage disposal, electricity, street lighting, telecommunications and gas (if available) in a manner that: a. is effective in delivery of service and meets reasonable community expectations; b. has capacity to service the maximum lot yield envisaged for the zone and the service provider's design assumptions; c. ensures a logical, sequential, efficient and integrated roll out of the service network; d. is conveniently accessible in the event of maintenance or repair;	**E61** Development in the Emerging community zone - Interim precinct, Rural zone and Rural residential zone is provided with an appropriate level of service and infrastructure in accordance with Planning scheme policy - Integrated design (Appendix A).

e. minimises whole of life cycle costs for that infrastructure; f. minimises risk of potential adverse impacts on the natural and built environment; g. minimises risk of potential adverse impact on amenity and character values; h. recognises and promotes Councils Total Water Cycle Management policy and the efficient use of water resources.	
PO62 All services crossing or traversing existing or proposed roads shall be designed and constructed in accordance with Planning scheme policy - Integrated design and Planning scheme policy - Operational works inspection, maintenance and bonding procedures and shall be installed at an appropriate depth with backfill compacted to ensure that the construction does not fail during the life of the development.	**E62.1** All services crossing or traversing existing or proposed road pavements, including stormwater pipes, sewer pipes, electrical, telecommunications and water conduits, shall be installed at an appropriate depth and backfilled in accordance with Department of Transport and Main Roads specifications.
	E62.2 Services crossing existing arterial and sub-arterial roads are to be tunnel bored. Note - The road network is mapped on Overlay map - Road hierarchy. Note - Services crossing other existing roads may require tunnel boring.
	E62.3 Services are to be installed at the minimum depth in accordance with the relevant standard drawings.
Works within a waterway Note - Design and construction of prescribed tidal works shall comply with the requirements of the Coastal Protection and Management Act, and Queensland Prescribed Tidal Works Code.	
PO63 All constructed works avoid conflict with uses in the water, on the foreshore and adjoining lands.	**E63.1** Pontoons, jetty's and berthed vessels are setback a minimum of 1.5 metres from the water allocation side boundaries.
	E63.2 Boardwalks and decks are setback a minimum of 3 metres from the prolongation of side lot boundaries and extend no more than 3 metres seaward of the property boundary.

PO64 Marine structures proposed to rise and fall under tidal influence are designed to suit the installed environment.	**E64** Floating structures are to maintain the following clearance from a waterway bed during the LAT tide, a. a minimum of 200 mm from the current bank where located outside of a constructed canal; or b. a minimum of 200 mm from the design bank profile of the constructed canal; or c. the floating structure is designed to withstand periodic grounding without damage or detrition of the structure for the design life of the works.
PO65 A high level of visual amenity is maintained when viewed from the waterway and adjoining lands with minimal impact upon adjoining properties.	**E65.1** The underside of the jetty/gangway is a maximum of 300mm above the height of the revetment wall.
	E65.2 Pontoons, jetty's, boardwalks and decks are not roofed.
	E65.3 All lighting, other than an aid to navigation, is hooded and directed downwards;
PO66 No structural load from the work is permitted to be imposed upon existing canal revetment walls.	No example provided.
Structures	
PO67 All earth retaining structures are to be certified as being designed and constructed in accordance with relevant Australian Standards and Building Code requirements.	**E67** Retaining walls are designed and certified by an RPEQ so that: a. the minimum design life (the period assumed in design for which a structure or structural element is required to perform its intended purpose without replacement or major structural repairs) for the earth retaining structure is that specified in Australian Standard AS 4678 Earth-retaining structures; b. earth retaining structures within the land and around areas of cut on or near the boundaries of the site must be designed to allow for live and

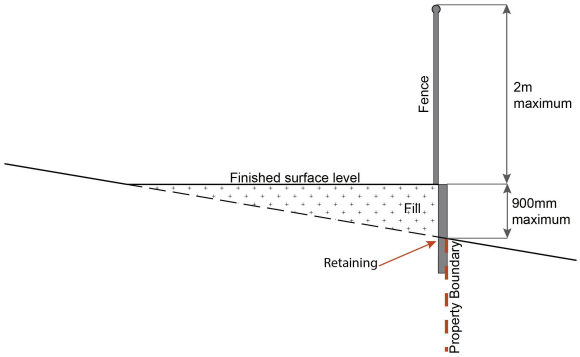
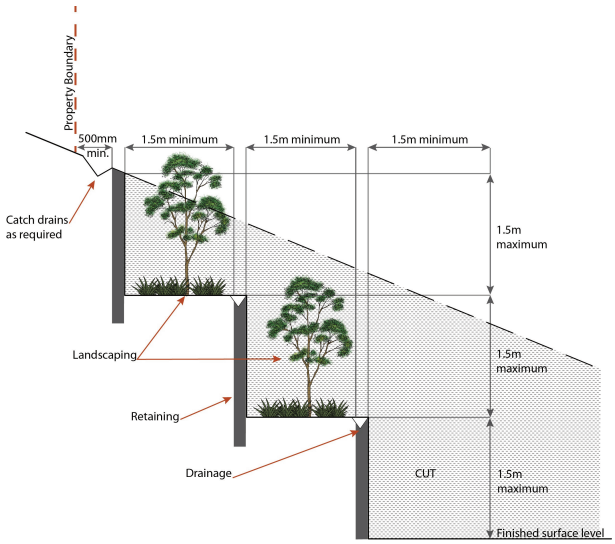
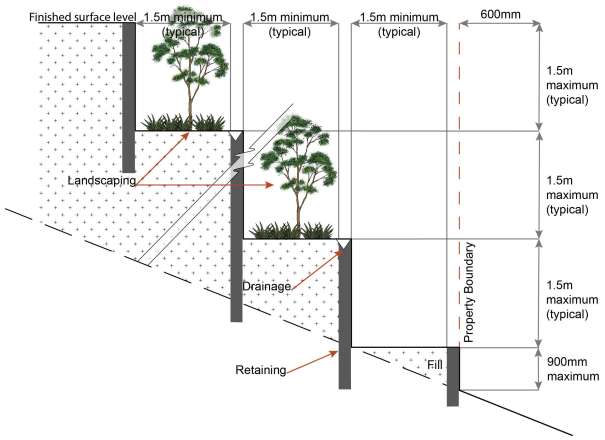
	dead loads associated with the land/premise's current occupancy and use; c. where the adjoining land use rights or zoning allows for industrial uses, a minimum live load of 25kPA must be allowed in the design of the retaining structure for these adjoining premises. Note - Retaining walls will only be approved following submission of a full detailed design certified by an RPEQ.
PO68 All earth retaining structures provide a positive interface with the streetscape and minimises impacts on the amenity of adjoining residents.	**E68** Earth retaining structures: a. are not constructed of boulder rocks or timber; b. where height is no greater than 900mm, are provided in accordance with Figure - Retaining on a boundary; **Figure - Retaining on boundary**  c. where height is greater than 900mm but no greater than 1.5m, are to be setback at least the equivalent height of the retaining structure from any property boundary; d. where height is greater than 1.5m, are to be setback and stepped 1.5m vertical: 1.5m horizontal, terraced, landscaped and drained as shown below.

	Figure - Cut  **Figure - Fill** 
PO69 Retaining walls: a. comply with the current edition of AS4678 Earth-retaining structures; b. are fully contained in the property boundaries; c. where agricultural drains, are to be provided behind all retaining walls at the base and connected to an approved point of discharge; d. where free draining gravel or filter material, are to be provided behind all retaining walls; e. within public land are constructed from durable materials (service life of 50-100 years) and include a concrete mowing edge strip (minimum width 200mm) along the toe of all retaining walls;	No example provided.

f. have made provision for all services, including but not limited to, interallotment and roof-water drainage, water conduits, telecommunication, and power and gas conduits; g. incorporated cut-off drains are to be directed to an approved point of discharge; h. allow for the construction of a boundary fence; i. include safety fencing to all earth retaining structures over 1.0m in height.	
PO70 Planning and design of all bridges considers the following: a. overall configuration and the road geometry or planning layout of the bridge and its approaches; b. design methodology, design parameters including design loadings, design life (minimum 100 years), materials and finishes and any proposed public utilities and services to run across the bridge; c. where the bridge is over a waterway; design ARI, the freeboard to design flood events or details of overtopping, allowance for debris loading and details of proposed scour and erosion protection to the waterway and embankments; d. where the bridge is proposed to be constructed as a feature of the estate, details of the materials, construction techniques, and a safety review of any architectural features of the bridge is provided. Note - A bridge configuration report addressing the issues above is to be provided and approved by Council prior to undertaking detailed design of the bridge structure. Note - The design shall include an assessment of inspection and maintenance serviceability of the proposed design.	**E70** Bridges are to be designed and constructed in accordance with recommended best practice design guidelines as provided in Planning scheme policy - Integrated design, an approved Bridge Configuration Report and an approved Bridge Construction Management Report. Note - Bridge Construction Management Report is to be provided and approved by Council, which addresses (but is not limited to) the following: a. proposed construction procedure and program; b. details of all temporary works proposed for the construction; c. identification of all construction risks and methods for reducing these risks; d. public safety, amenity and site security; e. operating hours, noise and vibration controls; f. air and dust management; g. stormwater runoff, erosion and sediment control; h. waste and materials rufuse management; i. traffic management; j. construction materials delivery and storage; and k. construction office accommodation.
PO71 All bridge construction activities protect the environmental values of the locality, while ensuring that the public safety is ensured prior to and during the construction of the structure.	**E71** Construction management plans for the works provides for the following: a. proposed construction procedure and program; b. potential temporary works proposed for the construction; c. identification of all construction risks and methods for reducing these risks;

	d. public safety, amenity and site security; e. operating hours, noise and vibration controls; f. air and dust management; g. stormwater runoff, erosion and sediment control; h. waste and materials refuse management; i. traffic management; j. construction materials delivery and storage; k. location of construction office accommodation.
Access	
PO72 Access handles for rear lots are: a. of a sufficient design to accommodate anticipated vehicle access and manoeuvring, required infrastructure and services, landscaping and refuse collection areas; b. located, designed and constructed to ensure: i. the access will not have an adverse impact on adjoining lots due to the generation of excessive noise, dust, headlight intrusion, overland flow, or the like; ii. appropriate grading, verge cross section and safe sight distance can be achieved for accessing vehicles, through traffic and active transport users on the verge.	**E72** Rear allotment access driveways and crossovers, from the back of kerb for the full length of the access handle, are designed and constructed to the following minimum requirements: a. design loading of $2.3x10^3$ ESA for each lot entitled to use the driveway; b. a minimum sealed width of 3.0 metres; c. a constructed driveway crossover from the constructed road to the site is designed and constructed in accordance with Planning scheme policy - Integrated design; d. for urban residential driveways, within the site, reinforced concrete slabs or interlocking concrete pavers; e. for non-urban residential driveways, within the site, reinforced concrete slabs or a 2 coat sealed gravel or 25mm asphalt sealed gravel pavement. Pavement with minimum gravel class of 2.1 and minimum thickness of 150mm; f. appropriate longitudinal drainage, cross drainage and scour/erosion protection works provided in accordance with Planning scheme policy - Integrated design (Appendix C); g. the general maximum longitudinal grade is to be 16%; h. conduits for underground electricity supply and telecommunications are installed, including draw wires within and for the entire length of the access handle. Note - All works associated with the driveway access including cut and fill batters, drainage works and utility services are to be contained within the access handle or access easement.

	Note - Refer to relevant standard drawing RS-049, RS-050 or RS-056 included in Planning scheme policy - Integrated design (Appendix H) for constructed driveway crossover design.
PO73 Relocation or alteration of existing services are undertaken as a result of the access easement.	No example provided.
Clearing of habitat trees where not located within the Environmental areas overlay map	
PO74 a. Development ensures that the biodiversity quality and integrity of habitats is not adversely impacted upon but maintained and protected. b. Development does not result in the net loss of fauna habitat. Where development does result in the loss of a habitat tree, development will provide replacement fauna nesting boxes at the following rate of 1 nest box for every hollow removed. Where hollows have not yet formed in trees > 80cm in diameter at 1.3m height, 3 nest boxes are required for every habitat tree removed. c. Development does not result in soil erosion or land degradation or leave land exposed for an unreasonable period of time but is rehabilitated in a timely manner Note: Further guidance on habitat trees is provided in Planning scheme policy - Environmental areas	No example provided.
PO75 Where clearing occurs in the Caboolture West local plan area, compensatory planting is located in the Green network precinct.	No example provided.
Values and constraint 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.

PO76	E76
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	
PO77 Development avoids a High Value Area or a Value Offset Area. Where it is not practicable or reasonable for development to avoid 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. mechanisms or processes are in place demonstrating that any detrimental impacts on biodiversity and ecological values is replaced, restored or rehabilitated, for example through the development of a Vegetation Management Plan and a Fauna Management Plan.	No example provided.
PO78 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	
PO79 Development ensures that the biodiversity quality and integrity of habitats is not adversely impacted upon but maintained and protected.	No example provided.
PO80	No example provided.

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.	
PO81 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	
PO82 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	
PO83 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	No example provided.

used for animal husbandry[4] and animal keeping[5] activities.	
PO84 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	
PO85 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.
PO86 Development minimises potential adverse 'edge effects' on ecological values by: a. providing dense planting buffers of native vegetation between a development, environmental areas and corridors; b. retaining patches of native vegetation of greatest possible size where located between a development, environmental areas and corridors; c. ensuring that works and infrastructure are setback as far as possible from environmental areas and corridors; d. 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.	No example provided.
PO87	No example provided.

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.	
Vegetation clearing and Matters of Local Environmental Significance (MLES) environmental offsets	
PO88 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)	
PO89 Development does not prevent or constrain the acquisition, construction or function and efficient transport of extractive material using a extractive resources transport route.	**E89** Works are not carried out in a extractive resources transport route and buffer, 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.	
PO90 Works do not: a. reduce public access to a heritage place, building, item or object;	No example provided.

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.	
PO91 Works retain significant trees and incorporates them into the provision of infrastructure.	No example provided.
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.	
PO92 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.	**E92** 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.
PO93 Works are designed to respond to sloping topography in the siting, design and form of works by: a. minimising overuse of cut and fill to create single flat pads and benching; b. avoiding expanses of retaining walls, loss of trees and vegetation and interference with natural drainage systems; c. minimising any adverse impact on the landscape character of the zone.	No example provided.

Infrastructure buffers (refer Overlay map - Infrastructure buffers to determine if the following assessment criteria apply)	
PO94 Development 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.	**E94** Development does not involve works in a Bulk water supply infrastructure buffer.
PO95 Development in a gas pipeline buffer: a. maintains adequate access for any required maintenance or upgrading work; b. minimises risk of harm to people and property.	**E95** Development does not involve works in a gas pipeline buffer.
PO96 Development in a High voltage electricity line buffer: a. is located and designed in a manner that maintains a high level of security of supply; b. is located and design so not to impede upon the functioning and maintenance of high voltage electrical infrastructure.	**E96** Development does not involve works in a high voltage electricity line buffer.
PO97 Development in the Water supply buffer: a. does not result in soil erosion or land degradation or leave cleared land exposed for an unreasonable period of time but is rehabilitated in a timely matter; b. avoids or minimises changes to hydrological water flows and flow velocity to reduce erosion; c. ensures effective vegetated buffers and setbacks from waterbodies is retained to achieve natural filtration and reduce sediment loads; d. preserves and maintains the ecological values inherent to the area; e. retains habitat trees; f. complies with the Water Quality Vision and Objectives contained on the Seqwater Development Guidelines: Development Guidelines for Water Quality Management in Drinking Water Catchments 2017 and SPP guidance material.	No example provided.

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.	
PO98 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.
PO99 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. 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.	No example provided.
PO100 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.
PO101	**E101**

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.	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.
PO102 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.	**E102** 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.
PO103 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	**E103.1** Development ensures that inter-allotment drainage infrastructure is provided in accordance with the relevant level as identified in QUDM. Note - Development within the General residential zone and Township zone - Township residential precinct provide inter-allotment - QUDM level III drainage, including bunds, to all lots that have a gradient less than 1 in 100 (for the whole of the allotment) to the road. Provide the inter-allotment drainage system (including easements) in accordance with Planning scheme policy - Integrated design. **E103.2** 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.
PO104 Development protects the conveyance of overland flow such that an easement for drainage purposes is provided over: 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.	No example provided.

Note - Stormwater Drainage easement dimensions are provided in accordance with Section 3.8.5 of QUDM.	
Additional criteria for development for a Park[57]	
PO105 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; b. impacts on the asset life and integrity of park structures is minimised; c. maintenance and replacement costs are minimised.	**E105** 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.
Riparian and wetland setbacks	
PO106 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.	**E106** 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.