6.3.5 Works, Services and Infrastructure

Note – These Standard Outcomes apply to the extent they are identified as requirements or assessment benchmarks in the Categorisation Tables in Part 3.

Table 6.3.5a – Standard Outcomes for Works, Services and Infrastructure

	9. Infrastructure Services Note – In accordance with Section 3.1(11), where development does not comply with one or more of the Standard Outcomes under this theme, Merit Outcomes MO1.1 to MO1.2 (1. General theme) and MO9.1 to MO9.6 (9. Infrastructure and Services theme), become assessment benchmarks. Section 3.6 provides further guidance.
SO1	All uses and lots are provided with a connection to a water service that is: (a) a connection to a reticulated network in accordance with the Design Guidelines and Specifications set out in the *FNQROC Development Manual* where: (i) within a reticulated water supply service area; and (ii) in the *Centre Zone*, *Community Facilities Zone*, *Industry Zone*, *Low Density Residential Zone* or *Low-Medium Density Residential Zone*; or (b) where paragraph (a) is not applicable, potable water is supplied through the use of: (i) a bore or bores provided in accordance with the Design Guidelines and Specifications set out in the *FNQROC Development Manual*; or (ii) on-site water storage tank/s provided with a minimum total capacity of 90,000L and fitted with a 50mm ball valve with a camlock fitting.
SO2	All uses and lots are provided with a connection to a sewerage system that is: (a) a connection to a reticulated network in accordance with the Design Guidelines and Specifications set out in the *FNQROC Development Manual* where: (i) within a reticulated sewerage service area; and (ii) in the *Centre Zone*, *Community Facilities Zone*, *Industry Zone*, *Low Density Residential Zone* or *Low-Medium Density Residential Zone*; or (b) where paragraph (a) is not applicable, an effluent disposal system provided in accordance with *ASNZ1547 On-Site Domestic Wastewater Management*.
SO3	Other than within the *Environmental Management and Conservation Zone*, the *Rural Zone* or the *Rural Residential Zone* development: (a) is provided with a stormwater management system that provides for the detention of on-site stormwater to the extent necessary for the development to not result in an increase in stormwater flows from the site; (b) where involving a land area greater than 2,500m^2 or the creation of more than six (6) lots, designed to support the treatment of the quality of stormwater to the extent necessary to achieve the stormwater quality objectives specified in **Table 6.3.5b**; and (c) includes temporary works and stormwater management controls at construction stage that are achieve the stormwater management design objectives specified in **Table 6.3.5c**, **Table 6.3.5d** and **Table 6.3.5e**. Note – The preparation of a Stormwater Management Plan may assist in demonstrating compliance with SO3. Note – SO3 does not apply to Carrying Out Building Work.

	9. Infrastructure Services (continued) Note – In accordance with Section 3.1(11), where development does not comply with one or more of the Standard Outcomes under this theme, Merit Outcomes MO1.1 to MO1.2 (1. General theme) and MO9.1 to MO9.6 (9. Infrastructure and Services theme), become assessment benchmarks. Section 3.6 provides further guidance.
SO4	All stormwater infrastructure is designed in accordance with the: (a) Design Guidelines and Specifications set out in the *FNQROC Development Manual*; and (b) *Queensland Urban Drainage Manual* (QUDM).
SO5	Stormwater collected on the site is directed to a lawful point of discharge. Note – SO5 does not apply to Carrying Out Building Work.
SO6	All uses and lots are provided with a connection to a power supply. In all zones, other than the *Environmental Management and Conservation Zone*, *Rural Zone* or *Rural Residential Zone*, this connection is to be to a reticulated electricity supply network in accordance with the suppliers' relevant standards.
SO7	All uses and lots are provided with a connection to a telecommunications service. Note – A mobile telecommunications service may be used to achieve compliance with SO7.
SO8	Development does not result in the damage of any existing infrastructure.
SO9	Lighting is provided in accordance with: (a) *AS4282 – Control of Obtrusive Effects of Outdoor Lighting*; and (b) *AS2560 – Sports Lighting* where involving sports lighting.
SO10	Mechanical services are screened from view from any adjoining property or road reserve.
SO11	Infrastructure intended to be owned and/or maintained by a public sector entity is located: (a) within a road reserve; or (b) within public parkland; or (c) on private land, with an easement provided to facilitate lawful access to, and maintenance of, the infrastructure by the public sector entity.
SO12	Infrastructure intended to be owned and/or maintained by a public sector entity is provided with a method of access that is in accordance with the specifications for the relevant public sector entity.
SO13	Development must not cause significant adverse drainage impacts on adjacent sites. Note – SO13 is not applicable to the determination of whether development is Accepted Development.

	14. Parking, Access and Transport Note – In accordance with Section 3.1(11), where development does not comply with one or more of the Standard Outcomes under this theme, Merit Outcomes MO1.1 to MO1.2 (1. General theme) and MO14.1 to MO14.8 (14. Parking, Access and Transport theme), become assessment benchmarks. Section 3.6 provides further guidance.
SO14	All roads and footpaths are designed in accordance with: (a) the Design Guidelines and Specifications set out in the *FNQROC Development Manual*; and (b) AUSTROADS Guide to Traffic Engineering Practice Series.
SO15	Vehicular access is provided to any new lot created from a formed road by way of a vehicular crossover designed in accordance with the Design Guidelines and Specifications set out in the *FNQROC Development Manual*.

	14. Parking, Access and Transport (continued) Note – In accordance with Section 3.1(11), where development does not comply with one or more of the Standard Outcomes under this theme, Merit Outcomes MO1.1 to MO1.2 (1. General theme) and MO14.1 to MO14.8 (14. Parking, Access and Transport theme), become assessment benchmarks. Section 3.6 provides further guidance.
SO16	Where Reconfiguring a Lot involves more than 20 lots, a Traffic Impact Assessment Report is prepared by a suitably qualified person that demonstrates that the development will not detrimentally impact on the safety or efficiency of the existing or future road network.
SO17	All signage provided in relation to internal or external vehicle movement areas is in accordance with the Manual of Uniform Traffic Control Devices.
SO18	All uses are provided with a dedicated refuse storage area that includes sufficient storage for all waste containers associated with the use.

	7. Filling and Excavation Note – These Standard Outcomes do not apply to Carrying Out Building Work. Note – In accordance with Section 3.1(11), where development does not comply with one or more of the Standard Outcomes under this theme, Merit Outcomes MO1.1 to MO1.2 (1. General theme) and MO7.1 to MO7.6 (7. Filling and Excavation theme), become assessment benchmarks. Section 3.6 provides further guidance.
SO19	Retaining of soil is completed through the stepping of walls and batters in accordance with the following requirements: (a) the total combined height of all retaining structures does not exceed three (3) metres; (b) any single element of retaining (wall or batter) does not exceed a height of one (1) metre; and (c) each element of retaining provided is separated from another element by a horizontal distance of at least one (1) metre to achieve a stepping of retaining.
SO20	Filling and excavation does not involve soil that: (a) has been sourced from a site that is included on the Environmental Management Register or the Contaminated Land Register; or (b) contains acid sulfate soils; or (c) is contaminated.
SO21	Filling and excavation is undertaken in accordance with an Erosion and Sediment Control Plan prepared by a suitably qualified person.
SO22	Earthworks, retaining walls and batters are designed in accordance with the *FNQROC Development Manual*, unless contrary to another Standard Outcome of this planning scheme. Note – The *FNQROC Development Manual* is relevant to SO22 to the extent it does not relate to structural matters.

Table 6.3.5b – Post Construction Phase Stormwater Quality Objectives

Design objectives	Reductions in mean annual load from unmitigated development (%)
Total suspended solids (TSS)	80
Total phosphorus (TP)	60
Total nitrogen (TN)	40
Gross pollutants >5mm	90
Waterway stability management	Limit the peak 1-year ARI event discharge within the receiving waterway to the pre-development peak 1-year ARI discharge

Table 6.3.5c – Construction Phase Stormwater Quality Objectives

Issue	Desired Outcomes
Drainage control	1. Manage stormwater flows around or through areas of exposed soil to avoid contamination. 2. Manage sheet flows in order to avoid or minimise the generation of rill or gully erosion. 3. Provide stable concentrated flow paths to achieve the construction phase stormwater management design objectives for temporary drainage works (**Table 6.3.5d**). 4. Provide emergency spillways for sediment basins to achieve the construction phase stormwater management design objectives for emergency spillways on temporary sediment basins (**Table 6.3.5e**).
Erosion control	1. Stage clearing and construction works to minimise the area of exposed soil at any one time. 2. Effectively cover or stabilise exposed soils prior to predicted rainfall. 3. Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised using methods which will achieve effective short-term stabilisation. Note – An effectively stabilised surface is defined as one that does not, or is not likely to, result in visible evidence of soil loss caused by sheet, rill or gully erosion or lead to sedimentation water contamination.
Sediment control	1. Direct runoff from exposed site soils to sediment controls that are appropriate to the extent of disturbance and level of erosion risk. 2. All exposed areas greater than 2500m^2 must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated (i.e. 80% hydrological effectiveness) to 50mg/L Total Suspended Solids (TSS) or less, and pH in the range (6.5–8.5).
Litter, hydrocarbons and other contaminants	1. Remove gross pollutants and litter. 2. Avoid the release of oil or visible sheen to released waters. 3. Dispose of waste containing contaminants at authorised facilities.

Issue	Desired Outcomes
Waterway stability and flood flow management	1. Where measures are required to meet post-construction waterway stability objectives (specified in **Table 6.3.5b**), these are either installed prior to land disturbance and are integrated with erosion and sediment controls, or equivalent alternative measures are implemented during construction. 2. Earthworks and the implementation of erosion and sediment controls are undertaken in ways which ensure flooding characteristics (including stormwater quantity characteristics) external to the development site are not worsened during construction for all events up to and including the 1 in 100 year ARI (1% AEP).

Table 6.3.5d – Construction Phase Stormwater Quality Objectives (Temporary Drainage Works)

Temporary Drainage Works	Anticipated operation design life and minimum design storm event		
	< 12 months	12–24 months	> 24 months
Drainage structure	1 in 2 year ARI / 39% AEP	1 in 5 year ARI / 18% AEP	1 in 10 year ARI / 10% AEP
Where located immediately up-slope of an occupied property that would be adversely affected by the failure or overtopping of the structure	1 in 10 year ARI/10% AEP		
Culvert crossing	1 in 1 year ARI / 63% AEP		

Table 6.3.5e – Construction Phase Stormwater Quality Objectives (Emergency Spillways on Temporary Sediment Basins

Temporary Drainage Works	Anticipated operation design life and minimum design storm event		
	< 3 months	3–12 months	> 12 months
Emergency spillways on temporary sediment basins	1 in 10 year ARI / 10% AEP	1 in 20 year ARI / 5% AEP	1 in 50 year ARI / 2% AEP

Note – Refer to IECA 2008 Best Practice Erosion and Sediment Control (as amended) for details on the application of the Construction Phase requirements. Advice should be obtained from a suitably qualified person.