In the Planning and Environment Court No 2916 of 2024
Held at: Brisbane

Between: **DAVID MANTEIT** Appellant

And: **BRISBANE CITY COUNCIL** Respondent

SECTION 232 CERTIFICATE
CITY OF BRISBANE ACT 2010

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Attachments to Section 232 Certificate
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CITY LEGAL – BRISBANE CITY COUNCIL
Level 20, 266 George Street
BRISBANE Q 4000
Tel: (07) 3178 5581
Fax: (07) 3334 0058
Email: sarah.mccabe1@brisbane.qld.gov.au

Schedule 1 Definitions

SC1.1 Use definitions

SC1.1.1 Defined uses

1. The use definitions listed in Table SC1.1.1.A have a particular meaning stated in Table SC1.1.1.B for the purpose of the planning scheme.
2. Any use not listed in Table SC1.1.1.B column 1 is an undefined use.

Note—Development comprising a combination of defined uses is not considered to be an undefined use.

3. The use definitions listed here are the definitions used in this planning scheme.
4. A use listed in Table SC1.1.1.B column 1 has the meaning set out beside that term in column 2.
5. Column 3 of Table SC1.1.1.B identifies examples of the types of activities that are consistent with the use identified in column 1.
6. Column 4 of Table SC1.1.1.B identifies examples of activities that are not consistent with the use identified in column 1.
7. Columns 3 and 4 of Table SC1.1.1.B are not exhaustive lists.
8. Uses listed in Table SC1.1.1.B columns 3 and 4 which are not listed in column 1 do not form part of the definition.

Table SC1.1.1.A—Index of use definitions

Index of use definitions		
Adult store	Health care service	Relocatable home park
Agricultural supplies store	High impact industry	Renewable energy facility
Air service	Home-based business	Research and technology industry
Animal husbandry	Hospital	
Animal keeping	Hotel	Residential care facility
Aquaculture	Indoor sport and recreation	Resort complex
Bar	Intensive animal industry	Retirement facility
Brothel	Intensive horticulture	Roadside stall
Bulk landscape supplies	Landing	Rooming accommodation
Car wash	Low impact industry	Rural industry
Caretaker's accommodation	Major electricity infrastructure	Rural workers' accommodation
Cemetery	Major sport, recreation and entertainment facility	Sales office
Childcare centre		Service industry
Club	Marine industry	Service station
Community care centre	Market	Shop
Community residence	Medium impact industry	Shopping centre
Community use	Motor sport facility	Short-term accommodation
Crematorium	Multiple dwelling	Showroom
Cropping	Nature-based tourism	Special industry
Detention facility	Nightclub entertainment facility	Substation

Dual occupancy Dwelling house Dwelling unit Educational establishment Emergency services Environment facility Extractive industry Food and drink outlet Function facility Funeral parlour Garden centre Hardware and trade supplies	Office Outdoor sales Outdoor sport and recreation Outstation Park Parking station Party house Permanent plantation Place of worship Port service	Telecommunications facility Theatre Tourist attraction Tourist park Transport depot Utility installation Veterinary service Warehouse Wholesale nursery Winery Workforce accommodation

Table SC1.1.1.B—Use definitions

Column 1 **Use term**	**Column 2** **Use definition**	**Column 3** **Examples include**	**Column 4** **Does not include the following examples**
Adult store Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Adult store means the use of premises for the primary purpose of displaying or selling— a. sexually explicit materials; or b. products and devices that are associated with, or used in, a sexual practice or activity.	Sex shop	Shop, newsagent, registered pharmacist or video hire, where the primary use of these are concerned with: • the sale, display or hire of printed or recorded matter (not of a sexually explicit nature); or • the sale or display of underwear or lingerie; or • the sale or display of an article or thing primarily concerned with or used in association with a medically recognised purpose.
Agricultural supplies store Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Agricultural supplies store means the use of premises for the sale of agricultural supplies and products. Examples of agricultural supplies and products—animal feed, bulk veterinary supplies, chemicals, farm clothing, fertilisers, irrigation materials, saddlery, seeds		Bulk landscape supplies, garden centre, outdoor sales, wholesale nursery

Air service Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Air service means the use of premises for— a. the arrival or departure of aircraft; or b. housing, servicing, refuelling, maintaining or repairing aircraft; or c. the assembly and dispersal of passengers or goods on or from an aircraft; or d. training and education facilities relating to aviation; or e. aviation facilities; or f. an activity that— i. is ancillary to an activity or facility stated in paragraphs (a) to (e); and ii. directly services the needs of aircraft passengers. Examples of an air service—airport, air strip, helipad	Airport, airstrip, helipad, public or private airfield	
Animal husbandry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Animal husbandry means the use of premises for— a. producing animals or animal products on native or improved pastures or vegetation; or b. a yard, stable, temporary holding facility or machinery repairs and servicing, if the use is ancillary to the use in paragraph (a). Examples of animal husbandry—cattle stud, grazing of livestock, non-feedlot dairy	Cattle studs, grazing of livestock, non-feedlot dairying	Animal keeping, intensive animal husbandry, aquaculture, feedlots, piggeries
Animal keeping Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Animal keeping means the use of premises for— a. boarding, breeding or training animals; or b. a holding facility or machinery repairs and servicing, if the use is ancillary to the use in paragraph (a).	Aviaries, catteries, kennels, stables, wildlife refuge	Aquaculture, cattle studs, domestic pets, feedlots, grazing of livestock, non-feedlot dairying, piggeries, poultry meat and egg production, animal husbandry

	Examples of animal keeping—aviary, cattery, kennel, stables, wildlife refuge		
Aquaculture Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Aquaculture means the cultivation of live fisheries resources for sale other than in circumstances prescribed under a regulation. Note—definition from the *Fisheries Act 1994*.	Pond farms, tank systems, hatcheries, raceway system, rack and line systems, sea cages	Intensive animal husbandry
Bar Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Bar means the use of premises, with seating for 60 or less people, for— a. selling liquor for consumption on the premises; or b. an entertainment activity, or preparing and selling food and drink for consumption on the premises, if the use is ancillary to the use in paragraph (a).		Club, hotel, nightclub entertainment facility, tavern
Brothel Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Brothel means the use of premises made available for prostitution by 2 or more prostitutes at the premises. Note—definition from the *Prostitution Act 1999*.		Adult store, club, entertainment facility, nightclub, shop
Bulk landscape supplies Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Bulk landscape supplies means the use of premises for the bulk storage and sale of mainly non-packaged landscaping and gardening supplies, including, for example, soil, gravel, potting mix or mulch.		Garden centre, outdoor sales, wholesale nursery
Car wash Editor's note—The use term is defined in the *Planning Regulation 2017*	Car wash means the use of premises for the commercial cleaning of motor vehicles.		Service station

- Regulated Requirements			
Caretaker's accommodation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Caretaker's accommodation means the use of premises for a dwelling for a caretaker of a non-residential use on the same premises.		Dwelling house
Cemetery Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Cemetery means the use of premises for interment of bodies or ashes after death.	Burial ground, crypt, columbarium, lawn cemetery, pet cemetery, mausoleum	Crematorium, funeral parlour
Childcare centre Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Childcare centre means the use of premises for the care, education and minding, but not residence, of children. Examples of a childcare centre—before or after school care, crèche, early childhood centre, kindergarten, vacation care	Crèche, early childhood centre, kindergarten, outside-hours school care	Educational establishment, home-based child care, family day care
Club Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Club means the use of premises for— a. an association established for social, literary, political, sporting, athletic or other similar purposes; or b. preparing and selling food and drink, if the use is ancillary to the use in paragraph (a).	Club house, guide and scout clubs, surf lifesaving club, RSL, bowls club	Hotel, nightclub, entertainment facility, place of worship, theatre
Community care centre Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated	Community care centre— a. means the use of premises for— i. providing social support to members of the public; or ii. providing medical care to members of the	Disability support services, drop-in centre, respite centre, integrated Indigenous support centre	Childcare centre, family day care, health care service, home-based child care, residential care facility

Requirements	public, if the use is ancillary to the use in subparagraph (i); but b. does not include the use of premises for providing accommodation to members of the public. Examples of a community care centre— disability support service, drop-in centre, respite centre, indigenous support centre		
Community residence Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Community residence— a. means the use of premises for residential accommodation for— i. no more than— A. 6 children, if the accommodation is provided as part of a program or service under the *Youth Justice Act 1992*; or B. 6 persons who require assistance or support with daily living needs; and ii. no more than 1 support worker; and b. includes a building or structure that is reasonably associated with the use in paragraph (a).	Hospice	Dwelling house, dwelling unit, residential care facility, rooming accommodation, short-term accommodation
Community use Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Community use means the use of premises for— a. providing artistic, social or cultural facilities or community services to the public; or b. preparing and selling food and drink, if the use is ancillary to the use in paragraph (a). Examples of a community use— art gallery, community centre, community hall, library, museum	Art gallery, community centre, community hall, library, museum	Cinema, club, entertainment facility, hotel, nightclub, place of worship

Crematorium Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Crematorium means the use of premises for the cremation or aquamation of bodies.		Cemetery
Cropping Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Cropping means the use of premises for— a. growing and harvesting plants, or plant material, that are cultivated in soil, for commercial purposes; or b. harvesting, storing or packing plants or plant material grown on the premises, if the use is ancillary to the use in paragraph (a); or c. repairing and servicing machinery used on the premises, if the use is ancillary to the use in paragraph (a). Examples of cropping— forestry for wood production, fodder and pasture production, producing fruit, nuts, vegetables and grains, plant fibre production, sugar cane growing, vineyard	Fruit, nut, vegetable and grain production, forestry for wood production, fodder and pasture production, plant fibre production, sugarcane growing, vineyard	Permanent plantations, intensive horticulture, rural industry
Detention facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Detention facility means the use of premises for the lawful detention of persons. Example of a detention facility— correctional facility	Prison, detention centre, youth detention centre	Police station, court cell complex
Dual occupancy Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Dual occupancy— a. means a residential use of premises involving— i. 2 dwellings (whether attached or detached) on a single lot or 2 dwellings (whether attached or detached)	Duplex, two dwellings on a single lot (whether or not attached), two dwellings within one single community title scheme under the	Dwelling house, multiple dwelling

	on separate lots that share a common property; and ii. any domestic outbuilding associated with the dwellings; but b. does not include a residential use of premises that involves a secondary dwelling.	*Body Corporate and Community Management Act 1997*, two dwellings within the one body corporate to which the *Building Units and Group Title Act 1980* continues to apply	
Dwelling house Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Dwelling house means a residential use of premises involving— a. 1 dwelling and any domestic outbuildings associated with the dwelling; or b. 2 dwellings, 1 of which is a secondary dwelling, and any domestic outbuildings associated with either dwelling.		Caretaker's accommodation, dual occupancy, rooming accommodation, short-term accommodation, student accommodation, multiple dwelling
Dwelling unit Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Dwelling unit means the use of premises containing a non-residential use for a single dwelling, other than a dwelling for a caretaker of the non-residential use.	'Shop-top' apartment	Caretaker's accommodation, dwelling house
Educational establishment Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Educational establishment means the use of premises for— a. training and instruction to impart knowledge and develop skills; or b. student accommodation, before or after school care, or vacation care, if the use is ancillary to the use in paragraph (a). Examples of an educational establishment— college, outdoor education centre, primary school, secondary school, special education facility, technical institute, university	Pre-preparatory, preparatory and primary school, secondary school, special education, college, university, technical institute, outdoor education centres	Childcare centre, home-based child care, family day care

Emergency services Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Emergency services means the use of premises by a government entity or community organisation to provide— a. essential emergency services; or b. disaster management services; or c. management support facilities for the services. Examples of emergency services— ambulance station, evacuation centre, fire station, police station	State emergency service facility, ambulance station, rural fire brigade, auxiliary fire and rescue station, urban fire and rescue station, police station, emergency management support facility, evacuation centres	Community use, hospital, residential care facility
Environment facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Environment facility— a. means the use of premises for a facility for the appreciation, conservation or interpretation of an area of cultural, environmental or heritage value; but b. does not include the use of premises to provide accommodation for tourists and travellers.	Nature-based attractions, walking tracks, seating, shelters, boardwalks, observation decks, bird hides	
Extractive industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Extractive industry means the use of premises for— a. extracting or processing extractive resources; and b. any related activities, including, for example, transporting the resources to market.	Quarry	
Food and drink outlet Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Food and drink outlet means the use of premises for— a. preparing and selling food and drink for consumption on or off the premises; or b. providing liquor for consumption on or off the premises, if the use is ancillary to the use in paragraph (a). Examples of a food and drink outlet—cafe, coffee shop, drive-	Bistro, cafe, coffee shop, drive-through facility, kiosk, milk bar, restaurant, snack bar, takeaway, tearoom	Bar, club, entertainment facility, hotel, shop, theatre, nightclub

	through facility, kiosk, milk bar, restaurant, snack bar, takeaway shop, tearoom		
Function facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Function facility means the use of premises for— a. receptions or functions; or b. preparing and providing food and liquor for consumption on the premises as part of a reception or function.	Conference centre, reception centre	Community use, hotel
Funeral parlour Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Funeral parlour— a. means the use of premises for— i. arranging and conducting funerals, memorials and other similar events; or ii. a mortuary; or iii. storing and preparing bodies for burial or cremation; but b. does not include the use of premises for the burial or cremation of bodies.		Cemetery, crematorium, place of worship
Garden centre Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Garden centre means the use of premises for— a. selling plants; or b. selling gardening and landscape products and supplies that are mainly in pre-packaged form; or c. a food and drink outlet that is ancillary to the use in paragraph (a).	Retail plant nursery	Bulk landscape supplies, wholesale nursery, outdoor sales
Hardware and trade supplies Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Hardware and trade supplies means the use of premises for selling, displaying or hiring hardware and trade supplies, including, for example, house fixtures, timber, tools, paint, wallpaper or plumbing supplies.		Shop, showroom, outdoor sales and warehouse
Health care	Health care service means the	Dental clinics,	Community care centre,

service Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	use of premises for medical purposes, paramedical purposes, alternative health therapies or general health care, if overnight accommodation is not provided on the premises. Examples of a health care service— dental clinic, medical centre, physiotherapy clinic	medical centres, natural medicine practices, nursing services, physiotherapy clinic	hospital
High impact industry Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	High impact industry means the use of premises for an industrial activity— a. that is the manufacturing, producing, processing, repairing, altering, recycling, storing, distributing, transferring or treating of products; and b. that a local planning instrument applying to the premises states is a high impact industry; and c. that complies with any thresholds for the activity stated in a local planning instrument applying to the premises, including, for example, thresholds relating to the number of products manufactured or the level of emissions produced by the activity. For the purposes of the planning scheme a high impact industry is an industry activity that— a. has one or more of the following attributes— i. potential for significant impacts on sensitive land uses due to off-site emissions including aerosol, fume, particle, smoke, odour and noise; ii. potential for significant off-site impacts in the event of fire, explosion or toxic release;	Abattoirs, concrete batching plant, boiler making and engineering and metal foundry Note—Additional examples may be shown in SC1.1.3.A industry thresholds.	Tanneries, rendering plants, oil refineries, waste incineration, manufacturing or storing explosives, power plants, manufacturing fertilisers, service industry, low impact industry, medium impact industry, special industry

	iii. generates high traffic flows in the context of the locality or the road network; iv. generates a significant demand on the local infrastructure network; v. on-site controls are required for emissions and dangerous goods risks; and b. complies with any thresholds for the activity stated in SC1.1.3 industry thresholds.		
Home-based business Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Home-based business means the use of a dwelling or domestic outbuilding on premises for a business activity that is subordinate to the residential use of the premises.	Bed and breakfast, home office, home-based childcare	Hobby, office, shop, warehouse, transport depot
Hospital Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Hospital means the use of premises for— a. the medical or surgical care or treatment of patients, whether or not the care or treatment requires overnight accommodation; or b. providing accommodation for patients; or c. providing accommodation for employees, or any other use, if the use is ancillary to the use in paragraph (a) or (b).		Health care service, residential care facility
Hotel Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Hotel— a. means the use of premises for— i. selling liquor for consumption on the premises; or ii. a dining or entertainment activity, or providing accommodation to tourists or travellers, if	Pub, tavern	Entertainment facility, nightclub

	the use is ancillary to the use in subparagraph (i); but b. does not include a bar.		
Indoor sport and recreation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Indoor sport and recreation means the use of premises for a leisure, sport or recreation activity conducted wholly or mainly indoors. Examples of indoor sport and recreation— amusement parlour, bowling alley, gymnasium, squash court	Amusement parlour, bowling alley, gymnasium, squash courts, enclosed tennis courts	Cinema, entertainment facility, hotel, nightclub, theatre
Intensive animal industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Intensive animal industry— a. means the use of premises for— i. the intensive production of animals or animal products, in an enclosure, that requires food and water to be provided mechanically or by hand; or ii. storing and packing feed and produce, if the use is ancillary to the use in subparagraph (i); but b. does not include the cultivation of aquatic animals. Examples of intensive animal industry— feedlot, piggery, poultry and egg production	Feedlots, piggeries, poultry and egg production	Animal husbandry, aquaculture, drought feeding, milking sheds, shearing sheds, weaning pens
Intensive horticulture Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Intensive horticulture— a. means the use of premises for— i. the intensive production of plants or plant material carried out indoors on imported media; or ii. the intensive production of plants or plant material carried out outside using artificial lights or containers; or iii. storing and packing	Greenhouse and shade house plant production, hydroponic farms, mushroom farms	Wholesale nursery

	plants or plant material grown on the premises, if the use is ancillary to the use in subparagraph (i) or (ii); but b. does not include the cultivation of aquatic plants. Examples of intensive horticulture— greenhouse, hydroponic farm, mushroom farm		
Landing Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Landing means the use of premises for a structure— a. for mooring, launching, storing and retrieving vessels; and b. from which passengers embark and disembark.	Boat ramp, jetty, pontoon	Marina
Low impact industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Low impact industry means the use of premises for an industrial activity— a. that is the manufacturing, producing, processing, repairing, altering, recycling, storing, distributing, transferring or treating of products; and b. that a local planning instrument applying to the premises states is a low impact industry; and c. that complies with any thresholds for the activity stated in a local planning instrument applying to the premises, including, for example, thresholds relating to the number of products manufactured or the level of emissions produced by the activity. For the purposes of the planning scheme a low impact industry is an industry activity that— a. has one or more of the following attributes— i. negligible impacts on	Repairing motor vehicles, fitting and turning workshop Editor's note— These and any additional examples shown in SC1.1.3 industry thresholds only comprise a low impact industry where complying with the thresholds for the activity stated in SC1.1.3 industry thresholds.	Panel beating, spray painting or surface coating, tyre recycling, drum re-conditioning, wooden and laminated product manufacturing, service industry, medium impact industry, high impact industry, special industry

	sensitive land uses due to off-site emissions including aerosol, fume, particle, smoke, odour and noise; ii. minimal traffic generation and heavy-vehicle usage; iii. demands imposed upon the local infrastructure network consistent with surrounding uses; iv. off-site impacts from storage of dangerous goods are negligible; v. the use is primarily undertaken indoors; and b. complies with any thresholds for the activity stated in SC1.1.3 industry thresholds.		
Major electricity infrastructure Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Major electricity infrastructure— a. means the use of premises for— i. a transmission grid or supply network; or ii. a telecommunication facility, if the use is ancillary to the use in subparagraph (i); but b. does not include the use of premises for a supply network or private electricity works stated in the *Planning Regulation 2017*, schedule 6, section 26(5), unless the use involves— i. a new zone substation or bulk supply substation; or ii. the augmentation of a zone substation or bulk supply substation that significantly increases the input or output standard voltage.	Powerlines greater than 66kV	Minor electricity infrastructure, substation
Major sport, recreation and	Major sport, recreation and entertainment facility means the	Convention and exhibition centres,	Indoor sport and recreation, local sporting

entertainment facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	use of premises for large-scale events, including, for example, major sporting, recreation, conference or entertainment events. Examples of a major sport, recreation and entertainment facility— convention centre, exhibition centre, horse racing facility, sports stadium	entertainment centres, sports stadiums, horse racing	field, motor sport, park, outdoor sport and recreation
Marine industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Marine industry means the use of waterfront premises for— a. manufacturing, storing, repairing or servicing vessels or maritime infrastructure; or b. providing fuel or disposing of waste, if the use is ancillary to the use in paragraph (a). Examples of marine industry— boat building, boat storage, dry dock	Boat building, boat storage, dry dock	Marina
Market Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Market means the use of premises on a regular basis for— a. selling goods to the public mainly from temporary structures, including, for example, stalls, booths or trestle tables; or b. providing entertainment, if the use is ancillary to the use in paragraph (a).	Flea market, farmers market, car boot sales	Shop, roadside stall
Medium impact industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Medium impact industry means the use of premises for an industrial activity— a. that is the manufacturing, producing, processing, repairing, altering, recycling, storing, distributing, transferring or treating of products; and b. that a local planning instrument applying to the premises states is a medium impact industry; and c. that complies with any thresholds for the activity stated in a local planning	Spray painting and surface coating, wooden and laminated product manufacturing (including cabinet making, joining, timber truss making or wood working) Editor's note— These and any additional examples shown in SC1.1.3 industry	Concrete batching, tyre manufacturing and retreading, metal recovery (involving a fragmentiser), textile manufacture, chemically treating timber and plastic product manufacture, service industry, low impact industry, high impact industry, special industry

	instrument applying to the premises, including, for example, thresholds relating to the number of products manufactured or the level of emissions produced by the activity. For the purposes of the planning scheme a medium impact industry is an industry activity that— a. has one or more of the following attributes— i. potential for noticeable impacts on sensitive land uses due to off-site emissions including aerosol, fume, particle, smoke, odour and noise; ii. potential for noticeable off-site impacts in the event of fire, explosion or toxic release; iii. generates high traffic flows in the context of the locality or the road network; iv. generates an elevated demand on the local infrastructure network; v. on-site controls are required for emissions and dangerous goods risks; vi. the use is primarily undertaken indoors; and b. complies with any thresholds for the activity stated in SC1.1.3 industry thresholds.	thresholds only comprise a medium impact industry where complying with the thresholds for the activity stated in SC1.1.3 industry thresholds.	
Motor sport facility Editor's note—The use term is defined in the *Planning Regulation 2017* - Regulated	Motor sport facility means the use of premises for— a. organised or recreational motor sports; or b. facilities for spectators, including, for example, stands, amenities and food and drink outlets, if the use is	Go-karting, lawnmower race tracks, trail-bike parks, 4WD and all terrain parks, motocross tracks, off-road motorcycle facility,	Major sport, recreation and entertainment facility, outdoor sport and recreation

Requirements	ancillary to the use in paragraph (a). Examples of a motor sport facility— car race track, go-kart track, trail bike park, 4WD park	motorcycle or car race tracks	
Multiple dwelling Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Multiple dwelling means a residential use of premises involving 3 or more dwellings, whether attached or detached.	Apartments, flats, units, townhouses, row housing, triplex	Rooming accommodation, dual occupancy, duplex, granny flat, residential care facility, retirement facility
Nature-based tourism Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Nature-based tourism means the use of premises for a tourism activity, including accommodation for tourists, for the appreciation, conservation or interpretation of— a. an area of environmental, cultural or heritage value; or b. a local ecosystem; or c. the natural environment. Examples of nature-based tourism— environmentally responsible accommodation facilities including cabins, huts, lodges and tents	Environmentally responsible accommodation facilities including lodges, cabins, huts and tented camps	Environment facility
Nightclub entertainment facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Nightclub entertainment facility means the use of premises for— a. providing entertainment that is cabaret, dancing or music; or b. selling liquor, and preparing and selling food, for consumption on the premises, if the use is ancillary to the use in paragraph (a).		Club, hotel, tavern, pub, indoor sport and recreation, theatre, concert hall
Office Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated	Office— a. means the use of premises for— i. providing an administrative, financial, management or secretarial service or	Bank, real estate agent, administration building	Home-based business, home office, shop, outdoor sales

Requirements	function; or ii. the practice of a profession; or iii. providing business or professional advice or services; but b. does not include the use of premises for making, selling or hiring goods. Examples of an office— bank, real estate agency		
Outdoor sales Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Outdoor sales means the use of premises for— a. displaying, selling, hiring or leasing vehicles, boats, caravans, machinery, equipment or other similar products, if the use is mainly conducted outdoors; or b. repairing, servicing, selling or fitting accessories for the products stated in paragraph (a), if the use is ancillary to the use in paragraph (a).	Agricultural machinery sales yard, motor vehicles sales yard	Bulk landscape supplies, market
Outdoor sport and recreation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Outdoor sport and recreation means the use of premises for— a. a recreation or sporting activity that is carried on outdoors and requires areas of open space; or b. providing and selling food and drink, change room facilities or storage facilities, if the use is ancillary to the use in paragraph (a). Examples of outdoor sport and recreation— cricket oval, driving range, golf course, swimming pool, tennis court	Driving range, golf course, swimming pool, tennis courts, football ground, cricket oval	Major sport, recreation and entertainment facility, motor sport, park, community use
Outstation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Outstation means the use of premises for— a. cultural or recreation activities by Aboriginal people or Torres Strait Islanders; or b. facilities for short-term or long-term camping activities,	Indigenous camp site	Dwelling house, hostel, multiple dwelling, relocatable home park, short-term accommodation, tourist park

	if the use is ancillary to the use in paragraph (a).		
Park Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Park means the use of premises, accessible to the public free of charge, for sport, recreation and leisure activities and facilities.	Urban common	Tourist attraction, outdoor sport and recreation
Parking station Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Parking station means the use of premises for parking vehicles, other than parking that is ancillary to another use.	Car park, 'park and ride', bicycle parking	
Party house Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Party house means premises containing a dwelling that is used to provide, for a fee, accommodation or facilities for guests if— a. guests regularly use all or part of the premises for parties (bucks parties, hens parties, raves, or wedding receptions, for example); and b. the accommodation or facilities are provided for a period of less than 10 days; and c. the owner of the premises does not occupy the premises during that period.		
Permanent plantation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Permanent plantation means the use of premises for growing, but not harvesting, plants for carbon sequestration, biodiversity, natural resource management or another similar purpose.	Permanent plantations for carbon sequestration, biodiversity or natural resource management	Forestry for wood production, biofuel production
Place of worship	Place of worship means the use	Church, chapel,	Community use,

Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	of premises for— a. organised worship and other religious activities; or b. social, education or charitable activities, if the use is ancillary to the use in paragraph (a).	mosque, synagogue, temple	childcare centre, funeral parlour, crematorium
Port service Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Port service means the use of premises for— a. the arrival and departure of vessels; or b. the movement of passengers or goods on or off vessels; or c. storing, servicing, maintaining or repairing vessels; or d. ancillary uses that directly service the needs of passengers of the vessels.	Marina, ferry terminal	Landing
Relocatable home park Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Relocatable home park means the use of premises for— a. relocatable dwellings for long-term residential accommodation; or b. amenity facilities, food and drink outlets, a manager's residence, or recreation facilities for the exclusive use of residents, if the use is ancillary to the use in paragraph (a).		Tourist park
Renewable energy facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Renewable energy facility— a. means the use of premises for the generation of electricity or energy from a renewable energy source, including, for example, sources of bio-energy, geothermal energy, hydropower, ocean energy, solar energy or wind energy; but b. does not include the use of premises to generate electricity or energy that is to be used mainly on the premises.	Solar farm, wind farm, tidal power, hydroelectric power, geothermal power	Wind turbine or solar panels supplying energy to domestic or rural activities on the same site

Research and technology industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Research and technology industry means the use of premises for an innovative or emerging industry that involves designing and researching, assembling, manufacturing, maintaining, storing or testing machinery or equipment. Examples of research and technology industries— aeronautical engineering, biotechnology industries, computer component manufacturing, computer server facilities, energy industries, medical laboratories	Aeronautical engineering, computer component manufacturing, medical laboratories, computer-server facility	
Residential care facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Residential care facility means the use of premises for supervised accommodation, and medical and other support services, for persons who— a. can not live independently; and b. require regular nursing or personal care. Examples of a residential care facility— convalescent home, nursing home	Convalescent home, nursing home	Community residence, dwelling house, dual occupancy, hospital, multiple dwelling, retirement facility
Resort Complex Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Resort complex means the use of premises for— a. tourist and visitor accommodation that includes integrated leisure facilities; or Examples of integrated leisure facilities— bars, meeting and function facilities, restaurants, sporting and fitness facilities b. staff accommodation that is ancillary to the use in paragraph (a); or c. transport facilities for the premises, including, for example, a ferry terminal or air service.	Island resort	
Retirement facility Editor's note—	Retirement facility means a residential use of premises for— a. accommodation for older	Retirement village	Residential care facility

The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	members of the community, or retired persons, in independent living units or serviced units; or b. amenity and community facilities, a manager's residence, health care and support services, preparing food and drink or staff accommodation, if the use is ancillary to the use in paragraph (a).		
Roadside stall Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Roadside stall means the use of premises for the roadside display and sale of goods in a rural area.	Produce stall	Market
Rooming accommodation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Rooming accommodation means the use of premises for— a. residential accommodation, if each resident— i. has a right to occupy 1 or more rooms on the premises; and ii. does not have a right to occupy the whole of the premises; and iii. does not occupy a self-contained unit, as defined under the *Residential Tenancies and Rooming Accommodation Act 2008*, schedule 2, or has only limited facilities available for private use; and iv. shares other rooms, facilities, furniture or equipment outside of the resident's room with 1 or more other residents, whether or not the rooms, facilities,	Boarding house, monastery, hostel, off-site student accommodation	Hospice, community residence, dwelling house, short-term accommodation, multiple dwelling

	furniture or equipment are on the same or different premises; or b. a manager's residence, an office or providing food or other service to residents, if the use is ancillary to the use in paragraph (a). Examples of rooming accommodation— boarding house, hostel, monastery, off-site student accommodation		
Rural industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Rural industry means the use of premises for— a. storing, processing or packaging products from a rural use carried out on the premises or adjoining premises; or b. selling products from a rural use carried out on the premises or adjoining premises, if the use is ancillary to the use in paragraph (a).	Packing shed	Intensive animal husbandry, intensive horticulture, roadside stall, wholesale nursery, winery, abattoir, agricultural supply store
Rural workers' accommodation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Rural workers' accommodation means the use of premises for accommodation, whether or not self-contained, for employees of a rural use, if the premises, and the premises where the rural use is carried out, are owned by the same person.	Farm workers accommodation	Short-term accommodation building, caretaker's accommodation, dual occupancy, dwelling house, nature or rural based tourist accommodation, workforce accommodation, multiple dwellings
Sales office Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Sales office means the use of premises for the temporary display of land parcels or buildings that— a. are for sale or proposed to be sold; or b. can be won as a prize in a competition.	Display dwelling	Bank, office
Service industry Editor's note—	Service industry means the use of premises for an industrial	Audio visual equipment repair,	Small engine mechanical repair workshop, cabinet

The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	activity that— a. does not result in off-site air, noise or odour emissions; and b. is suitable for location with other non-industrial uses. Examples of service industries— audio visual equipment repair, bicycle repairs, clock and watch repairs, computer repairs, dry cleaning, film processing, hand engraving, jewellery making, laundromat, locksmith, picture framing, shoe repairs, tailor	film processing, bicycle repairs, clock and watch repairs, computer repairs, dry cleaning, hand engraving, jewellery making, laundromat, locksmith, picture framing, shoe repairs, tailor	making, shop fitting, sign writing, tyre depot, low impact industry, medium impact industry, high impact industry, special industry
Service station Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Service station means the use of premises for— a. selling fuel, including, for example, petrol, liquid petroleum gas, automotive distillate or alternative fuels; or b. a food and drink outlet, shop, trailer hire, or maintaining, repairing, servicing or washing vehicles, if the use is ancillary to the use in paragraph (a).	Electric charging station	Car wash
Shop Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Shop means the use of premises for— a. displaying, selling or hiring goods; or b. providing personal services or betting to the public. Examples of a shop— betting agency, corner store, department store, discount variety store, hair dressing salon, liquor store, supermarket	Hairdresser, liquor store, department store, discount department store, discount variety stores, betting agencies, supermarket, corner store	Adult store, food and drink outlet, showroom, market
Shopping centre Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Shopping centre means the use of premises for an integrated shopping complex consisting mainly of shops.		

Short-term accommodation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Short-term accommodation— a. means the use of premises for— i. providing accommodation of less than 3 consecutive months to tourists or travellers; or ii. a manager's residence, office, or recreation facilities for the exclusive use of guests, if the use is ancillary to the use in subparagraph (i); but b. does not include a hotel, nature-based tourism, resort complex or tourist park.	Motel, backpackers, cabins, serviced apartments, accommodation hotel, farm stay	Hostel, rooming accommodation, tourist park
Showroom Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Showroom means the use of premises for the sale of goods that are of— a. a related product line; and b. a size, shape or weight that requires— i. a large area for handling, display or storage; and ii. direct vehicle access to the building that contains the goods by members of the public, to enable the loading and unloading of the goods. Examples of a showroom— bulk stationery supplies, bulky goods sales, bulk home supplies, motor vehicle sales showroom	Bulky goods sales, motor vehicles sales showroom, bulk stationery supplies	Food and drink outlet, shop, outdoor sales
Special industry Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Special industry means the use of premises for an industrial activity— a. that is the manufacturing, producing, processing, repairing, altering, recycling, storing, distributing, transferring or treating of products; and	Tanneries, rendering plants, oil refineries, waste incineration, manufacturing or storing explosives, power plants, manufacturing fertilisers.	Low impact industry, medium impact industry, high impact industry, service industry

	b. that a local planning instrument applying to the premises states is a special industry; and c. that complies with any thresholds for the activity stated in a local planning instrument applying to the premises, including, for example, thresholds relating to the number of products manufactured or the level of emissions produced by the activity. For the purposes of the planning scheme a special industry is an industry activity that— a. has one or more of the following attributes— i. significant potential for extreme impacts on sensitive land uses due to off-site emissions including aerosol, fume, particle, smoke, odour and noise; ii. potential for extreme off-site impacts in the event of fire, explosion or toxic release; iii. on-site controls are required for emissions and dangerous goods risks; iv. the use generally involves night-time and outdoor activities; v. the use may involve the storage and handling of large volumes of dangerous goods; vi. requires significant separation from non-industrial uses; and b. complies with any thresholds for the activity stated in SC1.1.3 industry thresholds.	Note—Additional examples may be shown in SC1.1.3 industry thresholds.	
Substation	Substation means the use of	Substations,	Major electricity

Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	premises— a. as part of a transmission grid or supply network to— i. convert or transform electrical energy from one voltage to another; or ii. regulate voltage in an electrical circuit; or iii. control electrical circuits; or iv. switch electrical current between circuits; or b. for a telecommunications facility for— i. works, as defined under the Electricity Act, section 12(1); or ii. workforce operational and safety communications.	switching yards	infrastructure, minor electricity infrastructure
Telecommuni-cations facility Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Telecommunications facility means the use of premises for a facility that is capable of carrying communications and signals by guided or unguided electromagnetic energy.	Telecommunication tower, broadcasting station, television station	Aviation facility, 'low-impact telecommunications facility' as defined under the *Telecommunications Act 1997*
Theatre Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Theatre means the use of premises for— a. presenting movies, live entertainment or music to the public; or b. the production of film or music; or c. the following activities or facilities, if the use is ancillary to a use in paragraph (a) or (b)— i. preparing and selling food and drink for consumption on the premises; ii. facilities for editing and post-production;	Cinema, movie house, concert hall, dance hall, film studio, music recording studio	Community hall, hotel, indoor sport and recreation facility, temporary film studio

	iii. facilities for wardrobe, laundry and make-up; iv. set construction workshops; v. sound stages. Examples of a theatre— cinema, concert hall, film studio, music recording studio		
Tourist attraction Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Tourist attraction means the use of premises for— a. providing entertainment to, or a recreation facility for, the general public; or b. preparing and selling food and drink for consumption on the premises, if the use is ancillary to the use in paragraph (a). Examples of a tourist attraction— theme park, zoo	Theme park, zoo	Hotel, major sport, recreation and entertainment facility, nightclub entertainment facility
Tourist park Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Tourist park means the use of premises for— a. holiday accommodation in caravans, self-contained cabins, tents or other similar structures; or b. amenity facilities, a food and drink outlet, a manager's residence, offices, recreation facilities for the use of occupants and their visitors, or staff accommodation, if the use is ancillary to the use in paragraph (a).	Camping ground, caravan park, holiday cabins	Relocatable home park, tourist attraction, short-term accommodation, workforce accommodation
Transport depot Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Transport depot means the use of premises for— a. storing vehicles, or machinery, that are used for a commercial or public purpose; or b. cleaning, repairing or servicing vehicles or machinery, if the use is ancillary to the use in paragraph (a). Examples of a transport depot— using premises to store buses,	Contractor's depot, bus depot, truck yard, heavy machinery yard	Home-based business, warehouse, low impact industry, service industry

	taxis, trucks, heavy vehicles or heavy machinery		
Utility installation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Utility installation means the use of premises for— a. a service for supplying or treating water, hydraulic power or gas; or b. a sewerage, drainage or stormwater service; or c. a transport service; or d. a waste management service; or e. a maintenance depot, storage depot or other facility for a service stated in paragraphs (a) to (d).	Sewerage treatment plant, mail depot, pumping station, water treatment plant	Telecommunications tower, major electricity infrastructure, minor electricity infrastructure, substation, renewable energy facility, transport depot
Veterinary service Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Veterinary service means the use of premises for— a. the medical or surgical treatment of animals; or b. the short-term stay of animals, if the use is ancillary to the use in paragraph (a).		Animal keeping
Warehouse Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Warehouse means the use of premises for— a. storing or distributing goods, whether or not carried out in a building; or b. the wholesale of goods, if the use is ancillary to the use in paragraph (a). Examples of a warehouse— self-storage facility, storage yard	Self-storage sheds	Hardware and trade supplies, outdoor sales, showroom, shop
Wholesale nursery Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Wholesale nursery means the use of premises for— a. the wholesale of plants grown on or next to the premises; or b. selling gardening materials, if the use is ancillary to the use in paragraph (a).		Bulk landscape supplies, garden centre
Winery	Winery means the use of		Rural industry

Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	premises for— a. making wine; or b. selling wine that is made on the premises.		
Workforce accommodation Editor's note— The use term is defined in the *Planning Regulation 2017* - Regulated Requirements	Workforce accommodation— a. means the use of premises for— i. accommodation that is provided for persons who perform work as part of— A. a resource extraction project; or B. a project identified in a planning scheme as a major industry or infrastructure project; or C. a rural use; or ii. recreation and entertainment facilities for persons residing at the premises and their visitors, if the use is ancillary to the use in subparagraph (i); but b. does not include rural workers' accommodation.	Contractor's camp, construction camp, single person's quarters, temporary workers' accommodation	Relocatable home park, short-term accommodation, tourist park

SC1.1.2 Defined activity groups

1. The defined use terms listed in Table SC1.1.1.A are able to be clustered into the activity groups listed in Table SC1.1.2.A and defined in Table SC1.1.2.B.
2. An activity group listed in Table SC1.1.2.B column 1 clusters the defined use terms listed in Table SC1.1.2.B column 2.
3. An activity group is able to be referenced in Part 5.
4. The activity groups listed here are the defined activity groups for the purpose of the planning scheme.

Table SC1.1.2.A—Index of defined activity groups

Index of activity groups

Accommodation activities Active frontage uses Assembly uses Care co-located uses Centre activities Commercial character building activities where in the Low density residential zone, Medium density residential zone, High density residential zone or Character residential zone Commercial character building activities where in the Low impact industry zone or General industry A zone precinct of the Industry zone	Commercial character building activities where in the Specialised centre zone Commercial character building activities where in the Community facilities zone Community facilities Community facilities — cemetery Community facilities — community purposes Community facilities — education purposes Community facilities — emergency services	Community facilities — health care purposes Community facilities — major health care Community facilities — major sports venue Difficult to evacuate uses Essential community infrastructure Large format retail Rural activities Small-scale non-residential uses Vulnerable uses

Table SC1.1.2.B—Defined activity groups

Column 1 **Activity group**	**Column 2** **Use terms**
Accommodation activities	• caretaker's accommodation • community residence • dual occupancy • dwelling house • multiple dwelling • relocatable home park • residential care facility • retirement facility • rooming accommodation • short-term accommodation • tourist park • workforce accommodation
Active frontage uses	• caretaker's accommodation • club • community care centre • community use • dwelling unit • educational establishment • emergency services • food and drink outlet • health care service • indoor sport and recreation • office • place of worship • shop

	• veterinary service
Assembly uses	• club • community use • educational establishment • function facility • major sport, recreation and entertainment facility • nightclub entertainment facility • place of worship • shopping centre, if a district shopping centre or 10,000m^2 or larger • theatre • tourist attraction
Care co-located uses	• childcare centre, if not exceeding a gross floor area of 400m^2 • club, if not exceeding a gross floor area of 250m^2 • community care centre, if not exceeding a gross floor area of 250m^2 • community use, if not exceeding a gross floor area of 250m^2 • food and drink outlet, if not exceeding a gross floor area of 250m^2 • health care service, if not exceeding a gross floor area of 250m^2 • office, if not exceeding a gross floor area of 250m^2 • place of worship, if not exceeding a gross floor area of 400m^2 • shop, if not exceeding a gross floor area of 250m^2
Centre activities	• caretaker's accommodation • childcare centre • club • community care centre • community use • dwelling unit • educational establishment • emergency services • food and drink outlet • function facility • health care service • indoor sport and recreation • office • parking station, if bicycle parking • place of worship • sales office • service industry, if less than a gross floor area of 100m^2 • shop • shopping centre • short-term accommodation • substation • telecommunications facility, if a broadcasting station or television station • theatre • veterinary service

Commercial character building activities, if in the Low density residential zone, Low-medium density residential zone, Medium density residential zone, High density residential zone, or Character residential zone	• caretaker's accommodation • club • community care centre • community use • dwelling unit • educational establishment • food and drink outlet • health care service • office • shop • veterinary service
Commercial character building activities, if in the Low impact industry zone or General industry A zone precinct of the Industry zone	• bar • caretaker's accommodation • club • community use • dwelling unit • educational establishment • emergency services • food and drink outlet • garden centre • health care service • hotel • indoor sport and recreation • low impact industry, if not exceeding a gross floor area of 100m^2 • office • research and technology industry, if not exceeding gross floor area of 100m^2 • sales office • shop • showroom • telecommunications facility • theatre • utility installation • veterinary service
Commercial character building activities, if in the Specialised centre zone	• bar • caretaker's accommodation • childcare centre • club • community care centre • community use • dwelling unit • educational establishment • emergency services • food and drink outlet • garden centre

	• health care service • hotel • indoor sport and recreation • low impact industry, if not exceeding a gross floor area of 100m^2 • nightclub • office • research and technology industry, if not exceeding gross floor area of 100m^2 • sales office • shop • showroom • telecommunications facility • theatre • utility installation • veterinary service
Commercial character building activities, if in the Community facilities zone	• caretaker's accommodation • childcare centre • club • community care centre • community use • dwelling unit • educational establishment • emergency services • food and drink outlet • health care service • indoor sport and recreation • office • utility installation
Community facilities	• cemetery • club • childcare centre • community care centre • community residence • community use • crematorium • educational establishment • funeral parlour • emergency services • health care service • hospital • major sport, recreation and entertainment facility • place of worship
Community facilities — cemetery	• cemetery • crematorium

	• funeral parlour • place of worship
Community facilities — community purposes	• club • childcare centre • community care centre • community use • place of worship
Community facilities — education purposes	• childcare centre • community care centre • community use • educational establishment • place of worship
Community facilities — emergency services	• emergency services • health care service
Community facilities — health care purposes	• childcare centre • community care centre • health care service • hospital
Community facilities — major health care	• childcare centre • community care centre • emergency services • health care service • hospital • place of worship
Community facilities — major sports venue	• club • childcare centre • community use • health care service • major sport, recreation and entertainment facility
Difficult to evacuate uses	• childcare centre • community residence • detention facility • educational establishment • hospital • hotel, if including short term accommodation • nature-based tourism • residential care facility • resort complex • retirement facility • short-term accommodation • tourist park

Essential community infrastructure	• air services • community use, if for the storage of records or items of cultural or historic significance including facilities for the storage of public records under the *Public Records Act 2002* • emergency services • health care service, if supporting a hospital • hospital • major electricity infrastructure • renewable energy facility • substation, if supporting other essential community infrastructure • telecommunications facility • transport depot, if required for disaster response • utility installation • warehouse, if supporting emergency services or disaster response activities
Large format retail	• agricultural supplies store • bulk landscape supplies • car wash • food and drink outlet (where ancillary to and integrated with any other uses in this activity group) • garden centre • hardware and trade supplies • outdoor sales • service industry • shop (with a minimum gross floor area of 1,000m^2 and other than a department store, discount variety store, supermarket or corner store) • showroom
Rural activities	• agricultural supplies store • animal husbandry • aquaculture • bulk landscape supplies • cropping • garden centre • intensive animal industry • intensive horticulture • market • permanent plantation • roadside stall • rural industry • veterinary service • wholesale nursery • winery
Small-scale non-residential uses	• caretaker's accommodation • community care centre

	• community use • dwelling unit • health care service • office • shop • veterinary service
Vulnerable uses	• childcare centre • community residence • educational establishment • hospital • residential care facility

SC1.1.3 Industry thresholds

The industry thresholds listed in Table SC1.1.3.A are to be used in conjunction with the defined use terms listed in Table SC1.1.1.A.

Table SC1.1.3.A—Industry thresholds

Use term	Additional examples include
Low impact industry	a. Light engineering works, including assembling, fabricating or repairing metal or sheet metal products or components, not including boiler making, metal finishing, spray painting or foundry activities. b. Assembling, fabricating or repairing wood products, including furniture, kitchens, shop fitting, cabinet making, joinery if not involving: i. outdoor plant or machinery including dust extraction plant ii. spray painting, spraying glue or spraying surface coatings c. Storage, use or handling of dangerous goods/hazardous chemicals in quantities that are less than or equal to the quantities in column 3 of Table SC1.1.3.B d. Dismantling automotive or mechanical equipment, if not including debonding brake or clutch components e. Fitting and turning workshop f. Repairing or servicing tools, garden equipment, lawn mowers or outboard engines g. Repairing or servicing motor vehicles including mechanical components, radiators, electrical components, wheel alignments, exhausts, tyres, suspension, bull bars, roof racks or air conditioning, if not including spray painting h. Assembling or manufacturing plastic products, including moulding and extruding and not involving casting, liquid resins or fibre-glassing i. Clothing or footwear manufacturing or repair i. Assembling or repairing domestic furniture or fittings if not involving: ii. Outdoor plant or machinery including dust extraction plant or compressors; j. Not involving spraying paint, glue or surface coatings k. Upholstering

	l. Printing, with a gross floor area less than 1,000m^2 Note—Spray painting does not include the sole use of aerosol cans or air brushing for the purpose of this industry threshold table.
Medium impact industry	Medium impact industry — A a. Abrasive blasting workshop, if using less than 1 tonne of abrasive blasting material per annum b. Anodising workshop, if the tank area production capacity is less than 100m^2 c. Glass product manufacturing workshop, if producing less than 100 tonnes of product per annum d. Plaster manufacturing, if processing less than 1,000 tonnes of gypsum per annum e. Plastic or plastic product manufacturing involving PET, PETE, polypropylene or polystyrene, if not involving polyvinylchloride, where producing less than 1,000 tonnes of product per annum f. Powder coating, if using less than 10 tonnes of coating per annum g. Contractors depot or storage yard
	Medium impact industry — B a. Abrasive blasting facility, if using less than 10 tonnes of abrasive material per annum b. Anodising or electroplating workshop, if the tank area is less than 400m^2 c. Battery recycling or reprocessing workshop d. Boat repairing or maintaining works e. Boiler making or engineering works other than metal foundry or casting, if producing less than 10,000 tonnes of metal product per annum f. Clay or ceramic product, including bricks, tiles, pipes and pottery goods manufacturing, if producing less than 200 tonnes per annum g. Enamelling workshop, if using less than 15,000 litres of enamel per annum h. Fibreglass, foam plastic, composite plastic or rigid fibre-reinforced plastic manufacturing or product manufacturing works other than producing fibreglass boats, tanks and swimming pools, if producing less than 5 tonnes per annum i. Food, beverages or pet food processing, smoking, drying, curing, milling, bottling or canning works, if producing less than 200 tonnes per annum j. Fuel burning where not a utility installation, with an installed capacity of 0.1 MW or less, if: i. operating more than 100 hours per year; ii. not involving coal combustion k. Galvanising works, if using less than 100 tonnes of zinc per annum l. Glass fibre manufacturing works, if less than 200 tonnes per annum m. Glass or glass product manufacturing works, if producing less than 250 tonnes per annum n. Storage, use or handling of dangerous goods/hazardous chemicals in quantities that exceed the threshold quantities in column 3 of Table SC1.1.3.B but are less than or equal to 10% of the threshold quantities listed in Schedule 15 of the *Work Health and Safety Regulation* o. Medium density fibreboard, chipboard, particle board, plywood, laminated board or wood veneer product manufacturing works, if producing less than 250

	tonnes per annum p. Plastic manufacturing PET, PETE, polypropylene and polystyrene plastic or plastic products, if less than 10,000 tonnes per annum q. Manufacturing substrate for mushroom growing r. Metal foundry, if producing: i. less than 10 tonnes of ferrous metal castings per annum; or ii. less than 50 tonnes of non-ferrous metal castings per annum s. Plaster manufacturing, if processing less than 5,000 tonnes of gypsum per annum t. Printing workshop producing advertising material, magazines, newspapers, packaging or stationery u. Powder coating workshop, if using less than 500 tonnes of coating per annum v. Reconditioning metal or plastic drums w. Sawmilling, wood chipping and kiln drying timber and logs, if producing less than 500 tonnes per annum x. Scrap metal yard (if not including a fragmentiser) or dismantling automotive or mechanical equipment including debonding brake and clutch components y. Spray painting workshop including spray painting vehicles, heavy machinery, signs, equipment or boats, if using: i. less than 20,000 litres of paint product per annum; ii. spray equipment other than the sole use of aerosol cans or air brush. z. Tyre recycling or reprocessing, including retreading workshop aa. Vegetable oil or oilseed processing works, with a design production capacity of less than 1,000 tonnes per annum bb. Wooden product manufacturing, including cabinet making, joinery or making timber frames or roof trusses involving: i. outdoor plant or machinery ii. spraying paint, glue or surface coatings
High impact industry	a. Abattoir, if not involving rendering b. Abrasive blasting facility, if using 10 tonnes or greater of abrasive material per annum c. Anodising or electroplating workshop, if the tank area is 400m^2 or greater d. Battery manufacturing e. Boiler making or engineering works, if producing 10,000 tonnes or greater of metal product per annum f. Clay or ceramic product manufacturing, if including bricks, tiles, pipes and pottery goods, producing 200 tonnes or more per annum g. Concrete batching plant or works for producing concrete products h. Enamelling workshop, if using 15,000 litres or more of enamel per annum i. Fibreglass, foam plastic, composite plastic or rigid fibre-reinforced plastic manufacturing or product manufacturing works including producing fibreglass boats, tanks and swimming pools, if producing 5 tonnes or more per annum j. Food, beverages or pet food processing, smoking, drying, curing, milling, bottling or canning works, if producing 200 tonnes or more per annum k. Fuel burning where not a utility installation with an installed capacity of more than 0.1 MW, if: i. less than 10 MW;

	ii. not involving coal combustion l. Galvanising works, if using 100 tonnes or greater of zinc per annum m. Glass fibre manufacture, if producing 200 tonnes or more per annum n. Glass or glass product manufacturing, if producing 250 tonnes or more per annum o. Manufacturing tyres, asbestos products, asphalt, cement, mineral wool or ceramic fibre p. Storage, use or handling of dangerous goods/hazardous chemicals in quantities that exceed 10%, but are less than or equal to, the threshold quantities in Schedule 15 of the *Work Health and Safety Regulation* and not including a major hazard facility under the *Work Health and Safety Regulation* q. Medium density fibreboard, chipboard, particle board, plywood, laminated board or wood veneer product manufacturing works, if producing 250 tonnes or more per annum r. Metal foundry, if producing: i. 10 tonnes or more of ferrous metal castings per annum; or ii. 50 tonnes or more of non-ferrous metal castings per annum s. Plaster manufacturing, if processing 5,000 tonnes or more of gypsum per annum t. Plastic manufacturing works for PET, PETE, polypropylene and polystyrene plastic or plastic products, if producing 10,000 tonnes or greater per annum u. Powder coating workshop, if using 500 tonnes or more of coating per annum v. Recycling chemicals, oils or solvents w. Recycling, storing or reprocessing regulated waste, where not a Utility installation and if not involving a waste incinerator x. Sawmilling, wood chipping or kiln drying timber and logs, if producing 500 tonnes or more per annum y. Scrap metal yard including a fragmentiser z. Spray painting workshop including spray painting vehicles, heavy machinery, equipment, signs or boats, if using 20,000 litres or more of paint per annum aa. Soil conditioners manufacturing by receiving, blending, storing, processing, drying or composting organic waste, including animal manures, sewage, septic sludges and domestic waste bb. Treating timber for preservation using chemicals including copper, chromium, arsenic, borax or creosote cc. Vegetable oil or oilseed processing in works with a design production capacity of 1,000 tonnes or more per annum dd. Waste disposal facility, where not a Utility installation and if not involving a waste incinerator ee. Wooden product manufacturing including cabinet making, joinery or making timber frames or roof trusses, if producing 500 tonnes or more per annum
Special industry	a. Distilling alcohol in works, if producing 2,500 litres or more per annum b. Fuel burning where not a Utility installation, with an installed capacity of 10 MW or greater or burning coal or coal products c. Storage, use or handling of dangerous goods/hazardous chemicals in quantities that exceed the threshold quantities in Schedule 15 of the *Work Health and Safety Regulation*, or a major hazard facility under the *Work Health and Safety Regulation*

	d. Manufacturing fertilisers involving ammonia e. Metal refining or smelting f. Oil refining or processing facility g. Polyvinyl chloride plastic manufacturing works h. Producing, refining or processing gas or fuel gas i. Producing, quenching, cutting, crushing or grading coke j. Pulp or paper manufacturing k. Rendering plant l. Sugar milling or refining m. Tannery or works for curing animal skins, hides or finishing leather n. Textile manufacturing including carpet manufacturing, wool scouring or carbonising, cotton milling or textile bleaching, dying or finishing o. Tobacco processing p. Waste incinerator

Table SC1.1.3.B—Maximum quantities for storage of dangerous goods/hazardous chemicals

Column 1 Name	**Column 2 Class**	**Column 3 Quantity (tonnes)**
Explosives	Class 1	0.025
Flammable gases	Class 2.1	2
Non-flammable/Non-toxic gases	Class 2.2	100
Oxidising gases	Class 2.2 (Sub-risk 5)	100
Poisonous gases	Class 2.3	0.1
Flammable liquids	Class 3 PGI	20
	Class 3 PGII	50
	Class 3 PGIII	100
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	100
Combustible liquids (as defined by AS1940 The storage and handling of flammable and combustible liquids)	C1/C2	500
Flammable liquids/ Combustible liquids/ Flammable gases - Exemption for service station	An aggregate quantity of Class 3 flammable liquid and combustible liquids stored, or intended to be stored, below ground.	385,000L
	Class 2.1 LPG either underground or aboveground.	16m^3

Flammable solids	Class 4.1 PGI	0.25
	Class 4.1 PGII	2
	Class 4.1 PGIII	5
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	5
Substances liable to spontaneous combustion	Class 4.2 PGI	0.125
	Class 4.2 PGII	1
	Class 4.2 PGIII	2.5
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	2.5
Substances which in contact with water emit flammable gases	Class 4.3 PGI	0.25
	Class 4.3 PGII	2
	Class 4.3 PGIII	5
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	5
Oxidising agents	Class 5.1 PGI	1.25
	Class 5.1 PGII	10
	Class 5.1 PGIII	25
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	25
Organic peroxides	Class 5.2 PGI	0.125
	Class 5.2 PGII	1
	Class 5.2 PGIII	2.5
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	2.5
Poisonous (toxic) substances	Class 6.1 PGI	0.25
	Class 6.1 PGII	2
	Class 6.1 PGIII	5
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	5

Infectious substances	Class 6.2	0.1
Corrosive substances	Class 8 PGI	1.25
	Class 8 PGII	10
	Class 8 PGIII	25
	Any mix of chemicals from any packing group where none of the items exceeds the threshold quantity on their own.	25
Miscellaneous named substances	Class 9	10
	Acetaldehyde ammonia (UN1841) PGIII	5
	Ammonium nitrate fertilisers (UN2071) PGIII	1
	Blue/brown asbestos (UN2212) PGII & white asbestos (UN2590) PGIII	0.01
	Polychlorinated biphenyls (UN2315) PGII	0.01
	Polyhalogenated biphenyls or polyhalogenated terphenyls, liquid (UN3125) PGII, solid (UN3125) PGII	0.01
	Polymeric beads, expandable, (UN2211) PGIII	2
	Zinc dithionite (zinc hydrosulfite) (UN1931) PGIII	0.1
Goods too dangerous to be transported	As listed in Appendix A of the Australian code for the transport of dangerous goods by road and rail	0.2

Note—The dangerous goods in this table are as defined in the Australian code for the transport of dangerous goods by road and rail.

SC1.2 Administrative terms

SC1.2.1 Preliminary

1. The administrative terms and definitions listed in Table SC1.2.2.A and Table SC1.2.3.A and defined in Table SC1.2.2.B and Table 1.2.3.B assist with the interpretation of the planning scheme but do not have a meaning in relation to a use term.
2. An administrative term listed in Table 1.2.2.B and Table 1.2.3.B column 1 has the meaning set out beside that administrative term in column 2 under the heading.
3. The administrative terms and definitions listed here are the terms and definitions for the purpose of the planning scheme.

SC1.2.2 Administrative terms

Note—As prescribed by section 8 of the Regulation, the definitions for the following administrative terms are located in schedule 4 column 2 of the Regulation.

Table SC1.2.2.A—Index of Administrative terms

Index of administrative terms		
Adjoining premises Advertising device Affordable housing Average width Base date Basement Boundary clearance Building height Demand unit Development footprint	Domestic outbuilding Dwelling Gross floor area Ground level Household Minor building work Minor electricity infrastructure Net developable area Non-resident worker	Outermost projection Planning assumption Plot ratio Projection area(s) Secondary Dwelling Service catchment Setback Site Site cover Storey Temporary use Ultimate development Water Netserv plan

Table SC1.2.2.B—Administrative terms and definitions

Column 1 **Term**	**Column 2** **Definition**
Adjoining premises	Adjoining premises means premises that share a common boundary, including premises that meet at a single point on a common boundary.
Advertising device	Advertising device— a. means a permanent sign, structure or other device used, or intended to be used, for advertising; and b. includes a structure, or part of a building, the primary purpose of which is to support the sign, structure or

	device.
Affordable housing	Affordable housing means housing that is appropriate to the needs of households with low to moderate incomes, if the members of the households will spend no more than 30% of gross income on housing costs.
Average width	Average width, of a lot, means the distance, measured in metres, between the midpoint on each side boundary of the lot.
Base date	Base date means the date from which the local government has estimated future infrastructure demand and costs for the local government area.
Basement	Basement means a space— a. between a floor level in a building and the floor level that is immediately below it; and b. no part of which is more than 1m above ground level.
Boundary clearance	Boundary clearance means the distance between a building or structure on premises and the boundary of the premises, measured from the part of the building or structure that is closest to the boundary, other than a part that is— a. an architectural or ornamental attachment; or b. a rainwater fitting. Examples — • If the fascia of a building is the part of the building that is closest to the boundary, the boundary clearance is the distance between the outside of the fascia and the boundary. • If a point on the roof of a building is the part of the building that is closest to the boundary, the boundary clearance is the distance between that point on the roof and the boundary.
Building height	Building height, of a building, means— a. the vertical distance, measured in metres, between the ground level of the building and the highest point on the roof of the building, other than a point that is part of an aerial, chimney, flagpole or load-bearing antenna; or b. the number of storeys in the building above ground level.
Demand unit	Demand unit means a unit of measurement for measuring the level of demand for infrastructure.
Development footprint	Development footprint, for development, means a part of

	the premises that the development relates to, including, for example, any part of the premises that, after the development is carried out, will be covered by— a. buildings or structures, measured to their outermost projection; or b. landscaping or open space; or c. facilities relating to the development; or d. on-site stormwater drainage or wastewater treatment; or e. a car park, road, access track or area used for vehicle movement; or f. another area of disturbance.
Domestic outbuilding	Domestic outbuilding means a non-habitable class 10a building that is— a. a shed, garage or carport; and b. ancillary to a residential use carried out on the premises where the building is.
Dwelling	Dwelling means all or part of a building that— a. is used, or capable of being used, as a self-contained residence; and b. contains— i. food preparation facilities; and ii. a bath or shower; and iii. a toilet; and iv. a wash basin; and v. facilities for washing clothes.
Gross floor area	Gross floor area, for a building, means the total floor area of all storeys of the building, measured from the outside of the external walls and the centre of any common walls of the building, other than areas used for— a. building services, plant or equipment; or b. access between levels; or c. a ground floor public lobby; or d. a mall; or e. parking, loading or manoeuvring vehicles; or f. unenclosed private balconies, whether roofed or not.
Ground level	Ground level means— a. the level of the natural ground; or b. if the level of the natural ground has changed, the level lawfully changed. Editor's note—Section 1.7.5 provides that for the purpose of the definition of ground level in Schedule 1, the level of the natural ground is deemed to have been lawfully changed if the level of the natural ground level is the prescribed level.

Household	Household means 1 or more individuals who live together in a dwelling.
Minor building work	Minor building work means building work that increases the gross floor area of a building by no more than the lesser of the following— a. 50m^2; b. an area equal to 5% of the gross floor area of the building.
Minor electricity infrastructure	Minor electricity infrastructure means development for a supply network or for private electricity works that form an extension of, or provide service connections to, properties from the network, if the network operates at standard voltages up to and including 66kV, other than development for— a. a new zone substation or bulk supply substation; or b. the augmentations of a zone substation or bulk supply substation that significantly increases the input or output standard voltage.
Net developable area	Net developable area, for premises, means the area of the premises that— a. is able to be developed; and b. is not subject to a development constraint, including for example, a constraint relating to acid sulfate soils, flooding or slope. Note—For the purpose of a local government infrastructure plan, net developable area is usually measured in hectares, net developable hectares (net dev ha).
Non-resident worker	Non-resident worker means a person who— a. performs work as part of— i. a resource extraction project; or ii. a project identified in a planning scheme as a major industry or infrastructure project; or iii. a rural use; and b. lives, for extended periods, in the locality of the project, but has a permanent residence elsewhere. Example of a non-resident worker— a person engaged in fly-in/fly-out, or drive-in/drive-out, working arrangements.
Outermost projection	Outermost projection, of a building or structure, means the outermost part of the building or structure, other than a part that is— a. a retractable blind; or b. a fixed screen; or c. a rainwater fitting; or d. an ornamental attachment.

Planning assumption	Planning assumption means an assumption about the type, scale, location and timing of future growth in the local government area.
Plot ratio	Plot ratio means the ratio of the gross floor area of a building on a site to the area of the site.
Projection area	Projection area means a part of the local government area for which the local government has carried out demand growth projection.
Secondary dwelling	Secondary dwelling means a dwelling on a lot that is used in conjunction with, but subordinate to, another dwelling on the lot, whether or not the dwelling is— a. attached to the other dwelling; or b. occupied by individuals who are related to, or associated with, the household of the other dwelling.
Service catchment	Service catchment means an area serviced by an infrastructure network. Note—for example: • stormwater network service catchments can be delineated to align with watershed boundaries; • open space network service catchments can be determined using local government accessibility standards; • water network service catchments can be established as the area serviced by a particular reservoir.
Setback	Setback, for a building or structure, means the shortest distance, measured horizontally, between the outermost projection of the building or structure to the vertical projection of the boundary of the lot where the building or structure is. Editor's note—Section 1.7.6 provides that for the purpose of determining compliance with assessment benchmarks for setback, development is deemed to comply with the assessment benchmarks if the development exceeds the assessment benchmarks only by reason of the inclusion of an outermost projection which is part of a building or structure that is: • an eave of a roof; or • a sunhood or the like attached to the wall of a building or structure to provide shade or shelter to the wall.
Site	Site, of development, means the land that the development is to be carried out on. Examples— • If development is to be carried out on part of a lot, the

	site of the development is that part of the lot. • If development is to be carried out on part of 1 lot and part of an adjoining lot, the site of the development is both of those parts.
Site cover	Site cover, of development, means the portion of the site, expressed as a percentage, that will be covered by a building or structure, measured to its outermost projection, after the development is carried out, other than a building or structure, or part of a building or structure, that is— a. in a landscaped or open space area, including, for example, a gazebo or shade structure; or b. a basement that is completely below ground level and used for car parking; or c. the eaves of a building; or d. a sun shade.
Storey	a. means a space within a building between 2 floor levels, or a floor level and a ceiling or roof, other than— i. a space containing only a lift shaft, stairway or meter room; or ii. a space containing only a bathroom, shower room, laundry, toilet or other sanitary compartment; or iii. a space containing only a combination of the things stated in subparagraph (i) or (ii); or iv. a basement with a ceiling that is not more than 1m above ground level; and b. includes— i. a mezzanine; and ii. a roofed structure that is on, or part of, a rooftop, if the structure does not only accommodate building plant and equipment.
Temporary use	Temporary use means a use that— a. is carried out on a non-permanent basis; and b. does not involve the construction of, or significant changes to, permanent buildings or structures. Note—Provisions for temporary use timeframes for defined uses may be provided within section 1.7 Local government administrative matters.
Ultimate development	The realistic extent of development anticipated to be achieved when a site (or projection area or infrastructure service catchment) is fully developed.
Water Netserv plan	Water Netserv plan means a plan adopted by an SEQ service provider, as defined under the *South-East*

	Queensland Water (Distribution and Retail Restructuring) Act 2009, under section 99BJ of that Act.

SC1.2.3 Brisbane City Council administrative definitions

Table SC1.2.3.A—Index of Brisbane City Council administrative definitions

Index of Brisbane City Council administrative definitions		
Access way	Edge effects	Prescribed level
Acid sulfate soil	Environmentally relevant activity	Prescribed secondary code
Acoustic fence	Erosion prone area	Primary cycle route
Acoustically screened	Existing trunk infrastructure	Primary street frontage
Act	Filling or excavation	Priority infrastructure area
Active frontage-primary	Future Suburban Living Areas	Public realm
Active frontage-secondary	Future trunk infrastructure	Railway station
Alley	Greenspace and Rural Neighbourhoods	Rear lot
Affordable living	Greenspace system	Regional ecosystem
Amenity	Ground storey	Registered Professional Engineer Queensland
Arcade	Growth Node	Regulation
Areas of strategic biodiversity value	Habitable room	Remnant vegetation
Arterial road	Hazardous chemical	Replacement tree area
Assumed future urban development	Hazardous material	Residential
Average recurrence interval	Highest astronomical tide	Restoration
Aviation facility	Iconic vista site	Rooftop garden
Building envelope	Impact site	Run-off hectare
Building envelope plan	Internal building work	Rural Neighbourhoods
Building footprint	Investigation Area	Secondary cycle route
Building height transition	Key civic space	Secondary street frontage
Bushfire attack level	Landmark site	Selected Transport Corridors
Bushfire management footprint plan	Landscape concept plan	Sensitive use
Busway station	Local cycle route	Sensitive zone
City centre	Local road	SEQ Regional Plan
Combustible liquid	Long term infrastructure	Significant corner site
Commercial character building	Long term infrastructure plans	Significant landscape tree
Communal open space	Major Centre	Significant residual impact
Complete communities	Major Industry Area	Sleeping area
Conservation	Major road	Small lot
Corner land dedication	Mall	Social housing
Corner lot	Matters of local environmental significance	Special Centre
Corridor Hub	Matters of state environmental significance	Suburban Living Areas
Critical Assets	Mean high water spring tide	Suburban road
Dangerous goods	Minor road	Tree protection zone
Defined flood event (DFE)	Motorway	Trunk infrastructure
Defined flood level (DFL)		Unacceptable risk
		Walking distance

Desired standards of service Detailed landscape plan Development footprint plan Distributor-retailer District road Ecological features Ecological processes	Natural habitat cover Neighbourhood road Non-juvenile koala habitat tree Non-Residential Offset site On-site mitigation measure Outdoor lighting Park concept plan Planning horizon Plaza Prescribed accepted development	

Table SC1.2.3.B—Brisbane City Council administrative definitions

Column 1 **Term**	**Column 2** **Definition**
Access way	The part of a lot used to provide access to a road for a lot that does not otherwise front the road.
Acid sulfate soil	See the *State Planning Policy*, Glossary.
Acoustic fence	Solid, gap free fence with minimum panel surface density of 12.5kg/m^2.
Acoustically screened	The source of noise is completely screened from view of habitable rooms (including balconies, patios, decks and verandahs) of an adjoining sensitive use by solid, gap free material and construction e.g. acoustic fence, building, or enclosure.
Act	*Planning Act 2016*.
Active frontage — primary	May be specified in a neighbourhood plan or be identified in a design statement where no neighbourhood plan applies or no requirements are specified. These streets are the commercial and community heart of neighbourhoods. They house highly active non-residential uses that create the greatest degree of pedestrian activity and interaction and which are mostly accommodated in small individual tenancies with narrow building frontages, such as shops, restaurants and cafes.
Active frontage — secondary	May be specified in a neighbourhood plan or be identified in a design statement where no neighbourhood plan applies or no requirements are specified. These streets support and compliment active frontage-primary streets. They house active, non-residential uses that create pedestrian activity and interaction and which are mostly accommodated in larger tenancies with wider building

	frontages, such as offices, community uses, medical centres, fitness facilities and mini-major shops.
Affordable living	See the *State Planning Policy*, Glossary.
Alley	Privately owned shared zone, providing access for service vehicles and pedestrians.
Amenity	The qualities of a location in regard to noise, vibration, dust, odour, air quality, lighting, daylight, glare, breezes and shade, freedom from hazard or risk of threats to health and well-being of occupants, and the uninterrupted ability to use and enjoy the land for the purpose it was designed, that may be affected by the level, time and duration of activities on nearby sites or the impacts of natural hazards, including spatial and temporal impacts.
Arcade	A privately owned pedestrian pathway that is part of the pedestrian network and is publicly accessible during hours of operation. An arcade can be covered or uncovered.
Areas of strategic biodiversity value	Areas which may currently be cleared or support degraded habitat, but which could form part of an ecological corridor or provide habitat for native fauna and flora if restored. Areas of strategic biodiversity value include land in the High ecological significance strategic sub-category and the General ecological significance strategic sub-category.
Arterial road	A road identified as an arterial road on the Road hierarchy overlay map.
Assumed future urban development	The future urban development which is assumed to be serviced at the desired standards of service in the most efficient manner by the plans for future trunk infrastructure up to the planning horizon identified in the Local government infrastructure plan.
Average recurrence interval	The average, or expected, value of the periods between exceedances of a given rainfall total accumulated over a given duration. It is implicit in this definition that the periods between exceedances are generally random. Note—For example, a 100 year ARI indicates an average of 100 years between exceedance of a given storm magnitude.
Aviation facility	See the State Planning Policy, Glossary.
Building envelope	The three-dimensional extent of where a building and associated structure may be built on a site after consideration of limits set on height, setback and other

	similar measures.
Building envelope plan	A plan that shows the building envelope for a particular development.
Building footprint	The two-dimensional extent of built development, including balconies, covered private outdoor living areas and enclosed spaces but excluding the part of a building or structure that is: a. an eave or a roof; or b. a sunhood or the like attached to the wall of a building or structure to provide shade or shelter to the wall.
Building height transition	An area where a height transition is required at the interface between higher density and lower density zones, as required by a development code or a local neighbourhood plan.
Bushfire attack level	See AS 3959-2009 Construction of buildings in bushfire prone areas.
Bushfire management footprint plan	A plan that defines the area within the development footprint that is used to reduce and manage risk from bushfire hazard, and which excludes the area of any development footprint plan. This area is not used for any purpose that results in an unacceptable risk to people or property.
Busway station	A public passenger transport facility or future public passenger transport facility identified on the State Planning Policy Interactive Mapping System.
City Centre	See SC2.1 Strategic framework maps.
Combustible liquid	Combustible liquid as defined in AS1940-2004 The storage and handling of flammable and combustible liquids.
Commercial character building	A building on a site identified on the Commercial character building overlay map.
Communal open space	Recreation space for the use of all building occupants.
Complete communities	See the *State Planning Policy*, Glossary.
Conservation	The processes and actions of looking after a place so as to retain its natural significance, including protection and maintenance.
Corner land dedication	The corner of a site for dedication to the Council identified on the Streetscape hierarchy overlay map.
Corner lot	A lot bounded by two or more roads where they intersect or join.

Corridor hub	See SC2.1 Strategic framework maps.
Critical assets	The infrastructure and facilities listed below, that if destroyed, degraded or rendered unavailable for an extended period would significantly impact on the economic, social or environmental wellbeing of the city. • Archerfield Airport • Brisbane Airport • Central Business District, namely those elements of the CBD and environs that comprise government facilities, disaster management control centres and the transport network hub and major health care facilities, being the Mater, Princess Alexandra and Royal Brisbane Hospitals • Kedron Emergency Management Headquarters • Port of Brisbane • Acacia Ridge Intermodal Freight Terminal
Dangerous goods	Dangerous goods as defined by the Australian code for the transport of dangerous goods by road and rail.
Defined flood event (DFE)	The flood event adopted by Brisbane City Council for the management of development in a particular locality. The DFE varies for different classes of development and flood source. Note—Most commonly, the Defined flood event is the 1% Annual Exceedance Probability (AEP) flood for creek/waterway, 2% AEP for overland flow flooding sources, or the 1% AEP for Brisbane River flooding. The DFE for a particular locality is determined in accordance with the Flood overlay code.
Defined flood level (DFL)	The DFL for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m^3/s.
Desired standards of service	See *Minister's Guidelines and Rules* under the *Planning Act 2016*.
Detailed landscape plan	A plan showing detailed landscape treatment including excavation, location of site services and proposed levels, drainage, construction detail and detailed planting schedule.
Development footprint plan	A plan that defines the area within the development footprint that may be used for development proposed on a site, and which excludes the area of any bushfire management footprint plan. Note—An approved building location envelope, building location plan or development envelope area has the same meaning.

Distributor—retailer	See *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*.
District road	A road identified as a district road on the Road hierarchy overlay map.
Ecological features	Significant vegetation communities, significant flora species, significant fauna species and elements which provide important habitat value, such as hollow-bearing trees, rock outcrops, termitaria, vine thickets, roost trees, stag trees and coarse woody debris.
Ecological processes	Interactions between components of the natural environment essential to the long persistence and resilience of ecological features, such as soil formation and stabilisation; water and nutrient cycling; pollination and seed dispersal; organism dispersal, recruitment and succession and natural disturbances (e.g. fire, inundation).
Edge effects	Adverse effects on ecological features or ecological processes caused by incompatible adjacent land uses/activities, such as invasive garden weeds, dogs and cats preying on native wildlife, stormwater run-off, rubbish dumping, light and noise intrusion and vandalism.
Environmentally relevant activity	See *Environmental Protection Act 1994*.
Erosion prone area	See *Coastal Protection and Management Act 1995*.
Existing trunk infrastructure	The trunk infrastructure existing as at the base date.
Filling or excavation	Removal or importation of material to, from or within a lot that will change the ground level of the land.
Future Suburban Living Area	See SFM-002 Brisbane CityShape 2031 Land Use Strategic Framework Map.
Future trunk infrastructure	The trunk infrastructure to be provided from the base date to the planning horizon.
Greenspace and Rural Neighbourhoods	See SC2.1 Strategic framework maps.
Greenspace System	See SFM-004 Brisbane Greenspace System Strategic Framework Map.
Ground storey	The storey closest to ground level, being the storey where the distance between ground level and the ceiling, measured at the middle of the face of the front wall of the building, is greater than the distance between the ground level and the floor.
Growth Node	See SFM-003 Brisbane Selected Transport Corridors and

	Growth Nodes Strategic Framework Map.
Habitable room	See Building Code of Australia (Volume 1).
Hazardous chemical	A hazardous chemical identified in the *Work Health and Safety Regulation 2011*.
Hazardous material	A substance with potential to cause harm to persons, property or the environment because of 1 or more of the following— • the chemical properties of the substance; • the physical properties of the substance; • the biological properties of the substance. Without limiting the first paragraph, all dangerous goods, combustible liquids and hazardous chemicals are hazardous materials.
Highest astronomical tide	See Queensland Urban Drainage Manual (Volume 1, Second Edition 2007). Note—Guidance and tidal plane levels are provided through Maritime Safety Queensland.
Iconic vista site	An iconic vista site is a site identified in the Iconic vista site sub-category on the Key civic space and iconic vista overlay including a view (or views) within a spatially defined view corridor that encompasses elements, or a relationship of elements, that particularly symbolise the scenic and/or cultural values of the city.
Impact site	The site where a significant residual impact occurs and for which an environmental offset is to be provided for at the offset site.
Internal building work	Building work carried out within the external walls or roof of the following spaces of an existing building: a. an existing storey; or b. an existing basement; or c. existing enclosed gross floor area; or d. a fully enclosed roof or ceiling space; or e. any other existing space that is occupied or used including a lift shaft, stairway, meter room, bathroom, shower room, laundry, water closet or other sanitary compartment where these spaces are not a part of a storey or basement. Note—Building work is not internal building work where it: • results in changes to the exterior of the building; or • involves any work (including enclosing an underfloor space or undercroft; or • results in the creation of new floor space, other than for a dwelling house; or

	• results in the use of spaces that would constitute a material change of use for which assessment is required against the planning scheme; or • is building work for a dwelling house which would cause the use or building work to conflict with the self-assessable provisions in the Dwelling house code or Dwelling house (small lot) code, unless in accordance with a development approval in effect; or • is building work for a place in the Local heritage place sub-category or the State heritage place sub-category of the Heritage overlay.
Investigation Area	See SFM-002 Brisbane CityShape 2031 Land Use Strategic Framework Map.
Key civic space	A key civic space is a space, identified in the Key civic space sub-category on the Key civic space and iconic vista overlay and includes the airspace extending above the key civic space.
Landmark site	A site identified in a neighbourhood plan to accommodate buildings or developments that attain citywide prominence through a combination of notable architectural excellence, siting and location.
Landscape concept plan	A drawing or drawings that shows the extent, function and character of areas to be landscaped, any proposed earthworks and an indicative planting palette.
Local cycle route	A cycle link from an individual property or destination to a primary or secondary cycle route network.
Local road	A road identified as a local road on the Road hierarchy overlay map.
Long term infrastructure	Development infrastructure identified in the Long term infrastructure plans that is required to protect the safety or efficiency of the infrastructure network of which the non-trunk infrastructure is a component, in order to service at the desired standards of service in the most efficient manner, development that is not assumed future urban development.
Long term infrastructure plans	The plans for long term infrastructure identified in the following: a. the Road hierarchy overlay and Other plans long term infrastructure plan (corridor plan) for the road network; b. the Bicycle network overlay, for the bicycle network; c. the Community purposes network overlay and Other plans long term infrastructure plan, for the parks

	network and land for the community facilities network; d. the Stormwater code and Other plans long term infrastructure plan, for the stormwater network.
Major Centre	See SC2.1 Strategic framework maps.
Major Industry Area	See SC2.1 Strategic framework maps.
Major road	A road that is an arterial road, suburban road or district road.
Mall	The Queen Street, Brunswick Street and Chinatown Malls.
Matters of local environmental significance (MLES)	The High ecological significance sub-category, High ecological significance strategic sub-category, General ecological significance sub-category and the General ecological significance strategic sub-category on the Biodiversity areas overlay map denote the spatial extent of matters of local environmental significance (MLES) for the purposes of the *Environmental Offsets Act 2014*.
Matters of state environmental significance (MSES)	See the State Planning Policy, Glossary.
Mean high water spring tide	The highest level that spring tides reach on the average over a period of time.
Minor road	A road that is a neighbourhood road or local road.
Motorway	A road identified as a motorway on the Road hierarchy overlay map.
Natural habitat cover	Bushlands and corridors of native vegetation, including areas for habitat restoration that provide functioning habitat for native plants and animals and support the movement of wildlife across the city.
Neighbourhood road	A road identified as a neighbourhood road on the Road hierarchy overlay map.
Non-juvenile koala habitat tree	A koala habitat tree that has a height of more than four metres or a trunk with a circumference of more than 31.5 centimetres at 1.3 metres above the ground.
Non-residential	Any combination of uses not listed as residential. Note—Only if used in relation to describing the proportion or component of development allocated for residential and non-residential use.
Offset site	The location where an environmental offset is established.
On-site mitigation measure	See *Environmental Offsets Act 2014*.
Outdoor lighting	Any form of permanently installed lighting system whether

	internal or external which emits light that may have an impact beyond the site.
Park concept plan	A plan that shows the conceptual layout of a proposed park.
Planning horizon	For the Local government infrastructure plan means the year up to which a trunk infrastructure network has been planned.
Plaza	A privately owned open space that is publicly accessible during hours of operation.
Prescribed accepted development	See section 5.3.4.
Prescribed level	The level of the surface of the land: a. existing at the time the original estate was subdivided and roads created through the estate as determined by a registered surveyor under the *Surveyors Act 2003* using best available evidence which is based on: i. the 'as constructed' drawings for the subdivision of the original estate lodged with the Council; or ii. if paragraph (a)(i) does not apply, the 2002 contours of the Council's mapping system; or b. that is the result of operational work carried out as a consequence of a material change of use or reconfiguring a lot, if: i. the material change of use or reconfiguring a lot was assessable development under the Council's planning scheme in effect between 1 January 2002 and the commencement of this planning scheme; and ii. the operational work accords with the following: A. the development approval for the material change of use or reconfiguring a lot; B. the development approval which approved the operational work. Editor's note—Section 1.7.5 provides that for the purpose of the definition of ground level in Schedule 1, the level of the natural ground is deemed to have been lawfully changed if the level of the natural ground level is the prescribed level.
Prescribed secondary code	See Section 5.3.5.
Primary cycle route	A cycle route (including Brisbane's Riverwalk) that provides for all cyclists, including high speed commuters and links residential areas to major employment centres, regional activity centres and other key destinations, including public transport, cultural and recreation facilities.

Primary street frontage	The street frontage that is most commonly addressed by other buildings in the block.
Priority infrastructure area	See *Planning Act 2016*.
Public realm	Any publicly accessible streets, pathways, cross-block links, arcades, plazas, parks, open spaces, key civic spaces and any public and civic buildings and facilities. Note—The term public domain has the same meaning when used to describe a physically or visually accessible environment for the day-to-day use or enjoyment of the public.
Railway station	A public passenger transport facility or future public passenger transport facility identified on the State Planning Policy Interactive Mapping System.
Rear lot	A lot that has access to a road only by means of an access way that forms part of the lot, or by means of an easement over adjoining land.
Regional ecosystem	See *Vegetation Management Act 1999*.
Registered Professional Engineer Queensland	A person currently registered as a professional engineer under the *Professional Engineers Act 2002*.
Regulation	*Planning Regulation 2017*.
Remnant vegetation	See *Vegetation Management Act 1999*.
Replacement tree area	An area of a site shown on a plan or drawing, where trees replacing a lost significant landscape tree will be planted.
Residential	Any combination of the following uses: community residence, multiple dwelling, residential care facility, retirement facility, rooming accommodation, short-term accommodation. Note—Only if used in relation to describing the proportion or component of development allocated for residential and non-residential use.
Restoration	Returning existing habitats to a known past state or to an approximation of the natural condition by repairing degradation, removing introduced species or by reinstatement.
Rooftop garden	A recreation and amenity space on a building rooftop that incorporates a mix of hard and soft landscaping and open space. For the purpose of Section 1.7.7(3) only, a rooftop garden also means a space that: a. is not located on a podium or in a building height

	transition; b. includes communal open space and does not include private open space; c. includes a minimum soft landscaping area of 15% of the rooftop; d. may only include the following structures: i. lift shaft and stairway; ii. pool or spa including any elevated deck, platform or floor level; iii. roofed structures and fully enclosed structures: A. lobby or foyer; B. shade or shelter structure; C. internal communal recreation space; D. toilets, bathrooms, showers and change room facilities; E. a structure accommodating a Bar or Food and drink outlet if in the Mixed use zone or a zone in the Centre zones category where the premises does not contain accommodation activities; F. a structure accommodating building plant, equipment or a meter room; e. meets the following parameters for structures mentioned in (d): i. maximum height above the rooftop of: A. 3.5m for a pool, spa and any elevated deck, platform, walkway or floor level (excluding safety barriers up to 1.8m where not tinted); B. 3.5m where setback less than 3m from the outermost projection of the rooftop; C. 6m where setback a minimum 3m from the outermost projection of the rooftop; ii. maximum combined total footprint of 40% of the rooftop for all roofed structures (excluding lift shaft and stairway); iii. maximum combined total gross floor area of 20% of the rooftop for all fully enclosed structures (excluding lift shaft and stairway). Note—For the purpose of calculations under (c), (d) and (e): • a reference to the rooftop means the area on top of the highest storey of a building measured to the outermost projection; • the highest storey of a building for determining the rooftop excludes the storey that is the rooftop garden; • a roofed structure is a roof or an adjustable roofing system with the capability of being impervious to water

	or wind. Note—Examples of internal communal recreation spaces may include a gymnasium, media/games room, communal dining/entertainment room or sauna.
Run-off hectare	The demand for waterway capacity generated by one gross hectare of land calculated using the coefficient of run-off for that area classification.
Rural Neighbourhoods	See SFM-004 Brisbane Greenspace System Strategic Framework Map.
Secondary cycle route	A cycle route that provides linkages between residential areas and primary routes or between suburban destinations such as schools, suburban centres, cultural activity areas and recreational facilities.
Secondary street frontage	Where a lot has more than one frontage, a frontage that is not the primary street frontage.
Selected Transport Corridors	See SFM-003 Brisbane Selected Transport Corridors and Growth Nodes Strategic Framework Map.
Sensitive use	A use that is a childcare centre, a community care centre, a community residence, a detention facility, a dual occupancy, a dwelling house, a dwelling unit, an educational establishment, a health care service, a hospital, a hotel, to the extent the hotel provides accommodation for tourists or travellers, a multiple dwelling, a relocatable home park, a residential care facility, a resort complex, a retirement facility, rooming accommodation, rural workers' accommodation, short-term accommodation or a tourist park.
Sensitive zone	The following zones and precincts: a. all zones in the residential zones category and the centres zones category; b. Emerging community zone; c. Mixed use zone; d. Rural residential zone; e. in the Community facilities zone: i. education purposes zone precinct; ii. health care purposes zone precinct; and iii. major health care zone precinct.
SEQ Regional Plan	*South East Queensland Regional Plan*.
Significant corner site	A site identified in a neighbourhood plan to accommodate building or development which attain local prominence through a combination of architecture, location and their contribution to the public realm and the quality of the

	pedestrian experience in particular.
Significant landscape tree	A tree on a site identified in the Landscape features sub-category on the Significant landscape tree overlay map and of the tree species and dimensions listed in Table 8.2.19.3.B of the Significant landscape tree overlay code; or A tree on a site identified in the Individual or group Significant landscape tree site sub-category or Significant landscape tree - adjoining site sub-category on the Significant landscape tree overlay map and listed in Table 8.2.19.3.C of the Significant landscape tree overlay code; or A tree identified in the Significant landscape tree - vegetation protection order sub-category on the Significant landscape tree overlay map and listed in Table 8.2.19.3.C of the Significant landscape tree overlay code.
Significant residual impact	See *Environmental Offsets Act 2014*. Editor's note—Further guidance on significant residual impact is provided in the Offsets planning scheme policy.
Sleeping area	A bedroom, ward or dormitory.
Small lot	A lot which is: a. less than 450m^2; or b. a rear lot of less than 600m^2 excluding an access way.
Social housing	See the *State Planning Policy*, Glossary.
Special Centre	See SC2.1 Strategic framework maps.
Suburban Living Areas	See SC2.1 Strategic framework maps.
Suburban road	A road identified as a suburban road on the Road hierarchy overlay map.
Tree protection zone	The three-dimensional extent of the space a tree occupies above and below ground, set aside for protection of the tree, as shown in Figure a of the Significant landscape tree overlay code.
Trunk infrastructure	See *Planning Act 2016*.
Unacceptable risk	Unacceptable risk is a situation where people or property are exposed to a predictable hazard event that may result in serious injury, loss of life, failure of community infrastructure, or property damage that would make a dwelling unfit for habitation.

Walking distance	The distance between two places, measured from reasonable pedestrian access points and along roads with verges, off-road pathways or other reasonable pedestrian connections.

Schedule 6 Planning scheme policies

SC6.1 Planning scheme policy index

The table below lists all the planning scheme policies applicable to the planning scheme area.

Table SC6.1.1—Planning scheme policy index

Number	Planning scheme policy title
SC6.2	Air quality planning scheme policy
SC6.3	Biodiversity areas planning scheme policy
SC6.4	Bushfire planning scheme policy
SC6.5	Coastal hazard planning scheme policy
SC6.6	Commercial character building planning scheme policy
SC6.7	Compensatory earthworks planning scheme policy
SC6.8	Concrete batching plants planning scheme policy
SC6.9	Consultation planning scheme policy
SC6.10	Crime prevention through environmental design planning scheme policy
SC6.11	Flood planning scheme policy
SC6.12	Graffiti prevention planning scheme policy
SC6.13	Heritage planning scheme policy
SC6.14	Independent design advisory panel planning scheme policy
SC6.15	Industrial hazard and risk assessment planning scheme policy
SC6.16	Infrastructure design planning scheme policy
SC6.17	Landscape design planning scheme policy
SC6.18	Landslide planning scheme policy
SC6.19	Management of hazardous chemicals in flood affected areas planning scheme policy
SC6.20	Management plans planning scheme policy
SC6.21	Noise impact assessment planning scheme policy
SC6.22	Offsets planning scheme policy
SC6.23	Park management plan planning scheme policy
SC6.24	Planting species planning scheme policy

SC6.25	Potential and actual acid sulfate soils planning scheme policy
SC6.26	Refuse planning scheme policy
SC6.27	Social and health impact assessment planning scheme policy
SC6.28	Storage and dispensing of petroleum products planning scheme policy
SC6.29	Structure planning planning scheme policy
SC6.30	Traditional building character planning scheme policy
SC6.31	Transport, access, parking and servicing planning scheme policy
SC6.32	Transport air quality corridor planning scheme policy
SC6.33	Vegetation planning scheme policy

SC6.16 Infrastructure design planning scheme policy

Contents

Chapter 1 Introduction

Contents

1.1 Introduction

1.1.1 Relationship to planning scheme

This planning scheme policy:

a. provides information the Council may request for a development application;
b. provides guidance or advice about satisfying an assessment benchmark which identifies this planning scheme policy as providing that guidance or advice;
c. states a standard for the assessment benchmark in the following table.

Column 1 — Section or table in the code	**Column 2 — Assessment benchmark reference**	**Column 3 — Standards in planning scheme policy**
Part 7		
Bulimba district neighbourhood plan code		
Table 7.2.2.4.3.A	AO4	Chapter 10; Chapter 12
Table 7.2.2.4.3.A	AO5.1	Chapter 4
Table 7.2.2.4.3.A	AO10	Chapter 10; Chapter 12
Table 7.2.2.4.3.A	AO15.2	Section 3.7.4.7; Section 3.7.4.9
City Centre neighbourhood plan code		
Table 7.2.3.7.3.A	AO21	Section 3.7
Eastern corridor neighbourhood plan code		
Table 7.2.5.2.3.A	AO9.3	Section 3.7.4.8; Chapter 6
Table 7.2.5.2.3.A	AO11.1	Section 3.7

Table 7.2.5.2.3.A	AO18.1	Chapter 4
Table 7.2.5.2.3.A	PO39	Chapter 10
Eight Mile Plains gateway neighbourhood plan code		
Table 7.2.5.5.3.A	AO13	Chapter 10
Fortitude Valley neighbourhood plan code		
Table 7.2.6.4.3.A	PO5	Section 3.7
Table 7.2.6.4.3.A	AO5.1	Section 3.7
Table 7.2.6.4.3.A	AO5.2	Section 3.7
Table 7.2.6.4.3.A	AO6.2	Section 3.7.4.8; Chapter 6
Table 7.2.6.4.3.A	AO6.3	Section 5.3.3
Table 7.2.6.4.3.A	AO13.2	Section 3.7.4.7
Table 7.2.6.4.3.A	PO14	Section 3.7; Section 5.3.3
Ithaca district neighbourhood plan code		
Table 7.2.9.2.3.A	AO4.2	Chapter 4
Latrobe and Given Terraces neighbourhood plan code		
Table 7.2.12.2.3.A	AO11	Section 3.7; Chapter 3
Lutwyche Road corridor neighbourhood plan code		
Table 7.2.12.4.3.A	AO3	Section 3.7; Chapter 10
Table 7.2.12.4.3.A	AO6.2	Section 3.7
Table 7.2.12.4.3.A	AO16.3	Section 3.7
Mt Gravatt corridor neighbourhood plan code		
Table 7.2.13.10.3.A	AO6	Section 3.7
Table 7.2.13.10.3.A	AO7	Chapter 10
Table 7.2.13.10.3.A	AO19.1	Chapter 7
Table 7.2.13.10.3.A	AO19.2	Chapter 3; Chapter 7
New Farm and Teneriffe hill neighbourhood plan code		
Table 7.2.14.1.3.A	AO28.3	Chapter 3; Chapter 4
Table 7.2.14.1.3.A	AO28.4	Chapter 12
Newstead and Teneriffe waterfront neighbourhood plan code		

Table 7.2.14.2.3.A	AO2.1	Section 3.7; Section 5.3.6; Chapter 6; Chapter 12
Table 7.2.14.2.3.A	AO2.2	Chapter 12
Rochedale urban community neighbourhood plan code		
Table 7.2.18.4.3.A	AO9	Section 9.5
Table 7.2.18.4.3.A	AO15.3	Chapter 7
Table 7.2.18.4.3.A	AO15.4	Chapter 3; Chapter 7
Sherwood—Graceville district neighbourhood plan code		
Table 7.2.19.3.3.A	AO4.5	Section 3.7
Table 7.2.19.3.3.A	AO16	Chapter 3
South Brisbane riverside neighbourhood plan code		
Table 7.2.19.4.3.A	AO6.3	Section 3.7.4.8
Table 7.2.19.4.3.A	AO9.3	Chapter 3; Section 5.3.7; Chapter 10
Table 7.2.19.4.3.A	AO10.2	Chapter 3; Section 5.3.7
Table 7.2.19.4.3.A	AO15.1	Chapter 8
Table 7.2.19.4.3.A	AO19.2	Chapter 10
Part 8		
Bicycle network overlay code		
Table 8.2.3.3	AO1.1	Section 2.4; Section 3.6; Chapter 4
Table 8.2.3.3	AO3.1	Section 2.4; Section 2.5; Section 3.6; Chapter 4; Section 8.7; Section 8.8; Chapter 12
Table 8.2.3.3	AO3.3	Section 3.6; Section 3.7; Chapter 4; Chapter 12
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Table 8.2.3.3	AO7.1	Chapter 4; Chapter 8; Chapter 12
Table 8.2.3.3	AO7.2	Chapter 8; Chapter 12
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Table 8.2.11.3.A	AO2 note	Chapter 7; Chapter 8
Table 8.2.11.3.A	AO5.1	Chapter 7; Chapter 8
Table 8.2.11.3.A	AO7.1	Chapter 7; Chapter 8
Table 8.2.11.3.A	AO7.3	Chapter 7; Chapter 8
Road hierarchy overlay code		
Table 8.2.18.3	AO4	Chapter 2; Chapter 3
Table 8.2.18.3	AO6.1	Chapter 2; Chapter 3
Table 8.2.18.3	AO6.2	Chapter 2; Chapter 3
Table 8.2.18.3	AO8	Chapter 2; Chapter 3
Streetscape hierarchy overlay code		
Table 8.2.20.3.A	AO1	Section 2.5; Chapter 3
Table 8.2.20.3.A	AO2.2	Section 2.5; Chapter 3; Chapter 5
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Table 8.2.20.3.A	AO4	Section 2.5; Chapter 3; Chapter 5
Table 8.2.20.3.A	AO5.1	Section 2.5; Chapter 3; Chapter 5
Table 8.2.20.3.B	Laneway	Chapter 3
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Table 9.3.14.3.A	AO49.2	Section 3.7.4.8
Park code		

Table 9.3.16.3	AO1 note	Chapter 10
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Park planning and design code		
Table 9.3.17.3	PO6	Section 2.4; Chapter 4; Chapter 9; Chapter 10
Table 9.3.17.3	AO11.2	Chapter 10
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Special purpose code		
Table 9.3.24.3.A	AO12	Section 2.5; Section 3.7; Chapter 5
Specialised centre code		
Table 9.3.25.3.A	AO17	Chapter 5
Table 9.3.25.3.A	AO21	Section 2.5; Section 3.7; Chapter 5
Table 9.3.25.3.A	AO45	Chapter 8
Filling and excavation code		
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Infrastructure design code		
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Table 9.4.4.3.A	AO15	Chapter 13
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Table 9.4.4.3.A	AO19	Section 8.5; Section 8.8
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Table 9.4.5.3	AO2.1	Section 8.9
Table 9.4.5.3	AO11	Section 8.5
Operational work code		
Table 9.4.6.3	PO1	All
Stormwater code		
Table 9.4.9.3.A	AO1	Chapter 7
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Table 9.4.10.3.A	AO11.2	Chapter 3
Table 9.4.10.3.A	AO12.1	Section 2.4; Section 3.6; Section 3.7; Chapter 4
Table 9.4.10.3.A	AO12.3	Section 2.4; Section 3.6; Section 3.7; Chapter 4
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Table 9.4.10.3.A	AO17	Chapter 3
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Table 9.4.10.3.A	AO19	Chapter 3
Transport, access, parking and service code		
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Table 9.4.11.3	AO21.3	Section 3.3
Table 9.4.11.3	AO21.2	Section 3.4

1.1.2 Purpose of planning scheme policy

The purpose of the Infrastructure design planning scheme policy is to provide the information required for a development application, guidance and advice on satisfying assessment benchmarks and standards for the design and delivery of infrastructure to a high quality to appropriately service the needs of the community and support the ongoing functions of the city.

Editor's note—This planning scheme policy is drafted as part of the planning scheme. If this planning scheme policy is used for another purpose, any variation to the standards, guidance or advice, whether or not any variation is envisaged in the planning scheme policy, must only be made with approval of Council.

Editor's note—Technical requirements for the construction, handover and practical completions stages of an infrastructure build are provided in Council's Infrastructure Installation and Construction Requirement Manual and related operating procedures and documents.

Editor's note—Further information and guidance for the planning and design of the built environment to reasonably consider access and inclusion for all is provided in the *Inclusive Brisbane Plan 2019-2029.*

1.1.3 Terminology

In this planning scheme policy, unless the subject matter or context indicates or requires otherwise, a term has the following meaning:

Table 1.1.3.A— Index of terminology

Index of terms used

Term	Definition
Activity space	A relatively small area within a larger park or natural area, which is designed to concentrate visitor use and facilities and to act as a focal point.
Afflux	The rise in water level on the upstream side of a bridge, culvert or obstruction caused when the flow area of a waterway is obstructed by the new structure.
Awning	Any structure that is attached to a building and spans above and across the footway.
Bikeway	A pathway set aside for cyclists, or designated as a shared facility for cyclists and pedestrians.
Biodiversity	The natural diversity of wildlife (plants and animals), together with the environmental conditions necessary for their survival.
Bridge	A structure as defined in AS 5100.1-2004 Bridge design — Scope and general principles.
Brisbane's Riverwalk	Identified in the bicycle network as a primary cycle route, given its function as an important facility for recreational and commuter cyclists and pedestrians.
Clean stormwater	Stormwater that has not been contaminated by sediment or other prescribed contaminants from the work site, or has not been directly or indirectly

	contaminated as a result of actions associated with the work site.
Contaminated stormwater	Water not classified as clean stormwater. Also called 'dirty water'.
Controllable erosion	Accelerated soil erosion that can be controlled or prevented through reasonable and practicable measures while allowing the associated land-disturbing development to continue.
Corridor link park	A park providing connections for recreation and commuter use.
Culvert	Culvert asset boundaries must extend beyond the barrels to include the head walls (or parapet walls), wing walls, aprons, base slabs to support the barrels (if any), and guardrails (or handrails) structurally attached to the culvert.
District parks or facilities	A park or recreation facility that is intended to serve an area within a 2km to 5km radius.
Elevated structure	A suspended infrastructure asset, other than a bridge, where the walking track, deck or platform is supported on a substructure rather than directly bearing on the ground.
Erosion hazard assessment	Refers to the current version of Brisbane City Council's *Erosion Hazard Assessment* (EHA) form and *Supporting Technical Notes*.
ESC plan(s)	A site plan(s), showing a graphical representation of the ESC measures (including suitably detailed explanatory notes and details on the plan) that when implemented during land-disturbing activities will protect waters from the impacts of land and infrastructure development.
ESC program	A set of documents including ESC plans, supporting documentation, specifications and construction details that sets out the erosion and sediment control strategies necessary to protect waters from the impacts of land and infrastructure development. For some forms of development (e.g. subdivisions), the ESC program may contain several ESC plans, drawings of each ESC measure, a timetable for installation of ESC measures etc. The ESC program is a flexible document that is outcome focused and applies throughout the life of the development, from initial land disturbance until the land is permanently stabilised against erosion.
ESC measures	Best-practice drainage, erosion and sediment control principles and practices, both structural and non-structural, used to prevent and/or minimise the impacts of soil erosion and sediment pollution.
ESC standard	Council's requirements for the protection of waters from the impacts of land and infrastructure development.
Freight-dependent development	Development that is to be serviced by a B-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensioned vehicle, or any other vehicle identified by the Queensland Government as requiring a permit to operate on the road.

Freight network	Means primary freight access and/or primary freight route and freight-dependent development.
Heritage item	A building or feature with cultural or natural heritage significance included in the Heritage overlay code.
Hold point	A stage in the construction program beyond which work must not proceed until a stated activity or works has been completed and certified by the responsible person (Refer to Section 3.0 — Qualifications).
Informal use park	A park intended to provide a variety of casual recreational opportunities such as play, picnicking, and large social or community gatherings. An informal use park may also protect or enhance landscape amenity values.
Infrastructure	Land, facilities, services and works used for supporting park management and meeting environmental needs, including community needs.
Land disturbance	Any movement or disturbance of earth or soil, including interference with organic or inorganic ground coverage (e.g. grass, concrete) that exposes the earth to erosion.
Land-disturbing development	Work that involves moving or otherwise disturbing soil, including ground coverage.
Landmark/ signature point	A sub-type of landscape amenity park, located in close proximity to a main thoroughfare, including parks that: provide 'green gateways' to the city or City Centre and may include ornamental gardens, floral displays and manicured lawn; display monuments and memorials along major transport routes; contain landmarks and help orientate people moving through the city.
Landscape amenity park	A park intended to protect or enhance an area's scenic or visual amenity value, such as scenic outlooks, landmarks and attractive vegetation along transport corridors.
Local bicycle route	A bicycle route that provides a link from individual properties or destinations to primary and secondary route networks.
Local parks or facilities	A park or recreation facility that services residents or workers within 500m or easy walking distance, without physical barriers to access (such as a railway line). In the case of natural areas, sport parks and informal use parks, the intended service catchment is influenced by the capacity of the park for sustained visitation. Note—Parks may provide several recreation opportunities or functions but are classified according to their primary function.
Metropolitan parks or facilities	Are intended to serve or benefit all the residents and visitors across Brisbane, or generally within a 25km radius.
Natural area	A park with an area greater than 5ha of relatively intact native bushland, riparian and dryland habitat or wetland managed primarily for the protection

	and enhancement of biodiversity values and, where appropriate, opportunities for recreation in a natural setting.
Off-road bicycle route	A bicycle path, separated path or shared path.
On-road bicycle route	A bicycle lane or an on-road separated bicycle lane.
Open activity area	A grassed area within a larger park where informal activities such as ball games, Tai Chi and social events can safely take place, without detriment to other park visitors and to park values.
Open space	A network of spaces, with no or few built structures, that contribute to recreation opportunities, community health, biodiversity and the landscape setting or 'green' fabric of the city. Open space includes wetlands, bushlands, beaches, lakes, dams, culturally significant places, parks and outdoor recreation areas.
Park	A place that includes shade trees and landscaping or turf.
Park hierarchy	A system of parks and facilities provided to respond to levels of community need and the geographic area in which people can benefit from a park or facility. The park hierarchy reflects the distance people are willing to travel to use a park.
Pathway	A pathway with a fully constructed hard-wearing surface providing pedestrian access in high-use areas. Cyclists may use paths with care but unlike bikeways they are not designated for cyclist use.
Person	Includes a body of persons, whether incorporated or unincorporated.
Pest management plan	The Plan for Pest Management is prepared by Council and approved by the Queensland Government under the provisions of the *Land Protection (Pest and Stock Route Management) Act 2002*. The plan stipulates a coordinated approach within Brisbane to the management of declared noxious and environmental weeds. A list of weed species in each of these categories is available on the Council website at www.brisbane.qld.gov.au.
Ponding	Any water that has the ability to become stagnant.
Primary cycle route	A high-capacity cycle route that: provides for all cyclists, including high-speed commuters; links residential areas to major employment centres, regional activity centres and other key destinations, including public transport, educational, cultural and recreation facilities.
Primary freight access	The connection between primary-freight routes and freight-dependent development.
Primary freight route	A direct road connection for non-standard vehicles between regionally significant industrial areas, ports and inter-regional destinations.

Recreation	Any activity that a person chooses to undertake in their free time for enlightenment, enjoyment, personal development, health etc.
Roadside barrier	General term used to describe a barrier system installed to control the movement of vehicle or pedestrian traffic.
Safety barrier	A roadside barrier is installed to control or restrict the movement of errant or wayward vehicles.
Secondary cycle route	A cycle route that provides linkages between: residential areas and primary routes; suburban destinations such as schools, suburban centres, cultural activity areas and recreational facilities.
Sediment	Refer to definition in the *Environmental Protection Act 1994* and the *Environmental Protection Regulation 2008*. Typically includes earth, soil, clay, silt, sand and gravel.
Site	The land over which works associated with the development are/will occur, whether internal or external to the real property boundaries of the primary work site location. Also called work site.
Skate facility guide	The skateboarding and BMX facilities design guidelines (available from Sport and Recreation Victoria at www.sport.vic.gov.au).
Sport	Any physical activity performed in accordance with set rules. It may take place indoors or outdoors, in water, on land or in the air. It can be either competitive or non-competitive and can involve individuals or teams.
Sporting field dimensions	The dimensions described in Australian Sports Facilities — Sports Dimensions for Playing Areas (available at www.ausport.gov.au).
Sports park	A park intended to provide a variety of structured or formal recreation opportunities, such as team competitions, physical skills development and training. It often includes multipurpose community facilities.
Standard vehicle	A vehicle that has a legal right of access to all roads including Austroads vehicle classes 1—9.
Stormwater	Surface water run-off following a rain event (including piped flows). Includes sub-surface water seepage that reaches the surface (e.g. ponding in sediment basin due to high water table).
Track	A formed and surfaced pathway (or maintenance access road) providing pedestrian, bicycle, horse and maintenance vehicle access within a park. The wearing surface is usually gravel, sand, deco or similar and may be stabilised.
Trail	A path similar to a track, but usually narrower and with a natural earth surface and providing access to remote areas of a park.

Urban common park	A sub-type of informal use park provided for intensive community use and located within highly urbanised settings, such as the CBD, major commercial centres, civic spaces and community hubs.
Umbrella	A non-permanent detached structure that is supported by a minimum number of upright posts.
Verge	That part of the street or road reserve between the carriageway and the boundary of the adjacent lot or other limit to the road reserve. It may accommodate service provider utility infrastructure, footpaths, stormwater flows, street lighting poles and planting.
Waters/ watercourse/ waterway	For the purposes of this Standard is an interchangeable term of ordinary meaning. It may also have specific legal meaning in certain circumstances (e.g. *Water Act 2000*).

Table 1.1.3.B— Abbreviations, acronyms and terminology

Abbreviation/acronym/terminology	Description
BPM	base plate mounted
CBR	California bearing ratio
CCT	Correlated Colour Temperature
CGF	cumulative growth factor
CKC	concrete kerb and channel
CRI	Colour Rendering Index
DBH	diameter at breast height
DG	dense graded
DPC	damp proof course
DRAINS	is a hydrological model (see ILSAX), and hydrological model Stormwater drainage System design and analysis
DSS	desired standard of service
DWS	deck wearing surface
ESA	equivalent standard axles
ESC	erosion and sediment control
FOBOT	fibre optic break out tray
FWD	falling weight deflectometer

GI	galvanised iron
HED	high early discharge
HLP	heavy load platform
HML	higher mass limit
HREOC	Human Rights and Equal Opportunity Commission
HV	heavy vehicle
HWM	high water mark
IAP	intelligent access program
IDE	increased damage effect
ILSAX	a run-off routing hydrological model used for urban drainage analysis
LAT	lowest astronomical tide
LATM	local area traffic management
LATMD	local area traffic management devices
LIDAR	light detection and ranging or laser imaging detection and ranging
LSF	load safety factor
MUTCD	manual of uniform traffic control devices
NALL	Natural Asset Local Law
NFC	no-fines concrete
NPL	Network Public Lighting
N/A	not applicable
OAA	open arcade asphalt
OGA	open graded asphalt
PAFC	polished aggregate fiction value
PMT	pad mounted transformer
PSD	permissible site discharge
PT	pole transformers
PVC	polyvinyl chloride

PWD	people with disabilities
QUDM	Queensland urban drainage manual
QMUTCD	Queensland manual of uniform traffic control devices
RAFTS	a run-off routing hydrological model for catchment hydrology
RCP	reinforced concrete pipe
RF	reliability factor
RORB	is a general run-off and stream-flow routing program used for catchment hydrology
RPDM	road planning and design manual
RSS	reinforced soil system
SAR	standard axle repetition
SBSMP	site based stormwater management plan
SMA	stone mastic asphalt
TGSI	tactile ground surface indicators
TLD	traffic load distribution
UPVC	unplasticised polyvinyl chloride
UVR	ultraviolet radiation
VPO	Vegetation Protection Order
WC	water closet
WSUD	water sensitive urban design

1.1.4 Standard drawings and reference specifications

1.1.4.1 Standard drawings

1. Brisbane Standard Drawings identified in Table 1.1.4A form part of this planning scheme policy.
2. Some Brisbane Standard Drawings are referenced in the planning scheme.
3. Infrastructure design is to consider all relevant standard drawings, including those for related and interfacing infrastructure components.

Table 1.1.4.A—Standard drawings

Drawing Number	Title	Amendment	Revision Date
0000 Series — Preface			
BSD-0001	Index of standard drawings — Sheet 1		March 2017
BSD-0002	Index of standard drawings — Sheet 2		March 2017
BSD-0019	Supplementary Notes		July 2019
1000 Series — General			
BSD-1001	Line styles and Lettering for Engineering Drawings	E	December 2023
BSD-1002	Drawing symbols - General - Sheet 1 of 2	C	June 2023
	Drawing symbols - Public utilities Electrical and Lighting - Sheet 2 of 2	C	June 2023
BSD-1003	Line styles and lettering for Civil Engineering Drawings	A	May 2014
BSD-1004	Line styles and lettering for Structural Drawings	Proposed	
BSD-1005	Line styles and lettering for Landscaping Drawings	Proposed	
BSD-1006	Line styles and lettering for Building Services Drawings	Proposed	
BSD-1007	Line styles and lettering for Water Management Drawings	Proposed	
BSD-1008	Line styles and lettering for Intelligent Transport Systems Drawings	Proposed	
BSD-1011	Rectangular pit types	D	June 2023
BSD-1012	Cable pit — Rectangular type lids	C	March 2021
BSD-1013	Public utility corridors and alignments (4.25m wide verge)	F	June 2023
BSD-1014	Public utility conduit sections (4.25m wide verge)	E	July 2019
BSD-1015	Public utility corridors and alignments (3.75m wide verge)	E	June 2023
BSD-1016	Public utility conduit sections (3.75m wide verge)	E	July 2019
BSD-1021	Minor road & primary freight access corridors - 2 traffic lanes — Sheet 1 of 2	C	July 2019
	Minor road & primary freight access corridors - 2 Traffic lanes — Sheet 2 of 2	B	July 2019

BSD-1022	Major road corridors - 2 Traffic lanes - Sheet 1 of 5	B	September 2015
	Major road corridors - 4 Traffic lanes - Sheet 2 of 5	A	September 2015
	Major road corridors - 6 Traffic lanes - Sheet 3 of 5	A	September 2015
	Major road corridors - 4 Traffic lanes - Constrained corridor - Sheet 4 of 5	A	September 2015
	Major road corridors - 6 Traffic lanes - Constrained corridor - Sheet 5 of 5	A	September 2015
2000 Series — Road Corridor			
BSD-2001	Kerb profiles	D	March 2021
BSD-2002	Precast kerb blocks	B	March 2021
BSD-2003	Double kerb — Asphalt footpath only	C	July 2019
BSD-2021	Vehicle crossing (driveway) - Other than single dwelling and rear allotment access - Details - Sheet 1 of 2	F	June 2023
	Vehicle crossing (driveway) - Other than single dwelling and rear allotment access - Notes & sections - Sheet 2 of 2	G	June 2023
BSD-2022	Vehicle crossing (driveway) — Single dwelling	E	November 2019
BSD-2023	Vehicle crossing (driveway) — Grid crossing and invert modification	E	March 2021
BSD-2024	Vehicle crossing (driveway) — Grades (3.75m verge)	C	December 2017
BSD-2025	Vehicle crossing (driveway) — Grades (4.25m verge)	C	December 2017
BSD-2026	Rural property access culvert crossing table drains	C	March 2021
BSD-2027	Vehicle crossing (driveway) — Prohibited locations	Proposed	
BSD-2028	Vehicle crossing (driveway) - Single dwelling - Grass verge swale	F	June 2023
BSD-2041	Pavement drains	C	July 2019
BSD-2042	Trench restoration — Road crossing — Flexible pavements	B	January

			2016
BSD-2043	Trench restoration — Verges and paths	B	November 2018
BSD-2061	Precast traffic island — Codes and details — Sheet 1 of 2	B	September 2015
	Precast traffic island — Codes and details — Sheet 2 of 2	B	September 2015
BSD-2101	Indented bus bay options standard crossfall	B	September 2015
BSD-2102	Indented bus bay options adverse crossfall	B	January 2016
BSD-2103	Premium bus stop	F	March 2021
BSD-2104	Intermediate bus stop — Sheet 1 of 3	E	March 2021
	Intermediate bus stop — In centres — Sheet 2 of 3	E	March 2021
	Intermediate bus stop — Constrained site — Sheet 3 of 3	E	March 2021
BSD-2105	Regular bus stop — Without seat — Sheet 1 of 3	C	November 2019
	Regular bus stop — With seat — Sheet 2 of 3	B	November 2019
	Regular bus stop — In centres — Sheet 3 of 3	C	November 2019
BSD-2107	oOh!media Mini Boulevard bus shelter	E	March 2021
BSD-2108	oOh!media 'Boulevard' bus shelter	E	March 2021
BSD-2109	Standard Translink suburban shelter without advertising panel typical layout	E	March 2021
BSD-2221	Retaining wall - Stonepitched	D	December 2023
BSD-2222	Retaining wall - Concrete block - Type 1 footing	C	June 2023
BSD-2223	Retaining wall - Concrete block - Type 2 footing	C	June 2023

3000 Series — Traffic Management			
BSD-3001	Typical manoeuvring areas - Residential streets - Sheet 1 of 2	C	July 2019
	Typical manoeuvring areas - Residential streets - Sheet 2 of 2	C	July 2019
BSD-3002	Turning provisions for industrial access	A	May 2014
BSD-3003	Minor road to major road intersection — Minor road connection detail — Sheet 1 of 3	B	November 2019
	Minor road to major road intersection — Typical passing lane treatments — Without right-turn lanes — Sheet 2 of 3	B	November 2019
	Minor road to major road intersection — Typical passing lane treatments — With right-turn lanes — Sheet 3 of 3	B	November 2019
BSD-3004	Turning template Acco 2350 side loading refuse vehicle	C	February 2016
BSD-3005	Turning template Scania L94UB CR22L bus	A	May 2014
BSD-3006	Turning template Volvo 10B bus	A	May 2014
BSD-3007	Turning template Volvo B12 BLE 14.5m bus	A	May 2014
BSD-3008	Turning template Acco 2350 rear loading PUP refuse vehicle - Sheet 1 of 2	C	July 2019
	Turning template Acco 2350 rear loading RORO refuse vehicle - Sheet 2 of 2	C	July 2019
BSD-3009	Turning template Acco 2350 front loading refuse vehicle	B	February 2016
BSD-3101	Brisbane City Council kerbside allocation sign codes — Sheet 1 of 2	E	June 2023
	Brisbane City Council kerbside allocation sign codes — Sheet 2 of 2	E	June 2023
BSD-3102	Street name plate setout (sign code G5-2)	C	March 2021
BSD-3103	Brisbane City Council special sign code ‘A’	B	July 2019
BSD-3104	Bus stop marker 'J' Pole post - Details - Sheet 1 of 2	D	July 2019
	Bus stop marker 'J' Pole post - Installation and orientation - Sheet 2 of 2	A	July 2019
BSD-3105	Parking regulation signs — Sign codes 91BtD/1L & 91StD/1R	C	March 2021
BSD-3106	Parking regulation signs — Sign codes 91Q+D/1D &	C	March

	91Q+tD/20EL/1R		2021
BSD-3107	Parking regulation signs — Sign codes 41FD/61AL.1SR & 91Q+D/61EL.1R	C	March 2021
BSD-3108	Parking regulation signs — Sign codes 20L.1QR & 21L.1R	C	March 2021
BSD-3109	Parking regulation signs — Sign codes 6L.1R & 62L.1R	C	March 2021
BSD-3110	Parking regulation signs — Sign codes 52EZ1L.1R & 62NL.1R	C	March 2021
BSD-3111	Parking regulation signs — Sign codes 41Z1R/52Z2L & 1ER/62NL	C	March 2021
BSD-3112	Parking regulation signs — Sign codes 43 & 45 and bottom panels	C	March 2021
BSD-3113	Parking regulation signs — Sign codes 41Z1L.1Z2R, 43DyD & 1GD/21WR	C	March 2021
BSD-3114	Enhanced loading signs — Commercial and passenger & commercial loading zones — Sheet 1 of 2	A	March 2021
	Enhanced loading signs — Passenger and school loading zones — Sheet 2 of 2	A	March 2021
BSD-3115	Brisbane City Council bus stop - District stop - Flag sign and marker pole	A	December 2023
BSD-3121	Tactile pole mounted wayfinding signage guideline - Sheet 1 of 2	A	December 2023
	Tactile pole mounted wayfinding signage guideline - Sheet 2 of 2	A	December 2023
BSD-3151	Pavement marking, longitudinal lines	D	March 2021
BSD-3152	Pavement marking, transverse lines	C	March 2021
BSD-3153	Pavement marking, typical minor road non-signalised intersection	B	July 2019
BSD-3154	Raised pavement markers, standard installation for traffic lanes	B	July 2019
BSD-3155	Raised pavement markers, standard installation for painted tails	B	July 2019
BSD-3156	Raised pavement markers, standard installation for painted	C	July 2019

	islands and medians		
BSD-3157	Pavement markings, pavement arrows and give way symbol	C	July 2019
BSD-3158	Pavement markings, merge arrows	A	May 2014
BSD-3161	Pavement marking - Typical - Parallel parking, bus stop and loading/taxi zone	C	January 2016
BSD-3162	Passenger loading zone - Sheet 1 of 2	B	May 2016
	Passenger and commercial loading - Sheet 2 of 2	A	May 2016
BSD-3163	Pavement marking, centrelines on dual to single carriageways	A	May 2014
BSD-3164	Typical pavement markings - Signalised pedestrian crossing	B	July 2019
BSD-3165	Typical pavement markings — Signalised intersection crossing	C	March 2021
BSD-3166	Coloured pavement threshold treatment general design and specification	C	July 2019
BSD-3167	School zone enhancement treatment - Pavement marking	C	July 2019
BSD-3201	Local traffic area - Brisbane City - General design criteria	C	November 2018
BSD-3211	Local traffic area - Roundabout - Central island with concrete apron	C	July 2019
BSD-3212	Local traffic area - Roundabout - Fully mountable asphalt plateau	C	July 2019
BSD-3213	Local traffic area - Intersection priority change - General design criteria	C	July 2019
BSD-3214	Local traffic area - Modified T junction - General design criteria	C	July 2019
BSD-3216	Local traffic area - Speed platform — Mid block - General design criteria	C	July 2019
BSD-3217	Local traffic area - Speed platform — Intersection - General design criteria	C	July 2019
BSD-3218	Local traffic area - Diamond slow way - General design criteria	D	July 2019
BSD-3219	Local traffic area - Angled slow way 1 lane 2 way - Retrofit sites - General design criteria	D	July 2019
BSD-3220	Local traffic area - Angled slow way 2 lane — 2 way - General design criteria	D	July 2019
BSD-3221	Local traffic area - Perimeter gateway - General design criteria	C	July 2019

4000 Series — Traffic Signals and Intelligent Transport Systems			
BSD-4001	Electrical cable clearances	B	March 2017
BSD-4002	Mains connection to Energex equipment	C	June 2023
BSD-4003	Traffic signal/lighting pole electricity supply warning labels	B	March 2021
BSD-4011	General arrangement for access to cable joining pit (saw cut entry)	C	June 2023
BSD-4012	Vehicle detector loop installation details	B	June 2023
BSD-4013	Vehicle detector loop installation details general use & red-light cameras	B	January 2016
BSD-4014	Vehicle detector loop installation details counting & bicycle loops	B	January 2016
BSD-4015	Traffic signal ducts installation detail low voltage (240V) conduits	C	March 2017
BSD-4016	Traffic signal ducts installation detail extra low voltage conduits	B	March 2017
BSD-4031	Circular cable jointing pit 600 diameter - Pit	Proposed	
BSD-4032	Circular cable jointing pit 600 diameter - Collar	B	May 2016
BSD-4033	Circular cable jointing pit 600 diameter - Cover	B	May 2016
	Circular cable jointing pit 600 diameter — Cover fabrication — Sheet 2 of 2	Proposed	
BSD-4034	Replacement pit lid existing round to square pit types	C	July 2019
BSD-4035	Controller base installation details	C	June 2023
BSD-4101	Traffic signal post top assembly & lower mounting bracket - Sheet 1 of 2	C	June 2023
	Traffic signal post top assembly - Sheet 2 of 2	C	June 2023
BSD-4102	Traffic signal junction box and earthing detail joint use pole - Sheet 1 of 2	B	May 2016
	Traffic signal junction box - 36 core - Sheet 2 of 2	A	May 2016
BSD-4103	Adjustable 'Z' bracket for 200mm lanterns	A	May 2014
BSD-4104	Tee-bar strap for dual lanterns	A	May 2014
BSD-4105	Mounting bracket for audio tactile housing on mast arms and	A	May 2014

	Type 6 posts		
BSD-4106	Lock washers	A	May 2014
BSD-4107	Assembly detail of lock washers	A	May 2014
BSD-4108	Cover plate assembly on mast arm	A	May 2014
BSD-4109	LED Lantern Cable - Lantern end - Sheet 1 of 2	B	January 2016
	LED Lantern Cable - Terminal block end - Sheet 2 of 2	B	January 2016
BSD-4121	Traffic signal post & pole installation	C	June 2023
BSD-4122	Post details	C	March 2017
BSD-4123	Joint use column details (BCC type)	A	May 2014
BSD-4124	Mast arm details 2.5 & 5.0m outreach (BCC type)	A	May 2014
BSD-4125	Joint use traffic signal and road lighting pole (BCC type)	E	June 2023
BSD-4126	Joint use traffic signal mast arm 2.5 & 5.0m outreach (Rate 2)	D	June 2023
BSD-4127	8.5m outreach joint use mast arms baseplate mounted	A	May 2014
BSD-4128	11.0m outreach joint use mast arms baseplate mounted	A	May 2014
BSD-4129	Universal 1.5m camera outreach fabrication details	B	November 2018
BSD-4130	Traffic camera mount options — Fab. details 3m pedestal extension	B	June 2023
BSD-4131	Arm and bracket for cameras on VMS gantry Notes - Sheet 1 of 2	B	January 2016
	Arm and bracket for cameras on VMS gantry - Fabrication details - Sheet 2 of 2	B	January 2016
BSD-4151	Standard 4.1m signal pedestal footing details	E	December 2023
BSD-4152	Ragbolt assemblies pedestal	B	December 2017
BSD-4153	Spread footing details 4.1m traffic signal and 1.7m push button posts	B	March 2017
BSD-4154	Ragbolt assemblies mast arm 2.5m & 5m outreach	A	May 2014
BSD-4155	2.5m & 5.0m joint use mast arms footing details and notes	Proposed	

BSD-4156	8.5m & 11.0m joint use mast arms footing details and notes	B	November 2018
BSD-4157	Ragbolt Assemblies for Joint Use Poles	Proposed	
BSD-4158	Joint Use Poles Footing Details & Notes	Proposed	
BSD-4201	Typical positioning of traffic signal components at intersections	C	March 2017
BSD-4202	Typical positioning of traffic signal components at mid-block locations	C	March 2017
BSD-4203	Standard drawing sheet for 19 core cable	B	March 2017
BSD-4204	Standard drawing sheet for 29 core cable	B	March 2017
BSD-4206	Standard drawing sheet for 51 core cable	C	November 2018
BSD-4207	Standard traffic signals installation drawing details sheet	E	June 2023
BSD-4208	Controller terminal layout	A	May 2014
BSD-4209	Dual rack controller top hat with equipment assembly	B	July 2019
BSD-4210	Controller Door Details	A	September 2015
BSD-4211	Controller Top Hat Door Details	A	September 2015
BSD-4301	Bus post for variable message sign (20 character sign)	A	May 2014
BSD-4311	VMS support structure Type BCCVC - Notes — Sheet 1 of 5	C	January 2016
	VMS support structure Type BCCVC - Notes — Sheet 2 of 5	C	January 2016
	VMS support structure Type BCCVC - Frame arrangement — Sheet 3 of 5	C	January 2016
	VMS support structure Type BCCVC - Frame details — Sheet 4 of 5	C	January 2016
	VMS support structure Type BCCVC - Footing details — Sheet 5 of 5	C	January 2016
BSD-4312	VMS support structure Type BCCVA - Notes — Sheet 1 of 5	C	January 2016

	VMS support structure Type BCCVA - Notes — Sheet 2 of 5	C	January 2016
	VMS support structure Type BCCVA - Frame arrangement — Sheet 3 of 5	C	January 2016
	VMS support structure Type BCCVA - Frame details — Sheet 4 of 5	C	January 2016
	VMS support structure Type BCCVA - Footing details — Sheet 5 of 5	C	January 2016
BSD-4313	VMS support structure Type BCCVB - Notes — Sheet 1 of 5	C	January 2016
	VMS support structure Type BCCVB - Notes — Sheet 2 of 5	C	January 2016
	VMS support structure Type BCCVB - Frame arrangement — Sheet 3 of 5	C	January 2016
	VMS support structure Type BCCVB - Frame details — Sheet 4 of 5	C	January 2016
	VMS support structure Type BCCVB - Footing details — Sheet 5 of 5	C	January 2016
5000 Series — Pedestrian and Cyclist Facilities			
BSD-5002	Shared path - Basic Entrance - Sheet 1 of 3	D	July 2019
	Shared path - Standard Entrance - Sheet 2 of 3	D	July 2019
	Shared/segregated path - Featured Entrance - Sheet 3 of 3	D	July 2019
BSD-5003	Bikepath furniture details	C	March 2017
BSD-5004	Bikepath slowdown control (reverse curve)	C	July 2019
BSD-5005	Bikepath slowdown control (offset chicane)	A	May 2014
BSD-5006	Shared path - construction and maintenance site management	A	May 2014
BSD-5007	Standard bikepath typical high and low use network connections	C	June 2023
BSD-5051	Single bike rack — Sheet 1 of 2	A	May 2014
	Single bike rack — Sheet 2 of 2 — Installation	A	May 2014
BSD-5052	Multi bike rack — Sheet 1 of 3	B	December 2017
	Multi bike rack — Details — Sheet 2 of 3	B	January

			2016
	Multi bike rack — Installation — Sheet 3 of 3	B	January 2016
BSD-5101	Bike lane pavement markings (on road bike lanes)	B	January 2016
BSD-5102	Bike lane widths on carriageway (Retrofit)	D	July 2019
BSD-5103	Bike lane - markings at bus stops	B	May 2016
BSD-5104	Bike lanes at signalised intersection, left turn slip lane	C	July 2019
BSD-5105	Bike lane- commencement and termination details	C	July 2019
BSD-5106	Bike lanes, roundabouts, lanes on all approaches	A	May 2014
BSD-5201	Concrete footpath - Details - Sheet 1 of 2	B	December 2017
	Concrete footpath - Notes and cross-sections - Sheet 2 of 2	B	November 2018
BSD-5202	Concrete footpath full width	C	March 2021
BSD-5204	Concrete paths articulated concrete joint detail	E	June 2023
BSD-5205	Elevated walkway with and without handrail	A	May 2014
BSD-5206	Concrete pavement joint details & service pit lids	A	May 2014
BSD-5207	Concrete footpath decorative sawcut — Sheet 1 of 4	D	March 2021
	Concrete footpath decorative sawcut — Sheet 2 of 4	D	March 2021
	Concrete footpath decorative sawcut — Sheet 3 of 4	D	March 2021
	Concrete footpath decorative sawcut — Sheet 4 of 4	D	March 2021
BSD-5208	Bikepath pavement joints	B	March 2021
BSD-5209	Root protection adjacent to concrete bikepaths	A	May 2014
BSD-5210	Pavers — General details	C	March 2021
BSD-5211	Paver banding and concrete banding	A	May 2014

BSD-5212	Path — Concrete and exposed aggregate	D	March 2021
BSD-5213	Path — Deco	A	May 2014
BSD-5214	Path — Asphalt	B	March 2021
BSD-5215	Path — Coloured aggregate spray seal	B	March 2021
BSD-5216	Walking track	A	May 2014
BSD-5217	Directional TGSI/wayfinding trails - Permanent clearances - Sheet 1 of 2	B	September 2015
	Directional TGSI/wayfinding trails - Temporary diversions - Sheet 2 of 2	B	September 2015
BSD-5218	Tactile ground surface indicator detail	C	December 2023
BSD-5231	Kerb ramp - Plan views and notes - Sheet 1 of 2	F	December 2023
	Kerb ramp - Sections and layouts - Sheet 2 of 2	F	December 2023
BSD-5232	Island pedestrian access	C	March 2021
BSD-5233	Typical kerb ramp and traffic signal pedestal location	C	March 2021
BSD-5234	Pedestrian facilities at traffic islands ramps and slots	B	November 2019
BSD-5251	School crossing post, flag and bracket	C	June 2023
BSD-5252	School crossing supervised	B	November 2019
BSD-5253	Children's crossing supervised — with integrated or non-integrated kerb build-outs	C	November 2019
BSD-5254	Children's crossing with pedestrian crossing (zebra) supervised	C	June 2023
BSD-5255	Children's crossing with pedestrian crossing (zebra) — supervised — with integrated or non-integrated kerb buildouts	D	June 2023
BSD-5256	Children's crossing with pedestrian refuge supervised	D	June 2023
BSD-5257	Pedestrian refuge with kerb buildouts	C	June 2023

BSD-5258	Pedestrian refuge provision at zebra crossing	C	June 2023
BSD-5259	Road Network guidelines pedestrian refuge supplementary details — Sheet 1 of 2	C	March 2021
	Road Network guidelines pedestrian refuge supplementary details — Sheet 2 of 2	C	March 2021
BSD-5260	Pedestrian refuge general design criteria	G	June 2023
BSD-5281	Stairway — reinforced concrete	B	March 2021
BSD-5282	Steps — concrete and timber	C	March 2021
BSD-5284	Steps — concrete	B	March 2021
7000 Series — Fences, Barriers and Public Furniture			
BSD-7001	Pedestrian fence/barrier - Galvanised tubular handrail - Sheet 1 of 2	D	June 2023
	Pedestrian fence/barrier - Galvanised tubular handrail - Sheet 2 of 2	D	June 2023
BSD-7002	Fence - Galvanised weldmesh fencing	A	May 2014
BSD-7003	Fence - 1.8m high chainwire	A	May 2014
BSD-7004	Fence - Pedestrian safety	C	November 2018
BSD-7005	Fence - Two rail, steel hollow section post and rail fence	C	July 2019
BSD-7006	Bicycle friendly fence - Galvanised tubular handrail - Sheet 1 of 2	D	December 2023
	Bicycle friendly fence - Galvanised tubular handrail - Sheet 2 of 2	D	December 2023
BSD-7007	Fence - Dog off leash area	A	May 2014
BSD-7008	Fence - Natural area - Three rail	A	September 2015
BSD-7009	Fence - Natural area - Chainwire fauna exclusion fence - Sheet 1 of 2	A	September 2015
	Fence - Natural area - Chainwire fauna exclusion fence - Sheet 2 of 2	A	September 2015
BSD-7010	Fence - Natural area - Chainwire fauna friendly fence	A	September

			2015
BSD-7011	Fence - Natural area - Chainwire handrail	A	September 2015
BSD-7012	Fence — Log barrier (600mm high)	C	March 2021
BSD-7013	Fence — Parks — Dressed hardwood barrier	B	March 2021
BSD-7021	Noise barrier fence 2.0m high - Post and paling	B	February 2016
BSD-7022	Noise barrier fence 2.0m high - Post and board	B	February 2016
BSD-7032	Gates - Dog off leash area - General notes - Sheet 1 of 2	D	June 2023
	Gates - Dog off leash area - Sheet 2 of 2	D	June 2023
BSD-7033	Gate - Natural area - Pedestrian entry - Sheet 1 of 3 - General notes	A	September 2015
	Gate - Natural area - Pedestrian entry - Sheet 2 of 3 - Details	A	September 2015
	Gate - Natural area - Pedestrian entry - Sheet 3 of 3 - Details	A	September 2015
BSD-7034	Gate - Natural area - Pedestrian entry with shelter - Sheet 1 of 2	A	September 2015
	Gate — Natural area — Pedestrian entry with shelter — Sheet 2 of 2	A	September 2015
BSD-7051	Entrance barriers — General notes	D	March 2021
BSD-7052	Entrance barrier - Single swing gate	Proposed	
BSD-7053	Entrance barrier — Double swing gate	B	March 2021
BSD-7054	Entrance barrier — Lockrail with steel posts	B	November 2019
BSD-7055	Entrance barrier - Lockrail with timber posts	A	May 2014
BSD-7056	Vehicle access gate - Natural area - Light duty	B	July 2019
BSD-7057	Vehicle access gate - Natural area - Medium duty	B	July 2019
BSD-7058	Vehicle access gate - Natural area - Heavy duty	B	July 2019

BSD-7059	Gate - Natural area - Locking boxes - Sheet 1 of 2	C	July 2019
	Gate - Natural area - Locking boxes - Sheet 2 of 2 - Details	A	September 2015
BSD-7070	Entrance barrier - Natural area - Small horse stile	B	July 2019
BSD-7071	Entrance barrier -Natural area - Large horse stile - Sheet 1 of 2	B	July 2019
	Entrance barrier - Natural area - Large horse stile - Sheet 2 of 2	A	September 2015
BSD-7091	Energy absorbing bollard guardrail end terminal & hazard protection	D	December 2023
BSD-7092	Park bollards and boundary markers - General notes	A	May 2014
BSD-7093	Bollard - Parks - Heritage, angle and dome-topped	C	June 2023
BSD-7094	Bollard - Parks and natural areas - Removable	A	May 2014
BSD-7095	Streetscape fixed bollard - Sheet 1 of 2	B	February 2016
	Streetscape fixed bollard - Assembly - Sheet 2 of 2	B	February 2016
BSD-7096	Streetscape removable bollard - Sheet 1 of 6	B	February 2016
	Streetscape removable bollard - Assembly - Sheet 2 of 6	B	February 2016
	Streetscape removable bollard - Base - Sheet 3 of 6 -	B	February 2016
	Streetscape removable bollard - Cover - Sheet 4 of 6	B	February 2016
	Streetscape removable bollard - Spring - Sheet 5 of 6 -	B	February 2016
	Streetscape removable bollard - Installation - Sheet 6 of 6	B	February 2016
BSD-7097	Streetscape - Fixed and removable bollard - Bollard logo badge	B	December 2017
BSD-7121	Road edge guide posts	A	May 2014
BSD-7122	Traffic sign standards (posts)	E	June 2023
BSD-7201	Standard seat - Assembly - Sheet 1 of 10	C	February 2016

	Standard seat - Frame assembly - Sheet 2 of 10	B	February 2016
	Standard seat - Outer spine (right) - Sheet 3 of 10	C	December 2017
	Standard seat - Inner spine - Sheet 4 of 10	C	December 2017
	Standard seat - Outer spine (left) - Sheet 5 of 10	C	December 2017
	Standard seat - Foot - Sheet 6 of 10	C	December 2017
	Standard seat - Rail - Sheet 7 of 10	C	December 2017
	Standard seat - Timber slats - Sheet 8 of 10	B	February 2016
	Standard seat - Logo badge - Sheet 9 of 10	C	December 2017
	Standard seat - Installation - Sheet 10 of 10	B	February 2016
BSD-7202	Public transport seat - Assembly - Sheet 1 of 10	C	February 2016
	Public transport seat - Frame assembly - Sheet 2 of 10	C	February 2016
	Public transport seat - Outer spine (right) - Sheet 3 of 10	C	December 2017
	Public transport seat - Inner spine - Sheet 4 of 10	C	December 2017
	Public transport seat - Outer spine (left) - Sheet 5 of 10	C	December 2017
	Public transport seat - Foot - Sheet 6 of 10	C	December 2017
	Public transport seat - Rail - Sheet 7 of 10	C	December 2017
	Public transport seat - Timber slats - Sheet 8 of 10	B	February 2016
	Public transport seat - Logo badge - Sheet 9 of 10	C	December 2017

	Public transport seat - Installation - Sheet 10 of 10	B	February 2016
BSD-7203	Bench - Assembly - Sheet 1 of 10	B	February 2016
	Bench - Frame assembly - Sheet 2 of 10	B	February 2016
	Bench - Outer spine (right) - Sheet 3 of 10	C	December 2017
	Bench - Inner spine - Sheet 4 of 10	C	December 2017
	Bench - Outer spine (left) - Sheet 5 of 10	C	December 2017
	Bench - Foot - Sheet 6 of 10	C	December 2017
	Bench - Rail - Sheet 7 of 10	C	December 2017
	Bench - Timber slats - Sheet 8 of 10	B	February 2016
	Bench - Logo badge - Sheet 9 of 10	C	December 2017
	Bench — Installation — Sheet 10 of 10	B	February 2016
BSD-7204	Urban stool — Sheet 1 of 5	E	March 2021
	Urban stool — Assembly — Sheet 2 of 5	E	March 2021
	Urban stool — Anchor — Sheet 3 of 5	E	March 2021
	Urban stool — Cap — Sheet 4 of 5	E	March 2021
	Urban stool — Installation — Sheet 5 of 5	E	March 2021
BSD-7205	Footing details for streetscape and public furniture items	B	June 2023
BSD-7302	Anodised - 240L — Alternate Aspect — Bin Unit Design - Sheet 1 of 2	C	February 2016
	Anodised - 240L — Alternate Aspect — Bin Unit Design -	D	December

	Sheet 2 of 2		2017
BSD-7305	Parks wheelie bin enclosure	A	May 2014
BSD-7307	Anodised - 340L - Alternate Aspect-Bin Unit Design - Sheet 1 of 2	Proposed	
	Anodised - 340L — Alternate Aspect-Bin Unit Design - Sheet 2 of 2	Proposed	
BSD-7331	Drinking fountain — Sheet 1 of 27	C	November 2018
	Drinking fountain — Assembly — Sheet 2 of 27	D	November 2018
	Drinking fountain — Plumbing — Sheet 3 of 27	D	November 2018
	Drinking fountain — Body — Sheet 4 of 27	D	November 2018
	Drinking fountain — Body details — Sheet 5 of 27	D	November 2018
	Drinking fountain — Body flat pattern — Sheet 6 of 27	D	November 2018
	Drinking fountain — Top plate — Sheet 7 of 27	D	November 2018
	Drinking fountain — Actuator arm — Sheet 8 of 27	D	November 2018
	Drinking fountain — Actuator — Sheet 9 of 27	D	November 2018
	Drinking fountain — Access panel — Sheet 10 of 27	D	November 2018
	Drinking fountain — Mouth piece — Sheet 11 of 27	D	November 2018
	Drinking fountain — Actuator arm bush — Sheet 12 of 27	D	November 2018
	Drinking fountain — Actuator bush — Sheet 13 of 27	D	November 2018
	Drinking fountain — Installation — Sheet 14 of 27	D	November 2018
	Drinking fountain — Body auxiliary views — Sheet 15 of 27	C	November 2018

	Drinking fountain — Bottle refill actuator — Sheet 16 of 27	C	November 2018
	Drinking fountain — Bottle refill outlet — Sheet 17 of 27	C	November 2018
	Drinking fountain — Vertical drain plate — Sheet 18 of 27	C	November 2018
	Drinking fountain — Vertical basin — Sheet 19 of 27	C	November 2018
	Drinking fountain — Valve mount — Sheet 20 of 27	C	November 2018
	Drinking fountain — Valve mount — Sheet 21 of 27	C	November 2018
	Drinking fountain — Logo badge — Sheet 22 of 27	D	November 2018
	Drinking fountain — Bill of materials — Sheet 23 of 27	C	November 2018
	Drinking fountain — Dog bowl actuator and nozzle — Sheet 24 of 27	A	November 2018
	Drinking fountain — Dog bowl — Sheet 25 of 27	A	November 2018
	Drinking fountain — Dog bowl recess/drain — Sheet 26 of 27	A	November 2018
	Drinking fountain — Dog bowl valve mount — Sheet 27 of 27	A	November 2018
8000 Series — Stormwater Drainage and Water Quality			
BSD-8001	Minimum pipe cover for construction loads — Steel reinforced concrete pipes	A	May 2014
BSD-8002	Minimum pipe cover for construction loads — Fibre reinforced concrete pipes	A	May 2014
BSD-8003	Construction loading typical detail requirements for long section drawings	C	March 2021
BSD-8011	Bedding methods for rigid and flexible drainage pipes	A	May 2014
BSD-8012	Deflection joint for concrete pipes	A	May 2014
BSD-8021	Stormwater maintenance hole details 1050 to 1500 diameter — To 3.0m deep	D	March 2021

BSD-8023	Maintenance hole roof slab 1350 to 1950 diameter	A	May 2014
BSD-8024	Maintenance hole roof slabs 1980 diameter extended 600 and 900	B	February 2016
BSD-8025	Reinforced concrete roof slabs for maintenance hole chambers	B	February 2016
BSD-8031	Maintenance hole frame (roadway and non-roadway) 1050 to 1500 diameter	B	February 2016
BSD-8032	Riser details (roadway)	A	May 2014
BSD-8033	Maintenance hole cover (roadway) 1050 to 1500 diameter	C	March 2021
BSD-8034	Maintenance hole cover (non-roadway) 1050 to 1500 diameter	C	March 2021
BSD-8035	Maintenance hole cover concrete infill (pedestrian traffic) 1050 to 1500 diameter	C	March 2021
BSD-8051	Type ‘A’ gully lip in line	D	March 2021
BSD-8052	Type ‘A’ gully kerb in line	D	March 2021
BSD-8053	Type ‘A’ gully grate	A	May 2014
BSD-8054	Type ‘A’ gully grate frame	A	May 2014
BSD-8055	Type 'A' gully (extended kerb inlet) precast concrete lintel (extended kerb inlet)	B	November 2018
BSD-8056	Type 'A' anti-ponding gully	C	March 2021
BSD-8057	Slimline type gully - Kerb-in-line - Sheet 1 of 2	B	December 2023
	Slimline type gully - Lip-in-line - Sheet 2 of 2	B	December 2023
BSD-8058	Type ‘E’ gully grates and frame (city type)	A	May 2014
BSD-8059	Surcharge gully	A	May 2014
BSD-8060	Steel gully basket — Size 1 (large) basket assembly — Sheet 1 of 8	B	December 2023
	Steel gully basket — Size 1 (large) basket layout details — Sheet 2 of 8	B	December 2023

	Steel gully basket — Size 2 (small) basket assembly — Sheet 3 of 8	B	December 2023
	Steel gully basket — Size 2 (small) basket layout details — Sheet 4 of 8	B	December 2023
	Steel gully basket — Size 3 (slimline) basket assembly — Sheet 5 of 8	B	December 2023
	Steel gully basket — Size 3 (slimline) basket layout details — Sheet 6 of 8	B	December 2023
	Steel gully basket — Basket support brackets and handle details — Sheet 7 of 8	B	December 2023
	Steel gully basket — Support rails (extensions) and installation details — Sheet 8 of 8	B	December 2023
BSD-8071	Hydraulic capture charts, lip in line gully on grade, type ‘D’ K&C, 2400mm lintel	B	February 2016
BSD-8072	Hydraulic capture charts, lip in line gully on grade, type ‘D’ K&C, 3600mm lintel	B	February 2016
BSD-8073	Hydraulic capture charts, lip in line gully on grade, type ‘D’ K&C, 4800mm lintel	B	February 2016
BSD-8074	Hydraulic capture charts, lip in line gully on grade, type ‘E’ K&C, 2400mm lintel	B	February 2016
BSD-8075	Hydraulic capture charts, lip in line gully on grade, type ‘E’ K&C, 3600mm lintel	B	February 2016
BSD-8076	Hydraulic capture charts, lip in line gully on grade, type ‘E’ K&C, 4800mm lintel	B	February 2016
BSD-8077	Hydraulic capture charts, lip in line gully, sag conditions, type ‘D’ K&C, all lintels	B	February 2016
BSD-8078	Hydraulic capture charts, lip in line gully, sag conditions, type ‘E’ K&C, all lintels	B	February 2016
BSD-8079	Hydraulic capture charts, kerb in line gully on grade, type ‘D’/’E’ K&C, 2400mm lintel	B	February 2016
BSD-8080	Hydraulic capture charts, kerb in line gully on grade, type ‘D’/’E’ K&C, 3600mm lintel	B	February 2016
BSD-8081	Hydraulic capture charts, kerb in line gully on grade, type ‘D’/’E’ K&C, 4800mm lintel	B	February 2016
BSD-8082	Hydraulic capture charts, kerb in line gully, sag conditions, type ‘D’/‘E’ K&C, all lintels	B	February 2016

BSD-8091	Field inlets Type 1 and Type 2	C	March 2021
BSD-8092	Field inlet dome top cover	C	November 2018
BSD-8094	Drain — Inlet pit with grate	B	July 2019
BSD-8101	Inlets and outlets (concrete) stormwater drains	A	May 2014
BSD-8102	Inlets and outlets (stonepitched) stormwater drains	A	May 2014
BSD-8103	Expansion and contraction joints for concrete lined open channels	A	May 2014
BSD-8104	Quantities for inlets and outlets	A	May 2014
BSD-8111	Roofwater drainage for low density residential subdivisions	C	July 2019
BSD-8112	Roofwater inspection maintenance holes for low density residential subdivisions	A	May 2014
BSD-8113	Roof and surface water drainage for site developments	B	November 2018
BSD-8114	Roofwater drainage connection (kerb adaptor installation)	C	June 2023
BSD-8115	Kerb adaptor testing jig construction details	A	May 2014
BSD-8301	Roadside swale types and typical sections	B	September 2015
BSD-8302	Grass swale (verge type) — Typical layout	B	September 2015
BSD-8305	Grass swale — Underdrain details	B	September 2015
BSD-8306	Grass swale — Field inlet details	B	September 2015
BSD-8312	Swale — Turf, gravel and dry creek	A	May 2014
BSD-8331	Stormwater Treatment Asset (STA) Pod (Verge type) - Layout	E	June 2023
BSD-8332	Stormwater Treatment Asset (STA) Bioretention Pod (Verge type) - Typical details	D	June 2023
BSD-8333	Stormwater Treatment Asset (STA) Bioretention Pod (Kerb buildout type) - Layout	D	June 2023
BSD-8334	Stormwater Treatment Asset (STA) Bioretention Pod (Kerb buildout type) - Typical details	D	June 2023

BSD-8335	Stormwater Treatment Asset (STA) Bioretention swale underdrain details	C	June 2023
BSD-8336	Stormwater Treatment Asset (STA) Bioretention swale field inlet details	B	June 2023
BSD-8337	Stormwater Treatment Asset (STA) Bioretention swale (Median type) field inlet detail	C	June 2023
BSD-8338	Stormwater Treatment Asset (STA) Bioretention swale carpark	B	June 2023
BSD-8339	Stormwater Treatment Asset (STA) Tree within turf plan	A	June 2023
BSD-8340	Stormwater Treatment Asset (STA) Tree within turf section	A	June 2023
BSD-8341	Stormwater Treatment Asset (STA) Street tree - Passive irrigation well	A	June 2023
BSD-8342	Stormwater Treatment Asset (STA) Street tree - Passive irrigation retrofit kerb inlet details	A	June 2023
9000 Series — Streetscape and Landscape			
BSD-9001	Tree planting within turf areas to footpath	A	May 2014
BSD-9002	Tree planting in pavement areas to footpath	A	May 2014
BSD-9003	Tree with companion planting bed to footpath	A	May 2014
BSD-9004	Podium planter details — Trees on podium detail	A	May 2014
BSD-9005	Tree planting within turf areas to medians	A	May 2014
BSD-9006	Tree and garden planting to medians	A	May 2014
BSD-9008	Tree pit with grate	B	December 2017
BSD-9009	Tree with porous paving	B	December 2017
BSD-9010	Tree trench — Type 1 suspended slab	B	December 2017
BSD-9011	Tree trench — Type 2 suspended slab	B	December 2017
BSD-9012	Tree trench — Type 3 structural cells	B	December 2017
BSD-9036	WSUD precast kerb inlet	Proposed	
BSD-9051	Planting - General notes — Sheet 1 of 2	Proposed	
	Planting - General notes — Sheet 1 of 2	A	May 2014

BSD-9052	Planting — Planting media profiles (turf and garden)	A	May 2014
BSD-9053	Planting — Typical tree, shrub & tubestock	A	May 2014
BSD-9054	Planting — Typical tree, shrub & tubestock on embankment	A	May 2014
BSD-9055	Planting — Carparks	A	May 2014
BSD-9061	Edging - General notes - Sheet 1 of 3	B	February 2016
	Edging — Edging options — Sheet 2 of 3	B	February 2016
	Edging — Edging options — Sheet 3 of 3	B	February 2016
BSD-9062	Edging - Typical interfaces	Interim Release	May 2014
BSD-9071	Tree grate — Setout plan — Sheet 1 of 3	C	July 2019
	Tree grate — Details — Sheet 2 of 3	C	July 2019
	Tree grate — Sub-frame details — Sheet 3 of 3	D	July 2019
BSD-9072	Tree guard — Assembly — Sheet 1 of 8	B	February 2016
	Tree guard — No 1 upright — Sheet 2 of 8	C	December 2017
	Tree guard — No 2 upright — Sheet 3 of 8	C	December 2017
	Tree guard — No 3 upright — Sheet 4 of 8	C	December 2017
	Tree guard — No 4 upright — Sheet 5 of 8	C	December 2017
	Tree guard — Panel — Sheet 6 of 8	C	December 2017
	Tree guard — Logo panel — Sheet 7 of 8	B	February 2016
	Tree guard — Installation — Sheet 8 of 8	B	February 2016
BSD-9081	Structural root zone	B	June 2023
BSD-9082	Root deflector installation adjacent to existing road and structures	A	May 2014

BSD-9083	Installation of service trench adjacent to a tree	B	June 2023
BSD-9084	Guidelines for gantry treatments at tree locations	A	May 2014
BSD-9085	Provision for tree roots under concrete paths, driveways and bikepaths	A	June 2023
BSD-9302	Retaining wall — sleeper	A	May 2014
BSD-9303	Retaining wall — boulder	A	May 2014
BSD-9307	Free-standing stone wall	A	May 2014
10000 Series — Park and Natural Area Facilities			
BSD-10001	Parks and Natural Areas — Standard drawings — General notes	Proposed	
BSD-10002	Notes on Park drawings and alternate series locations	Proposed	
BSD-10101	Picnic node - Siting plan	A	May 2014
BSD-10116	Bench seat — Natural area	A	September 2015
BSD-10117	Bench seat with backrest — Natural area	B	July 2019
BSD-10121	Picnic table — Sheet 1 of 2 — General notes	Proposed	
	Picnic table — Sheet 2 of 2	Proposed	
BSD-10122	Picnic table — Wheelchair accessible	Proposed	
BSD-10123	Picnic table — Natural area	A	September 2015
BSD-10124	Picnic table — Natural area — Setout detail	A	September 2015
BSD-10125	Platform table	Proposed	
BSD-10126	Platform table — Natural area	B	September 2015
BSD-10131	Hip roof shelters - Park - Structural notes (Page 1 of 2) - Sheet 1 of 7	C	February 2016

	Hip roof shelters - Park - Structural notes (Page 2 of 2) - Sheet 2 of 7	C	February 2016
	Hip roof shelters - Park - Square shelters - Plan and details - Sheet 3 of 7	C	February 2016
	Hip roof shelters - Park - Rectangular shelters - Plan and details - Sheet 4 of 7	C	February 2016
	Hip roof shelters - Park - Optional annex - Plan and details - Sheet 5 of 7	C	February 2016
	Hip roof shelters - Park - Details - Sheet 6 of 7	C	February 2016
	Hip roof shelters - Park - Details - Sheet 7 of 7	C	February 2016
BSD-10132	Skillion Roof Shelter - Park - Structural notes (Page 1 of 2) - Sheet 1 of 5	C	February 2016
	Skillion Roof Shelter - Park - Structural notes (Page 2 of 2)- Sheet 2 of 5	C	February 2016
	Skillion Roof Shelter - Park - Plan and details - Sheet 3 of 5	C	February 2016
	Skillion Roof Shelter - Park - Details - Sheet 4 of 5	C	February 2016
	Skillion Roof Shelter - Park - Details - Sheet 5 of 5	C	February 2016
BSD-10133	Roof Shelters - Park - Hybrid lightning protection system	B	February 2016
BSD-10141	Small Shelter - Natural area - Plan - Sheet 1 of 2	A	September 2015
	Small Shelter — Natural area - Elevation and section - Sheet 2 of 2	A	September 2015
BSD-10142	Medium/large shelter - Natural area - Plan - Sheet 1 of 2	A	September 2015
	Medium/large shelter - Natural area - Elevation and section - Sheet 2 of 2	A	September 2015
BSD-10143	Large shelter - Natural area - Plan - Sheet 1 of 2	A	September 2015
	Large shelter - Natural area - Elevation and section - Sheet 2 of 2	A	September 2015

BSD-10144	Small information shelter - Natural area	B	February 2016
BSD-10145	Small/Medium/Large shelters - Natural area - General notes - Sheet 1 of 5	A	September 2015
	Small/Medium/Large shelters - Natural area - General notes - Sheet 2 of 5	A	September 2015
	Small/Medium/Large shelters - Natural area - Details - Sheet 3 of 5	A	September 2015
	Small/Medium/Large shelters - Natural area - Screen details - Sheet 4 of 5	A	September 2015
	Small/Medium/Large shelters - Natural area - Screen details - Sheet 5 of 5	A	September 2015
BSD-10146	Sign shelter - Natural area - General notes - Sheet 1 of 3	A	September 2015
	Sign shelter - Natural area - Plan - Sheet 2 of 3	A	September 2015
	Sign shelter - Natural area - Section and elevation - Sheet 3 of 3	A	September 2015
BSD-10147	Barbeque shelter - Natural area - General notes - Sheet 1 of 3	A	September 2015
	Barbeque shelter - Natural area - Plan - Sheet 2 of 3	A	September 2015
	Barbeque shelter - Natural area - Elevation and section - Sheet 3 of 3	A	September 2015
BSD-10211	Basketball halfcourt - General notes - Sheet 1 of 2	B	February 2016
	Basketball halfcourt - Plans and post details - Sheet 2 of 2	C	July 2019
BSD-10212	Cricket practice net — Plans and sections — Sheet 1 of 3	B	February 2016
	Cricket pitch — Plans and sections — Sheet 2 of 3	B	February 2016
	Cricket pitch and nets — Notes and specifications — Sheet 3 of 3	B	February 2016
BSD-10218	Tennis rebound wall - General notes - Sheet 1 of 3	B	February 2016
	Tennis rebound wall - Plan - Sheet 2 of 3	B	February

			2016
	Tennis rebound wall — Section — Sheet 3 of 3	B	February 2016
BSD-10262	Fish cleaning table - Notes and elevation - Sheet 1 of 2	A	September 2015
	Fish cleaning table - Details - Sheet 2 of 2	C	July 2019
BSD-10281	Dog off leash areas — general arrangement & layout — Sheet 1 of 2	B	March 2021
	Dog off leash areas — general arrangement & siting notes — Sheet 2 of 2	B	March 2021
BSD-10305	Taps — general notes	Proposed	
BSD-10306	Taps — Water tap and bubbler with dog bowl	B	July 2019
BSD-10307	Taps — Maintenance	B	July 2019
BSD-10351	Bushfire water supply shelter type 1 - Natural area - Notes - Sheet 1 of 3	A	September 2015
	Bushfire water supply shelter type 1 - Natural area - Plan - Sheet 2 of 3	A	September 2015
	Bushfire water supply shelter type 1 - Natural area - Details - Sheet 3 of 3	A	September 2015
BSD-10352	Bushfire water supply shelter type 2 - Natural area - Notes - Sheet 1 of 3	A	September 2015
	Bushfire water supply shelter type 2 - Natural area - Plan - Sheet 2 of 3	A	September 2015
	Bushfire water supply shelter type 2 - Natural area - Details - Sheet 3 of 3	A	September 2015
BSD-10353	Bushfire water supply shelter - Natural area - Overhead filler	A	September 2015
BSD-10360	Horse trough - Natural area - Plan and notes	A	September 2015
BSD-10401	Local playgrounds — Siting plan	A	May 2014

BSD-10402	Playground design principals	A	May 2014
BSD-10420	Playground undersurfacing	A	May 2014
BSD-10421	Undersurfacing — Wet pour rubber	Proposed	
BSD-10422	Undersurfacing — Artificial turf	Proposed	
BSD-10423	Undersurfacing — Soft fall materials (sand, rubber, bark)	Proposed	
BSD-10501	Park Signage - General Structural Notes - Sheet 1 of 2	A	September 2015
	Park Signage - General Structural Notes - Sheet 2 of 2	A	September 2015
BSD-10502	Parks Signage - Typical Installation Details and Notes	A	September 2015
BSD-10503	Parks Signage - Graphic Notes	A	September 2015
BSD-10504	Parks Signage - Standard Sizes and Example Layouts	A	September 2015
BSD-10505	Park Podium Interpretive Signage	A	September 2015
BSD-10506	Park signage - Ordinance	A	September 2015
BSD-10507	Park signage pictogram suite - Sheet 1 of 2	A	September 2015
	Park signage pictogram suite - Sheet 2 of 2	A	September 2015
BSD-10508	Park Node Signage - General Notes - Sheet 1 of 4	A	September 2015
	Park Node Signage - Graphic Notes - Sheet 2 of 4	A	September 2015
	Park Node Signage - Example Layouts - Sheet 3 of 4	A	September 2015
	Park Node Signage - Dog Off Leash Sign Detail - Sheet 4 of 4	B	July 2019

BSD-10509	Park Directional Signage - Typical Installation Details - Sheet 1 of 4	A	September 2015
	Park Directional Signage - Graphic Notes - Sheet 2 of 4	A	September 2015
	Park Directional Signage - Graphic Setout Details - Sheet 3 of 4	A	September 2015
	Park Directional Signage - Typical Layouts - Sheet 4 of 4	A	September 2015
BSD-10510	Park Name Signage — General Structural Notes — Sheet 1 of 6	A	September 2015
	Park Name Signage — General Structural Notes — Sheet 2 of 6	A	September 2015
	Park Name Signage — Graphic Notes — Sheet 3 of 6	A	September 2015
	Park Name Signage — Graphic Setout Details — Sheet 4 of 6	A	September 2015
	Park Name Signage — Horizontal - Standard — Sheet 5 of 6	A	September 2015
	Park Name Signage — Vertical - Alternative — Sheet 6 of 6	A	September 2015
BSD-10511	Descriptive sign - Natural area - Entry sign - Sheet 1 of 3	A	September 2015
	Descriptive sign - Natural area - Name sign - Sheet 2 of 3	A	September 2015
	Descriptive sign - Natural area — Sign Layout - Sheet 3 of 3	A	September 2015
BSD-10512	Advisory sign - Natural area - Wayfinding	A	September 2015
BSD-10514	Advisory sign - Natural area — Totem	A	September 2015
BSD-10515	Advisory sign - Natural area - Track commencement - Sheet 1 of 2 - A1	A	September 2015
	Advisory sign - Natural area - Track commencement - Sheet 2 of 2 - A2	A	September 2015
BSD-10516	Advisory sign - Natural area - Directional	A	September 2015

BSD-10521	Interpretive sign - Natural area - Trackside	A	September 2015
BSD-10701	Toilet block — Siting plan	A	May 2014
BSD-10740	Internal asphalt road/car park	A	May 2014
11000 Series — Electrical Facilities and Installations			
BSD-11001	Pedestrian lighting —Type 1 main switchboard and control panel arrangement and schematic — Sheet 1 of 2	B	November 2019
	Pedestrian lighting — Type 2 main switchboard and control panel arrangement and schematic — Sheet 2 of 2	B	November 2019
BSD-11002	Pedestrian lighting control panel arrangement and schematic	C	December 2023
BSD-11003	Pedestrian lighting M6 earthing stud detail and light site component schedule	B	November 2019
BSD-11004	3m Pedestrian light-pole — Main assembly — Sheet 1 of 8	C	March 2021
	3m Pedestrian light-pole — Main body — Sheet 2 of 8	C	March 2021
	3m Pedestrian light-pole — Main body details — Sheet 3 of 8	C	March 2021
	3m Pedestrian light-pole — Access hatch — Sheet 4 of 8	C	March 2021
	3m Pedestrian light-pole — Curved logo badge — Sheet 5 of 8	C	March 2021
	3m Pedestrian light-pole — Side entry spigot — Sheet 6 of 8	C	March 2021
	3m Pedestrian light-pole — Installation on new footing — Sheet 7 of 8	C	March 2021
	3m Pedestrian light-pole — Installation on existing footing — Sheet 8 of 8	C	March 2021
BSD-11005	5m Pedestrian light-pole — Main assembly — Sheet 1 of 7	A	March 2021
	5m Pedestrian light-pole — Main body — Sheet 2 of 7	A	March 2021
	5m Pedestrian light-pole — Main body details — Sheet 3 of 7	A	March

			2021
	5m Pedestrian light-pole — Access hatch — Sheet 4 of 7	A	March 2021
	5m Pedestrian light-pole — Curved logo badge — Sheet 5 of 7	A	March 2021
	5m Pedestrian light-pole — Side entry spigot — Sheet 6 of 7	A	March 2021
	5m Pedestrian light-pole — Installation on new footing — Sheet 7 of 7	A	March 2021
BSD-11006	Brisbane City Council Public lighting poles numbering and identification - Metal poles - Details - Sheet 1 of 2	A	June 2023
	Brisbane City Council Public lighting poles numbering and identification - Timber poles - Details - Sheet 2 of 2	A	June 2023
BSD-11031	Typical requirements for lighting of off-road shared & bicycle paths	D	March 2021
BSD-11032	Typical requirements for solar LED markers: off-road shared/bicycle paths	A	May 2014
BSD-11101	Parks main switchboard — Underground supply — Details — Sheet 1 of 4	A	March 2021
	Parks main switchboard — Underground supply — Installation — Sheet 2 of 4	A	March 2021
	Parks main switchboard — Overhead supply — Details — Sheet 3 of 4	A	March 2021
	Parks main switchboard — Overhead supply — Installation — Sheet 4 of 4	A	March 2021
BSD-11121	BBQs — General	Proposed	
BSD-11122	Gas BBQ	Proposed	
BSD-11123	BCC Standard Electric Single BBQ — Sheet 1 of 4	C	March 2021
	BCC Standard Electric Double BBQ — Sheet 2 of 4	C	March 2021
	BCC Standard BBQ Switch boxes section & side view — Sheet 3 of 4	C	March 2021
	BCC Standard BBQ Switch boxes equipment & circuit layout	C	March

	— Sheet 4 of 4		2021

1.1.4.2 Reference specifications

1. Reference specifications identified in Table 1.1.4.B form part of this planning scheme policy.
2. Reference specifications are referenced in the planning scheme.
3. Infrastructure design is to consider all relevant reference specifications, including those for related and interfacing infrastructure components.

Table 1.1.4.B—Reference specifications

Specification Number	Specification Title	Revision Number	Revision Date
S110	General Requirements	2.0	March 2021
S120	Quality	4.0	March 2021
S140	Earthworks	5.0	March 2021
S145	Installation and Maintenance of Utility Services	3.0	March 2021
S150	Roadworks	7.0	March 2021
S154	Traffic Signs and Associated Roadside Furniture	4.0	March 2021
S155	Road Pavement Markings	5.0	March 2021
S156	Solar Road and Bikeway Markers	3.0	March 2021
S160	Drainage	8.0	March 2021
S170	Stonework	3.0	March 2021
S180	Unit Paving	3.0	March 2021
S190	Landscaping	3.0	March 2021
S200	Concrete Work	5.0	March 2021
S205	Centres Honed Concrete Paths	5.0	March 2021
S210	Masonry	3.0	March 2021
S220	Woodwork	3.0	March 2021
S230	Structural Steel	3.0	March 2021

S240	Coatings	3.0	March 2021
S300	Quarry Products	4.0	March 2021
S310	Supply of Dense Graded Asphalt	5.0	March 2021
S320	Laying of Asphalt	5.0	March 2021
S330	Sprayed Bituminous Surfacing	5.0	March 2021
S335	Polymer Modified Emulsion Surface Treatment	3.0	March 2021
S336	Polymer Modified Emulsion Micro-Surfacing Treatment	3.0	March 2021
S605	Traffic Signal Hardware — Pits & Lids	3.0	March 2021
S606	Traffic Signal Hardware — Poles, Mast Arms & Columns	3.0	March 2021
S607	Traffic Signal Hardware — Rag Bolts	3.0	March 2021
S710	Solid State Lighting (SSL) Luminaire Installation	1.0	March 2021

1.2 Application of Chapter 1

1. This chapter of the planning scheme policy states the following for all types of infrastructure:
   a. advice about satisfying assessment benchmarks in the planning scheme;
   b. the information that the Council may request to be supplied for a development application.
2. Users are referred to this chapter as a starting point in order to determine the necessary inputs and information to support, document and endorse infrastructure design elements.

1.3 Infrastructure design reports

1.3.1 General

1. This section provides guidance for applicants in the preparation of an infrastructure design report to support a development application and other related requirements.
2. A suitably qualified Registered Professional Engineer Queensland must certify all

engineering-related aspects of the submission.

1.3.2 Infrastructure design report

1. All reports must include the following information in addition to other identified reporting requirements:
   a. the property address, site details and development name (if applicable);
   b. details of any previous or associated reports or approvals including development application reference numbers;
   c. objectives and purpose of the report;
   d. a description of the development proposal and background details;
   e. a description of the assessment methodology used, including justification and any limitations or assumptions and the accuracy of the data;
   f. discussion of any sensitivity analyses undertaken for the proposal, including identification and justification of the adopted parameters or results;
   g. the author's name and qualifications and signed/certified by a suitably qualified Registered Professional Engineer Queensland or accredited specialist;
   h. the date and version number of the report clearly presented on a document control page at the start of the report;
   i. conclusions that summarise the analysis results and findings and any impacts created by the proposal, including a clear statement as to why the proposed development should be approved or refused;
   j. a listing of all references used, and if the reference is obscure, relevant sections of the source material must be included;
   k. a locality plan;
   l. a site plan describing the site in its existing state;
   m. a proposal plan describing the proposed works, including staging.
2. Site plans and proposal plans must show and clearly distinguish between existing and proposed ground levels and surface treatments, and the source of ground survey data is to be clearly identified.
3. The level of detail required to describe the proposed works varies depending on the type of development approval sought.
4. Reports submitted in support of applications for operational work or building work must refer to engineering drawings that define the proposed works.
5. Requirements for engineering drawings are stated in section 1.5.

1.3.3 Geotechnical assessment

The report covers stability and erodility issues, including, but not limited to:
   a. Visual aspects of the site.
   b. Conditions of the area.
   c. Soil characterisation.
   d. Probability of slip failure.
   e. Factor of safety.
   f. Impacts of development on surface water runoff.
   g. Measures to mitigate soil movement.

h. Recommendations.

1.4 Hydrologic and hydraulic assessments and models

1.4.1 General

1. Hydrologic and hydraulic assessments are required to support a development application where the applicant is required to estimate catchment flows, flood levels and demonstrate that the development and any flood mitigation works would not adversely impact on flooding to upstream, downstream or adjacent premises.
2. The assessment must be supervised and certified by a Registered Professional Engineer Queensland with demonstrated expertise in hydrology, hydraulic modelling and stormwater engineering.
3. Copyright for designs, models, data and studies to be granted to Council.
4. The impact of staging works is to be incorporated to ensure adequate flood immunity is provided.
5. Basic report requirements:
    a. references;
    b. justified methodology and use of model, model type;
    c. sensitivity analysis and parameters;
    d. verification of results (alternate method/quick checks).

1.4.2 Hydrologic and hydraulic assessment report

1. The report must include (where applicable):
    a. a site survey plan showing the location of buildings and underground stormwater infrastructure (line and level);
    b. a catchment plan detailing internal and external drainage catchments and their respective areas;
    c. the location, final surface levels and details of drainage easements associated with underground drainage, open channel drainage and overland flow paths;
    d. a scaled drawing showing the model layout (cross sections) or digital elevation model (DEM) over a cadastral background, also noting details of relevant structures (hydraulic controls);
    e. scaled drawings showing a comparison of existing and proposed extents of flood inundation;
    f. flood afflux and Manning's roughness maps, when using 2D-modelling techniques;
    g. detailed plans for any proposed waterway structures;
    h. detailed earthworks plans for any channel works and flow-path modifications proposed by the development;
    i. the location of waterway corridors;
    j. cross-sections of existing and proposed embankments, spillways and any other inlet and outlet structures;
    k. location of public utilities;
    l. the impact of storm surge and climate change consistent with Australian Rainfall and Runoff and Queensland Urban Drainage Manual Guidelines;

m. maps showing:
   i. depth x velocity
   ii. depth of inundation.

1.4.3 Choice of models

1. Mathematical modelling software packages that are considered 'industry standard' in Australia is acceptable.
2. The choice of model must be appropriate for the type of analysis and the complexity of the site or drainage network being modelled.

1.4.4 2D flood modelling techniques

1. Hydraulic conveyance is a measure of the flow carrying capacity of a watercourse and is a function of the geometry and surface impedance of that watercourse. The loss of conveyance from obstruction or filling is usually characterised by increases in flood levels upstream.
2. Mathematical models are used to assess the impacts on flood flow conveyance when adverse impacts are being assessed such as the HEC-RAS steady/unsteady state hydraulic model or MIKE-11 hydrodynamic model.
3. As floodwaters flowing in a watercourse rise during a flood event and overtop banks, a portion of floodwaters is transferred into storage areas of the floodplain where the flow velocities are small in comparison with the main channel. The loss of critical flood storage from obstruction or filling is usually characterised by increases in flow velocities and flood levels downstream. Mathematical models that are appropriate to assess the impacts of flood and flood storage are to be fully dynamic 1D/2D hydraulic models such as MIKEFLOOD, Mike-21, SOBEK and TUFLOW.
4. A 2D-modelling technique is used where flow paths cannot be adequately represented using 1D-modelling techniques which is often the case with overland flow flooding or where demonstrating the impacts of proposals that impact on flood storage or where compensatory earthworks are required.
5. The use of LIDAR survey will be acceptable for such analysis, particularly for areas outside of the subject site where it can be demonstrated to be of adequate accuracy. However, critical hydraulic controls must be surveyed. Where sections of the floodplain contain channels that could be represented by 1D-modelling techniques it is desirable to use an integrated 1D/2D-modelling technique where survey cross-sections can be integrated into the 2D grid.
6. Where the survey is converted into a DEM for use in a 2D hydraulic model, the grid size of 2D models must be selected to meet the objectives of the study which may include suitable simulation times, appropriate hydraulic resolution of key areas and flow conditions. The adopted grid size must be justified.
7. At a minimum, all 2D flood analysis of existing and developed conditions must provide for:
   a. a map of DEM showing any obstructions/blockages;
   b. a Manning’s roughness map;
   c. flood depth maps with velocity vectors to visually indicate the conveyance versus storage areas of the floodplain;
   d. flood afflux maps to show flood level impacts;

e. depth x velocity maps and depth of inundation maps to show areas of low and high hazard;
f. overland flows with all openings clear of debris and overland flows when openings less than 3m x 5m are 100% blocked.

1.4.5 Hydrological model parameters and assumptions

1. The report must justify the basis of the values adopted for the hydrologic modelling parameters used in the analysis.
2. Parameters to be considered include, but are not limited to:
   a. rainfall loss values;
   b. sub-catchment fraction imperviousness (development assumptions);
   c. flow velocity and time of concentration estimates;
   d. Manning's 'n' roughness values in relation to land use;
   e. structure capacity and hydraulic head loss assumptions (HGL analysis);
   f. capacity of culverts considering inlet/outlet control
   g. contraction and expansion losses;
   h. eddy—viscosity values
   i. routing parameters.

1.5 Design plans, drawings and figures

1.5.1 General

This section provides guidance in the preparation of engineering, architectural and landscape drawings and plans as part of any submission to support a development application, including operational work.

1.5.2 Standards

Drafting must be of a standard that is acceptable for construction in civil engineering and architectural practice, in accordance with the requirements of AS 1100.101-1992 Technical drawing - General principles.

1.5.3 Content of drawings

1. All engineering drawings must be uniquely referenced and require the full signature of a Registered Professional Engineer Queensland, number, and date, in the title block.
2. The leading drawing of the set of drawings must contain the following information:
   a. Council file reference number;
   b. site address (consistent with the application);
   c. locality plan, clearly showing the stage boundary and adjacent stages if applicable;
   d. drawing index, including drawings for other stages if applicable;
   e. list of all Council standard drawings used;
   f. list of all consultant's standard drawings used (copies to be attached);
   g. full legend;
   h. asset register.

1.5.4 Scales

1. The chosen scale for a drawing must permit easy and clear interpretation of the information depicted.
3. If full-size drawings are reduced, appropriate block/graduated or prefix scales must be provided to enable the interpretation of dimensions specified in the reduction copies.
3. The preferred scales for use must conform to the recommendations of AS 1100.101-1992 Technical drawing - General principles.
4. The recommended scales are 1:1, 1:2, 1:5 and multiplying the aforementioned scales by integral powers of 10.
5. Multiples and submultiples of 10 for scales 1:25 and 1:125 are not preferred.
6. Unless specified elsewhere in this planning scheme policy, the following scales are suggested for particular uses but these may be varied as appropriate to the works concerned:
    a. Plans — 1:1000 or 1:500 (roof-water reticulation layout plans should be drawn in the 1:500 scale);
    b. longitudinal sections —
        i. horizontal 1:1000 and vertical 1:100; or
        ii. horizontal 1:500 and vertical 1:50.
    c. intersection details — 1:200, 1:100 or 1:250;
    d. cross-sections — 1:100;
    e. engineering details — 1:20 or 1:10.
7. A north point and legend is to be shown on all drawings.

1.5.5 Survey datum

1. Level information must be referenced to the Australian Height Datum.
2. Position coordinates must be tied to the GDA94 datum based on the Mapping Grid of Australia coordinate system.
3. Generally, only certified survey information from a registered surveyor is accepted.

1.5.6 Dimensions

1. All dimensions are to be expressed in metric units.
2. Linear dimensions on all roadworks drawings must be in metres (m), with the exception of some detailed drawings of small structures (such as maintenance holes, access chambers) and some standard drawings (such as kerb and channel), which may be in millimetres (mm).
3. Reduced levels of benchmarks and reference pegs including permanent survey marks must be expressed to 3 decimal places (such as 0.001m).
4. Reduced levels of roadworks and stormwater drainage must be expressed rounded to 3 decimal places (such as 0.001m).
5. Chainages on drawings must be expressed to 3 decimal places (such as 0.001m).
6. Road cross-sections must be provided at 20m intervals, with further subdivision of 10m to 5m intervals where necessary at horizontal or vertical curvatures.

7. Road and pipe grades must be shown to 3 significant figures (such as 2.365%).

1.6 Detailed landscape plans

1.6.1 General

1. Detailed landscape plans must be prepared by a suitably qualified and experienced landscape architect or designer.
2. The purpose of these plans is to detail streetscape works or parks embellishments.

1.6.2 Street planting

Detailed landscape plans for landscaping of the verge must show the following information at a minimum:

a. road layout with property boundaries and lot numbers;
b. road names;
c. the extent of proposed streetscape works;
d. proposed paving material, patterns and colours;
e. proposed position and number of street furniture and pedestrian lights;
f. all finished surface levels;
g. all proposed and existing services in the footpath;
h. proposed artwork, balustrades, and any other structures;
i. proposed garden bed and street tree planting schedule of species and layout;
j. a full specification and details of the proposed treatment;
k. if required, a full specification of the footpath construction, landscaping and tree planting within a road reserve including roundabouts, speed control devices, and traffic islands;
l. existing trees (including diameter at breast height — DBH, canopy spread and species name) on site that will be retained;
m. the exact location of water meters and taps, if required;
n. the position of a temporary irrigation system for the duration of the maintenance period;
o. general detail of planting holes including mulch type and depth, location of weed mat, depth and type of soil mix, root barrier, detail of drainage layers;
p. the area (m^2) of landscaping must be shown on the asset register;
q. any landscaping associated with structural features such as acoustic fencing, entrance features and street furniture.

1.6.3 Park embellishment

1. Detailed landscape plans pertaining to park embellishment are required to show existing and proposed details including but not limited to:
   a. plans and sections;
   b. contours and levels;
   c. existing vegetation and vegetation protection and management provisions
   d. existing natural features to be retained and protected (such as wetlands, waterways and rock formations);
   e. details of proposed hard and soft landscape construction works (such as details of a planting plan, plant species schedule, surface treatments and structures);
   f. details of manufacturer and type of park equipment (such as play equipment and

furniture) to be used;
g. the location of any stormwater quality management infrastructure to be constructed in the park including maintenance access to the infrastructure.

2. Details of other works proposed in the park, which do not form part of the detailed landscape plan, must be referred to on the plan (such as vegetation management, rehabilitation and environmental management plans).
3. The design and management of the park must be incorporated into the erosion and sediment control plan (where relevant to conditions of a development approval).

1.7 Arborist reports and vegetation plans

1.7.1 General

1. All arborist reports and vegetation plans must be prepared by a suitably qualified and experienced person with minimum AQF Level 5/Diploma in Arboriculture and at least 5 years post graduate experience in arboriculture principles and practices including tree hazard assessment and reporting.
2. The person commissioned to carry out the report must also have adequate professional indemnity insurance (to $10,000,000) and provide a current certificate to that effect.

Note—Consideration may need to be given to vegetation protected by other mechanisms such as local laws.

1.7.2 Arborist report

The following information is required in an arborist report:

a. name, address telephone number, a qualification and experience of the arborist carrying out the inspection and reporting;
b. address of the site containing the trees in question;
c. who the report was prepared for, and the report brief;
d. the date of the inspection;
e. abstract or summary of the report;
f. methods and techniques used in the inspection;
g. plans to scale that accurately show:
    i. property boundaries (preferably based on cadastral boundaries);
    ii. north point and major landmarks for orientation;
    iii. location of the trees on the subject site and any adjoining trees which may be affected by the proposed activities, referenced by number in the written report;
h. development application plans to show the proposed development including services, driveways, and any alteration to existing site levels and drainage;
i. plans to show tree protection zones and correspond to a description of tree protection in the report;
j. the scientific and common name, age class, height, crown spread (from north to south if possible), DBH, health and condition of each tree;
k. tree protection measures as required, including a post-construction tree maintenance program;
l. discussion and hazard analysis of the data collected — this may include detailed

information regarding wounds, cavities, cracks, splits, forking, root zone, pests and diseases;
m. conclusion;
n. recommendations, including discussion of all options and the rationale for selection of a preferred option;
o. supporting evidence such as photographs, test results and statements where appropriate;
p. sources of information referred to in the report;
q. any caveats and limitations of service.

1.7.3 Vegetation survey

1. A vegetation survey is to comprise the following:
   a. a scaled plan (A3 size and minimum scale of 1:500 preferred);
   b. a referenced table providing information on the vegetation;
   c. an on-site vegetation referencing system.
2. A vegetation survey documents the following:
   a. all individual trees greater than 150mm DBH that are located on the development site, including an accurate and scaled representation of the canopy spread of a tree;
   b. if there are large areas of vegetation, specify the extent and structure of each vegetation community, including areas of vegetation communities that do not reach the 150mm threshold (e.g. regrowth communities or wetlands);
   c. all vegetation, including shrubbery, which enhances the landscape character of the site outside of the proposed development footprint;
   d. all vegetation growing on adjacent properties, including the road reserve, that impacts on or is directly impacted on by works on the site;
   e. the vegetation to be retained, pruned or removed.
3. The vegetation table must reference the following:
   a. botanical and common names;
   b. height, spread of canopy, and DBH;
   c. condition;
   d. habitat features.

1.7.4 Vegetation retention plan

1. A vegetation retention plan includes vegetation identified in the vegetation survey overlayed with the proposed development layout (including earthworks, services and other infrastructure) on a scaled plan.
2. A vegetation retention plan identifies how vegetation is to be removed and retained and demonstrates how the design will minimise vegetation loss and mitigate construction impacts thereby maximising vegetation retention.
3. A vegetation retention plan is a minimum A3 size, shows detail at a scale of 1:500 or better, includes inset diagrams where necessary, and has an easily distinguishable legend.
4. A vegetation retention plan shows:
   a. an indicative cut-and-fill plan to demonstrate that any trees nominated for retention can be retained;
   b. locations and depths for all existing and proposed services, including sewer, water,

stormwater treatment devices, electricity and communication;
c. detailed design of all civil works;
d. maximum vegetation retention.

5. The vegetation survey and vegetation retention plan can be combined on a single document if legibility is not affected.

1.7.5 Vegetation management plan

An arboriculture impact report and vegetation management plan that documents the impacts of development on vegetation to be retained is prepared by a suitably qualified arborist in accordance with AS 4970-2009 Protection of trees on development sites.

1.7.6 Vegetation rehabilitation plan

This section is left intentionally blank.

1.8 Earthworks drawings

Earthworks drawings show the following information:

a. contaminated soil areas;
b. existing surface contours and levels;
c. finished surface contours and levels;
d. areas of cut;
e. areas of fill including any requirement for imported fill;
f. slopes of cut batters and fill embankments;
g. location and height of any earth-retaining structures, such as boulder walls, concrete retaining walls and crib walls;
h. access to properties where crossfall of lots is severe;
i. if lots are to be filled to provide flood immunity, details of minimum habitable floor levels;
j. locations of soil stockpiles;
k. methods for dust control;
l. areas subject to a vegetation protection order under a local law;
m. if cut-and-fill operations are near a boundary with an adjoining private property or a public space, cross-sections showing the finished levels and positions in relation to the property boundaries including the surface levels and any structures in the adjoining land;
n. details of a proposed ground anchoring system;
o. erosion and sediment and control measures required until earthworks are rehabilitated.

1.9 Roads drawings and reports

1.9.1 Layout

Road layout drawings show the following information:

a. legend;
b. road reserve boundaries including any widening, and road identification;
c. lot boundaries with proposed lot number;
d. road centre-line, chainages, and bearings including chainages and centre-line of intersecting streets;

e. dimensioned road reserve, verge, carriageway and footpath widths;
f. location of existing services;
g. proposed contours;
h. proposed easements;
i. stage boundaries;
j. horizontal curve data;
k. traffic islands;
l. concrete footpaths;
m. on-road bicycle lanes and off-road bicycle paths;
n. cut-off drains;
o. water quality treatment devices
p. street trees and gardens
q. vehicular crossings;
r. areas of paver/stencil concrete treatment;
s. side drains;
t. location of guardrails and fences;
u. pavement tapers.

1.9.2 Longitudinal sections

Road longitudinal section drawings show the following information:

a. chainages;
b. existing surface levels;
c. design road centre-line;
d. design kerb lip levels;
e. cut and fill depths and volumes;
f. grades;
g. chainages and levels of grade intersection points;
h. chainages and levels of tangent points of vertical curves;
i. chainages and levels of crest and sag points;
j. lengths and radii of vertical curves;
k. super-elevated curves;
l. minimum pavement thicknesses including base, sub-base and asphalt thicknesses and types;
m. scales;
n. road names;
o. datum.

1.9.3 Cross-sections

Drawings for typical road cross-sections show the following information:

a. road reserve width;
b. carriageway widths;
c. verge widths;
d. crossfall of pavement and verge;
e. pavement under kerb and channel, shoulder and traffic islands;
f. existing services and proposed services;

g. type of kerb and channel;
h. subsoil drainage;
i. road names;
j. chainages;
k. datum;
l. natural surface and finished levels;
m. position and size of a concrete footpath or bicycle path;
n. traffic islands.

1.9.4 Intersections and road widening

1. Drawings show the following information for an intersection or road widening:
   a. road names;
   b. stormwater drainage;
   c. lip levels;
   d. curve radius;
   e. adjacent lot numbers, point chainage and offset;
   f. tangent;
   g. road reserve;
   h. pavement contours at sufficient intervals;
   i. channelisation works;
   j. surface treatments;
   k. concrete footpath or bikeway crossings;
   l. water quality treatment devices;
   m. street trees and gardens.
2. Drawings show the following information for a speed control device:
   a. the information for an intersection or road widening;
   b. island geometry and levels;
   c. product code of devices;
   d. radii, chainage and offsets;
   e. island kerb;
   f. landscape area.
3. Drawings show the following information for pavers:
   a. restraints;
   b. pavements;
   c. drainage;
   d. type of paver (e.g. colour, size, material, product code, manufacturer).

1.9.5 Public utility plant

Drawings show the following information for public utility plant:

a. utilities;
b. long section;
c. cross section;
d. connections to residential properties.

1.9.6 Pavement design report

1. A pavement design report presents all analyses, data, policies, calculations and other considerations used to design the structural aspects of a pavement.
2. The freight and heavy vehicle traffic generated by the development is to be identified in a traffic impact assessment report and shall form an input into the pavement design report.
3. A pavement design report must be prepared by or under the supervision of and signed by a suitably qualified Registered Professional Engineer Queensland.
4. A pavement design report includes the design input values and output including but not limited to:
   a. determination of design traffic — all assumptions used to determine design traffic and any adjustments to the traffic data;
   b. traffic data including details of traffic count volumes and composition;
   c. traffic modelling including heavy vehicles generated by the development;
   d. design period;
   e. subgrade properties;
   f. summary of laboratory tests conducted on any materials extracted from the existing pavement or future subgrade;
   g. subgrade soil conditions and subgrade Californian Bearing Ratio;
   h. results of any Falling Weight Deflectometer (FWD) testing to characterise the existing structural condition (including the MODULUS back-calculation summary);
   i. drainage considerations and any proposed subsoil drainage systems are to be shown on typical sections;
   j. summary of assumptions used to develop pavement design;
   k. any mechanistic design including material properties and CIRCLY (software) calculations;
   l. proposed pavement design showing pavement materials and layer thickness;
   m. any other matter that may adversely affect the design and life of the pavement;
5. A pavement design report concludes with a recommended pavement design based on the data, analyses, and procedures included in the report.
6. The calculation of design traffic is to be included with the design submission.
7. In deep cuttings, fills or other instances where testing of subgrade is not possible until completion of bulk earthworks, pavement design or re-evaluation of a design will be required upon examination and testing at subgrade level.
8. If the pavement design is varied following re-evaluation of the subgrade properties, a final pavement design report is to be submitted prior to subgrade inspection.
9. The drawings in the pavement design report must clearly indicate the structure, material types and layer thicknesses of the proposed pavement and surfacing.
10. Records of actual pavement construction, together with any subgrade replacement or modification, must be collated as a final report to accompany the 'as constructed' drawings.

1.9.7 Functional traffic layout

1. Functional layout plans are submitted to Council, with the approved subdivision layout plans (1 set), for approval prior to approval of detailed engineering designs.
2. Functional layout plans are approved in advance of detailed design to avoid reworking of

designs.

3. Approved functional layout plans shall incorporate traffic signs, pavement markings, water quality devices and landscaping do not obviate the requirement of an approval of traffic signs and pavement marking, water quality devices and landscaping drawings.
4. Functional layouts show or are accompanied by the following information:
   a. background information that includes:
      i. design philosophy or concept description;
      ii. design speed for each road type;
      iii. reasons for the access arrangement;
   b. a plan, drawn to scale, showing all relevant existing details, that includes:
      i. land use of adjacent sites and sites opposite the development;
      ii. existing intersections and vehicular entrances in the vicinity;
      iii. existing road layout;
      iv. existing services which have an impact on the layout;
      v. existing pavement marking;
      vi. existing trees;
   c. proposed roadworks and channelisation layout, drawn to scale, that includes:
      i. critical dimensions such as kerb alignments, radii and kerb and channel types;
      ii. proposed pavement marking, including lane marking with lane widths;
      iii. relationship of work with other stages;
      iv. limit of Council responsibility where other authorities are involved (such as Queensland Department of Transport and Main Roads);
      v. all lot and property boundaries;
      vi. proposed trees, gardens and water quality devices;
      vii. any other information considered necessary by Council to adequately assess the performance of the facility.
5. A 1:250 scale is recommended for intersection drawings, and 1:500 scale is recommended for more extensive roadworks.
6. A North Point is provided on all drawings.
7. If the development is at or near an intersection, a plan of the entire intersection showing all existing legs is required.

1.9.8 Traffic signs and pavement marking

1. Traffic sign and pavement marking plans are submitted to Council (2 sets in hard copy), with the approved road layout plans (1 set) and the approved street naming and numbering plans (1 set) for approval.
2. A scale of 1:250 or 1:500 is recommended.
3. Plans are drawn using Council's standard templates including title blocks and symbols, and include the consultant's logo (the applicant can elect to use Council or an external engineering consultant), and Council's designated traffic area identification number.
4. Plans show existing and proposed details, including but not limited to:
   a. real property boundaries and kerb lines;
   b. driveways;
   c. existing and proposed pavement markings;

d. signs such as parking signs and street name signs;
e. power poles and service pits;
f. traffic signals;
g. the preferred future road layout where the proposed streets may be in the future a loop road or cul-de-sac;
    i. stormwater quality treatment devices;
    ii. street trees and gardens.
h. locality plan (for jobs proposing new roads).

5. All existing markings that will be retained must be fully dimensioned, as well as proposed markings.
6. A thin dashed line is used for existing markings that will be removed.
7. Traffic signs are shown using the standard sign code (such as ERECT R2-14(L)) and not shown as pictorial signs.

1.10 Stormwater drainage drawings

1.10.1 Layout

Stormwater drainage layout plans show the following information:

a. road reserve boundaries and road identification;
b. allotment boundaries with proposed lot number;
c. location of stormwater features such as stormwater and roof-water lines (including size), maintenance holes, gullies, outlets, inlets and roof-water inspection pits, water quality management devices, water quantity devices;
d. location of existing services;
e. existing and proposed contours;
f. proposed easements;
g. stage boundaries;
h. concrete footpaths;
i. concrete bikeways;
j. cut-off drains;
k. vehicular crossings;
l. maintenance access paths;
m. side drains;
n. location of waterway corridors;
o. position of a waterway (e.g. centre-line and top of bank);
p. extents of an overland flow path including cross-sectional details;
q. roof-water kerb adaptors in the kerb and channel;

1.10.2 Longitudinal section

Stormwater drainage longitudinal section drawings show the following information:

a. chainages;
b. existing surface levels;
c. design finished surface levels;
d. pipe invert levels;

e. maintenance hole chainages;
f. distance between maintenance holes;
g. grade of pipes;
h. flow velocity and/or partial flow velocity;
i. pipe capacity;
j. pipe size;
k. diameter of pipes;
l. pipe class (e.g. Class 2) and pipe material/type (i.e. RCP, SRP, FRC, HDPE, PE);
m. pipe installation type of support (i.e. bedding method) — (refer BSD-8003);
n. method of trench compaction;
o. hydraulic grade line including the corresponding water levels at junctions;
p. design storm frequency;
q. maintenance hole diameter;
r. invert levels of inlets or outlets, extending to the free outlet or creek bed;
s. gully numbers;
t. depth to invert at maintenance holes;
u. type of gully and size of lintel;
v. service crossing.

1.10.3 Details

1. Drawings show the following information for a maintenance hole:
   a. connecting pipes;
   b. maintenance hole/chamber size;
   c. identification number;
   d. location chainage;
   e. invert levels for each pipe;
   f. benching details.
2. Drawings show the following information for an inlet or outlet:
   a. identification number;
   b. thickness of walls and floor;
   c. reinforcing;
   d. type of treatment to prevent scour (such as energy dissipator);
   e. water quality management devices (such as a gross pollutant trap or a sedimentation basin);
   f. type of grate — galvanised;
   g. surrounding levels (such as waterway bed and banks);
   h. position in relation to site and stormwater drainage features (such as waterway, property boundary, flow direction or flow velocity);
   i. invert levels;
   j. surcharge structures.
3. Drawings show the following information for a catchment:
   a. tabulation of catchment information (such as catchment areas, slopes, run-off coefficient or design discharges);
   b. sub-catchment boundaries;
   c. full external catchment with contours extending beyond the limits of the site;

d. existing and proposed contours.

4. Drawings include a stormwater drainage calculation sheet for stormwater drainage.
5. Drawings show the following information for an open channel:
   a. top and toe of batters;
   b. cross-sections;
   c. design levels;
   d. existing surface levels, either by contours or spot levels, on the subject site and on the adjoining properties or road reserves;
   e. proposed spot levels and contours;
   f. proposed development and habitable floor levels;
   g. maintenance and/or safety berms;
   h. longitudinal section;
   i. landscaping details.
6. Drawings show the following information for a detention or retention facility:
   a. location and extent of each storage area;
   b. locations and details of each outlet and/or discharge control device;
   c. locations and details of any inlets;
   d. catchment area draining to each storage area;
   e. maximum water surface levels in each storage area and corresponding AEP%;
   f. overflow structures and surcharge paths;
   g. levels and location of the discharge points for each storage area;
   h. internal drainage system;
   i. existing contours and final design levels;
   j. final site layout;
   k. location and extent of any floodway or flow paths;
   l. cross-sections through the storages;
   m. plans and long sections of maintenance access driveways
   n. the information shown for an open channel;
   o. side batters;
   p. spillway detailed plan and sections;
   q. low flow pipes;
   r. scour protection at inlets and outlets;
   s. floor subsoil drainage;
   t. details of embankments including cross sections;
   u. flood bypass facility.
7. Drawings show the following information for a culvert:
   a. full structural details including base slab design and support;
   b. handrails;
   c. scour protection.
   d. culvert size, types and invert levels;
   e. sealing of joints.
8. Drawings show the following information for an overland flow path:
   a. existing surface levels, either by contours or spot levels, on the subject site and on the adjoining properties or road reserves or waterways;
   b. finished surface levels on the subject sites;

c. proposed habitable floor and development levels;
d. overland flow path widths and levels, and cross-sections along the flow path for the design flows;
e. existing drainage structures, pipe sizes and levels, including at the proposed discharge point;
f. plan extent of overland flow.

9. Drawings show the following information for a water quality devices:
   a. ancillary pipes, culverts, drains, retaining walls, pits, grates, basins, and surfaces designed to temporarily or permanently retain stormwater for water quality treatment.
   b. design contours and set-out;
   c. catchment area drainage to the device;
   d. location and detail of each inlet and outlet;
   e. detail of low flow diversion systems;
   f. normal operating level of device or 1% AEP water levels;
   g. levels of details of overflow structures and surcharge paths;
   h. levels and location of outlet points for each storage area;
   i. cross-sections through the device;
   j. vegetation types and planting density;
   k. underdrain details;
   l. gross pollutant and sediment forebay;
   m. maintenance access;
   n. maintenance plan;
   o. area of treatment, landscaping, screening;
   p. fencing and gates
   q. specification of filter media (bioretention systems only);
   r. plan, levels and specifications of subsoil drainage system (bioretention system only);
   s. plans and long sections of maintenance access driveways.

1.11 Standard and non-standard infrastructure

1. Generally, standard infrastructure as indicated in this planning scheme policy should be the type and nature of infrastructure provided.
2. Non-standard infrastructure will only be considered where:
   a. there is a clear demonstration that:
      i. standard infrastructure is not able to meet the need of the particular circumstance;
      ii. non-standard infrastructure provides the same or better performance than standard infrastructure in terms of design, establishment, construction and maintenance; or
   b. Council has identified a preference for non-standard infrastructure in that particular circumstance.
3. Where non-standard infrastructure is provided on the basis of Council accepting either of the above circumstances in (2), the non-standard infrastructure must be designed, assessed, delivered, established, constructed and maintained according to the following:
   a. Council's satisfaction at all stages until the infrastructure is no longer the responsibility of another party;
   b. complete information about the design, assessment, establishment, construction and maintenance is provided to Council;

c. the design, establishment, construction and maintenance costs are completely accounted for and provided to Council;
d. full life-cycle costs of the non-standard infrastructure are provided to Council.

Chapter 7 Stormwater drainage

Contents

7.1 Introduction

1. The planning, design and implementation of stormwater drainage must integrate the 2 distinct components of stormwater management, that is, water quantity and water quality. The stormwater drainage system must:
   a. prevent or minimise adverse social, environmental, and flooding impacts on the city's waterways, overland flow paths and constructed drainage network;
   b. ensure that the design of channel works as part of development maximises the use of natural channel design principles where possible;
   c. achieve acceptable levels of stormwater run-off quantity and quality by applying total water cycle management and water sensitive urban design principles.

3. This chapter identifies the following for stormwater drainage:
   a. design and construction standards;
   b. advice about satisfying assessment benchmarks in the planning scheme;
   c. the information that the Council may request to be supplied for a development application.

2. In addition to this planning scheme policy, urban stormwater drainage systems are planned, designed and constructed in accordance with the current edition of the following:
   a. Queensland Urban Drainage Manual (QUDM);
   b. Australian Rainfall and Run-off;
   c. Waterway Design: A guide to the hydraulic design of Bridges, Culverts and Floodways (AustRoads 1994);
   d. AustRoads — 'Guide to Road Design Part 5: Drainage design';
   e. Brisbane City Council Department of Works Supplement to the Queensland Urban Drainage Manual;
   f. Integrated Maintenance Manual for Waterways, Wetlands and Open Drains;
   g. Local stormwater management plans and stormwater management plans;
   h. Technical guidelines for assessing energy efficiency;
   i. Urban creek erosion — Guidelines for selecting remedial works 1996;

j. Urban stormwater management strategy;
k. Water sensitive urban design: Streetscape planning & design package.

7.2 Property drainage systems

7.2.1 General

The purpose of a drainage system may include the following:

a. reduce the level and frequency of ponded rainwater on a property that may constitute a health problem;
b. reduce surface or sub-surface stormwater that could cause nuisance, damage or hazard on the property;
c. mitigate effects of improvement on a property that could result in increased nuisance, damage or hazard on other properties;
d. reduce erosion and resulting environmental impacts.

7.2.2 Design standards

7.2.2.1 General

1. Stormwater drainage systems are to be designed for minor and major design parameters.
2. The major drainage system is that part of a drainage system in a catchment that is designed to safely convey rare design storms, and may comprise open space floodway channels, road reserves, pavement expanses, overland flow paths, natural or constructed waterways, detention/retention basins and other major water bodies.
3. Piping of major flows (e.g. 2% AEP flows for overland flow) cannot be relied upon for managing major flows as it is unlikely that all flows could be captured by inlets and blockage of the minor system can occur. In all instances, a major flow path would still need to be provided.
4. The minor drainage system is that part of a drainage system in a catchment that conveys flows from the minor design storm such as the 2 and 10 year ARI events (39% and 10% AEP events) and usually comprises kerb and channel, roadside channels, gully inlet pits, underground pipes, maintenance holes and outlets.

7.2.2.2 Design average recurrence intervals

1. The rainfall intensities used for flow estimation in Brisbane for the 1 year ARI to 100 year ARI (63% to 1% AEP) events are shown in Table 7.2.2.2.A.

Table 7.2.2.2.A—Rainfall intensity-frequency-duration (IFD) for Brisbane

Duration (minutes)	**Probability (AEP and ARI) and intensity (mm/h)**						
	63%	**39%**	**18%**	**10%**	**5%**	**2%**	**1%**
	1 year	**2 year**	**5 year**	**10 year**	**20 year**	**50 year**	**100 year**

5	117	151	191	215	248	291	325
6	110	141	179	202	232	273	304
7	103	133	169	190	219	258	288
8	98	126	161	181	209	246	274
9	94	121	154	173	200	236	263
10	90	116	147	167	192	227	253
11	86	111	142	161	185	219	244
12	83	107	137	155	179	212	237
13	80	104	133	150	174	205	229
14	78	100	129	146	169	199	223
15	75	97	125	142	164	194	217
16	73	95	122	138	160	189	211
17	71	92	118	134	156	184	206
18	69	90	115	131	152	180	201
19	68	87	113	128	148	176	197
20	66	85	110	125	145	172	193
21	64	83	108	122	142	168	189
22	63	81	105	120	139	165	185
23	62	80	103	117	136	161	181
24	60	78	101	115	133	158	178
25	59	76	99	113	131	155	174
30	54	70	90	103	120	142	160
35	49	64	83	95	111	131	148
40	46	59	77	88	103	123	138
45	43	56	72	83	97	115	129
50	40	52	68	78	91	108	122
55	38	49	64	74	86	103	115
60	36	47	61	70	82	97	110

90	28	36	47	54	63	76	85
120	23	29	39	45	52	62	71
180	17	22	29	34	39	47	53
210	15	20	26	30	35	42	48
240	14	18	24	27	32	39	44
Based on coefficients issued by the Bureau of Meteorology (Ref FN2615) for 27.475S 153.025E. Calculated in accordance with Australian Rainfall and Run-off (1987 Edition). Refer to Queensland Urban Drainage Manual for application of intensity-frequency-duration to flow estimation.							

2. Longer recurrence interval design storms need to be considered in instances where the level of danger to persons or risk of significant property damage warrants such an approach. Where critical infrastructure or vulnerable uses are proposed, the 0.2% AEP storm or probable maximum flood (PMF) may need to be estimated (refer to the Flood overlay code for applicability). The PMF may need to be considered where flood evacuation is a critical consideration.

7.2.2.3 Drainage

1. Council's design standards for stormwater infrastructure vary for different types of land uses. The design standards for roof water, drainage in private roads/driveways and for drainage in roads fronting those types of development are set out in Table 7.2.2.3.B.
2. Pipe drainage of on-site roof water and surface water from paved and unpaved areas must comply with AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage, QUDM for Level III, IV and V drainage standards.
3. The design of the major system must ensure flows can be conveyed safely. Where the major system is part of a road, this may require increasing the capacity of the minor system above that shown in this table to ensure flow depths and hazard are acceptable (refer to QUDM).

Table 7.2.2.3.B—Design standards for drainage systems

Development category	**Design parameter**	**Minimum design standard**	
		AEP	**ARI (years)**
Rural areas (typically 2—5 dwellings per hectare)	Minor drainage system Major drainage system	39% 2%	2 50
Residential developments (Low density residential)	Minor drainage system Major drainage system	39% 2%	2 50
	Roof water drainage	Level II QUDM	
Residential	Minor drainage system	10%	10

developments (Low—medium density to High density)	Major drainage system	2%	50
	Roof water drainage	Level III and Level IV QUDM	
Industrial uses	Minor drainage system Major drainage system	39% 2%	2 50
	Roof water and lot drainage	Level IV QUDM	
Commercial land uses (centre zones)	Minor drainage system Major drainage system	10% 2%	10 50
	Roof water and lot drainage	Level IV and V QUDM	

Notes—
The design standard of major drainage system is to safely manage the difference between the minor and major flows where a minor system is provided in accordance with QUDM.

A severe storm impact assessment is to be provided where development may interfere with the passage of stormwater during the major flow event. Refer to QUDM for applicability and design considerations.

7.2.3 Collection of roof water run-off

1. Refer to QUDM 7.13 and AS/NZS 3500.3:2003 Plumbing and drainage Stormwater drainage.
2. Gutters and downpipes are to be designed to ensure no overflows for up to the 5% AEP storm of 5-minute duration.
3. Roof-water collection for low density residential subdivisions is to be in accordance with BSD-8111.
4. Pipes must be located clear of any driveways and must not cross footpaths in front of adjoining properties.
5. Minimum pipe sizes for roof-water lines applicable to low density residential development are shown in Table 7.2.3.A.
6. The pipes at each property must be sized in accordance with QUDM Level II drainage system, assuming a minimum of 15L/s for each 250m^2 of roof. For larger roof areas, the flow rate may need to be determined and an appropriately sized pipe provided accordingly.

Table 7.2.3.A— Minimum size of roof-water lines for low density residential development

No. of lots (nominal 250m^2 roof area at each lot)	**Minimum pipe diameter**	**Easement width**	**Minimum pipe slope**
1—2	150mm	Not required	1%
3—4	225mm	1.5m	0.5%

5—6	300mm	1.5m	0.5%

Note—The design flow shown for sizing roof-water lines is greater than QUDM due to the fact that the majority of new housing products in Brisbane achieve roof areas consistently greater than 180m^2.

7.2.3.1 Run-off from existing property improvements

If the efficiency of any existing drainage system on the property will be compromised by proposed additional site improvements, the existing system is to be suitably modified to offset any adverse impacts and meet the requirements of AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage.

7.2.3.2 Private subsoil drainage system

Private subsoil drainage systems are to be designed and constructed in accordance with section 6 in AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage.

7.3 Hydrology and hydraulics

7.3.1 General

The following factors must be considered in the design and selection of the final drainage treatment:

a. design discharges based on the ultimate development in the catchment;
b. future maintenance requirements to ensure the drainage facility continues to meet its design performance;
c. safety of persons, particularly children;
d. erosion and siltation both within and on adjoining properties not increased as a result of the development;
e. the existing treatments of other sections of the drainage system;
f. the general amenity of the area and particular use of parkland;
g. environmental issues, including vegetation protection orders, maintenance of natural channels and buffer vegetation, preservation and rehabilitation of flora and fauna habitats, riparian vegetation, archaeological values, heritage values, water quality and existing features such as wetlands;
h. integration of total water cycle management.

7.3.2 Flow estimation methods

For guidance to the design of urban drainage systems Council refers the designer to QUDM and Australian Rainfall and Run-off. Council will accept flow estimations using the rational method, calibrated run-off routing models, calibrated time-area routing models and calibrated direct rainfall hydraulic models. For complex drainage situations (particularly as part of a flood study for setting building development levels) or for sizing stormwater detention systems, a run-off storage routing model must be used to estimate flows and/or analyse the hydraulics of an urban drainage system.

7.3.3 Rational method assumptions

Where the rational method is suitable for flow estimation, the design is to be in accordance with QUDM and the following sections.

7.3.3.1 Fraction impervious

1. Designers are to refer to QUDM section 4.5 for methodology in determining the run-off coefficients.
2. The C10 coefficients of discharge shown in Table 7.3.3.1.A are to be used for rational method calculations.

Table 7.3.3.1.A—Coefficient of discharge C10 for development

Development category	C10
Central business areas (including in the Principal centre zone and Major centre zone)	0.90
Industrial uses and other commercial uses (including in the District centre zone and Neighbourhood centre zone)	0.88
Significant paved areas (e.g. roads and car parks)	0.88
Medium density and high density residential land uses	0.88
Low—medium density residential land uses	0.87
Low density residential area (including roads) Average lot ≥ 750m^2 Average lot ≥ 600m^2 < 750m^2 Average lot ≥ 450m^2 < 600m^2 Average lot ≥ 300m^2 < 450m^2	 0.82 0.85 0.86 0.87
Low density residential area (infill subdivision excluding roads) Average lot ≥ 750m^2 Average lot ≥ 600m^2 < 750m^2 Average lot ≥ 450m^2 < 600m^2 Average lot ≥ 300m^2 < 450m^2	 0.81 0.82 0.83 0.85
Rural/environmental protection areas (2—5 dwellings per ha)	0.74
Open space areas (e.g. parks with predominantly vegetated surfaces)	QUDM, Table 4.05.3(b)

7.3.3.2 Time of concentration

Refer to QUDM section 4.6 for calculation of time of concentration (rational method).

7.3.3.3 Creek flow times

1. For open creek catchments (< 100ha), minor channel or creek flow times may be initially determined by assuming an average stream velocity of 1.5m/s.
2. For medium-sized open creek catchments (100—500ha), the stream velocity method (QUDM Table 4.6.6) or the modified Friend's equation (QUDM Section 4.6.11) must be used.
3. For large open creek catchments (>500ha), the rational method should be used. However, detailed hydrological modelling of Brisbane's major creeks indicates that the rational method provides a reasonable estimate of peak discharge if an average flow velocity of 0.9m/s is assumed.

7.3.4 Hydraulic calculations

Refer to QUDM section 7.16 for information regarding hydraulic calculations.

7.3.5 Pipe capacity assumptions

1. Pipe capacity for trunk stormwater systems is to be estimated using hydraulic grade line analysis of the drainage system for the relevant design storm or using a suitable computer model.
2. Where estimating the capacity of existing small pipelines (1,050mm reinforced concrete pipe or less) for planning purposes for a development site <1,000m^2, the minor flow capacity can be estimated using pipe flowing full at grade assumptions. The adopted pipe velocity when using this method must not be greater than 3m/s, because various hydraulic losses in the drainage system at pits and bends will limit the allowable velocity.
3. Where the pipe capacity is being estimated to determine the proportion of overland flow through a site as part of a flood study, the hydraulic grade line analysis must use a starting water level that is relevant to the major storm event (e.g. 2% or 1% AEP storm event).

7.3.6 Tailwater level assumptions

1. Designers are referred to QUDM section 7.16 and QUDM section 8.0 for advice regarding the correct tailwater level requirements for drainage design of stormwater outlets.
2. An allowance of 300mm for climate change must be assumed for the minor system design, where stormwater drainage discharges into tidal waterways or the Brisbane River.
3. If tailwater is critical for managing major flows and setting flood immunity, a sensitivity check must be undertaken to examine impacts of higher sea level in accordance with best climate change predictions at the time.
4. In areas situated beside Moreton Bay and lower parts of the Brisbane River near the river mouth, storm surge may occur at times of the most intense rainfall as a result of cyclones or significant low-pressure systems. In small catchments, this may result in concurrent flooding whereby the peak flow off the catchment will coincide with peak storm-tide levels. Drainage design should choose appropriate tail-water levels in the situation carefully if it influences flood immunity for development.

7.3.7 Hazard estimation

The hazard associated with stormwater flows is determined by the product of depth and velocity, and or maximum total depth of flow (refer to QUDM section 7.4). For pedestrian safety the following requirements will apply:

a. The velocity by depth product in a roadway in the major storm is to be in accordance with QUDM.
b. Where there is an obvious danger of pedestrians being swept away where the velocity by depth product is to be limited to $0.4m^2/s$ in the major storm event.
c. If any use predominantly involves vulnerable uses such as elderly and/or disabled persons requiring assistance or small children, a childcare centre or educational establishment and those areas are readily accessible to children, implications of velocity depth products would need to be considered for each development as there is no safe velocity depth product applicable (refer to QUDM 7.4.2). However as a guide, a velocity depth product greater than $0.2m^2/s$ would be considered highly unsafe for those uses."

7.4 Drainage infrastructure

7.4.1 Surface run-off

7.4.1.1 Table drains

1. Table drains are generally only permitted in the road reserve for rural locations and when a new half road is constructed. In these instances, table drains are required to manage the road run-off in the absence of kerb and channel.
2. Table drains must be separated from the carriageway by regularly spaced delineator posts.
3. To prevent erosion and to minimise maintenance, table drains must be free draining.
4. Where a table drain is relatively flat (minimum velocity <0.6m/s) the provision of a concrete invert and access to facilitate the removal of sediment must be considered. A further consideration is the provision of silt traps at the head of the drain to minimise the environmental effect of silt removal along the full drain lengths.

7.4.1.2 Swales

1. Swales are not permitted on a local road where residential lots have frontage and access.
2. Swales are ideally located in the road median of major roads, or along the frontage of parks in a local access or neighbourhood access road. They will typically require a minimum 16m-wide road reserve to accommodate if proposed on the road verge.
3. Where used for water quality treatment the design of the swale is to consider the Water Sensitive Urban Technical Design Guidelines for South East Queensland (Healthy Waterways).
4. Swales cannot replace conventional stormwater drainage as their intent is to treat the water quality of small frequent rainfall events (<3 month ARI) and their design must ensure that they can convey the 2 year ARI (39% AEP) flow while meeting the roadway flow limits and capacity in QUDM section 7.4, while also ensuring the hazard in the swale is safe for

pedestrians.

7.4.1.3 Cut-off drains

1. Cut-off drains may be provided to prevent sheet flow from adjacent properties entering the developed land.
2. These drains must be connected to stormwater infrastructure and directed to a lawful point of discharge.

7.4.1.4 Overland flow paths

1. All developments must provide an overland flow path for the major design storm less the piped flow. Blockage of inlets and culverts should also be taken into account as required by a severe storm impact assessment (refer QUDM section 7.4).
2. Overland flow paths are to be provided by the proposed road/driveway system for internal drainage or small external catchments. However, larger flow paths may require swales or channels.
3. Design Manning's roughness values for a grassed open channel or swale is determined by a number of factors including vegetal retardance and hydraulic radius. QUDM Section 9.3 provides sufficient correlation to determine design Manning's roughness values.
4. A design Manning's roughness value of 0.10 is to be used for estimating flood immunity or determining easement extents in overland flow paths.

7.4.2 Subsoil drainage system

1. Subsoil drainage systems are to be designed and constructed in accordance with BSD-2041.
2. Subsoil drains shall be connected to stormwater inlet pits (gully, field inlet or roof water pit) and disposed of in a manner that will not adversely impact on adjacent properties.

7.4.3 Stormwater pipelines

Underground stormwater pipework layout is to be the conventional herringbone layout where greater than 600mm diameter pipe is used. Refer to QUDM section 7.7.

Gully to gully drainlines are to conform to QUDM section 7.7, provided that all the following requirements are satisfied:

1. Gullies are consistent with Council's standard drawings.
2. Acute angles (greater than 45 degrees) in connecting pipes are avoided to minimise head losses.
3. Interference with other utility services on the footpath is avoided.
4. The major drainage line (spine) of a gully to gully stormwater system is constructed on one side of the road only. Any gullies on the opposite side of the road should be connected directly across the road. Under no circumstances are spines of gully to gully systems permitted on both sides of the road.
5. The gully pit is benched.

7.4.3.1 Pipe size and type

1. The pipe sizes are to be designed for a minimum capacity in accordance with minor drainage requirement in Table 7.2.2.3.B and Table 7.7.1.A. In all cases, the minimum size for a reinforced concrete pipe that will be contributed as a Council asset is 375mm diameter.
2. The pipe types and classes must comply with the following requirements:
   a. Pre-cast concrete pipes to meet AS 4058 — 1992 Precast concrete pipes;
   b. domestic applications (low density residential) must be in accordance with Standard 1254: 2010 — PVC-U Pipes and fittings for stormwater and surface water applications;
   c. commercial, industrial, medium and high density residential applications must be in accordance with AS 1260: 2009 — PVC-U pipes and fittings for drain, waste and vent application.
3. The minimum pipe class is:
   a. steel reinforced concrete pipe — Class 2;
   b. fibre reinforced concrete pipe — Class 1;
   c. unplasticised polyvinyl chloride (UPVC) for roof water drainage — sewer class SN6;
   d. flexible stormwater pipe — class SN8.
4. The minimum pipe size for any development, other than a dwelling house, is 150mm nominal diameter for internal underground site drainage. Where the pipe also conveys stormwater from an adjoining upstream property (now or in future), the minimum pipe size is 225mm nominal diameter.

7.4.3.2 Pipe grade

The minimum pipe grade is to be designed in accordance with Reference Specifications for Engineering Work S160 Drainage section 3.2.1.

7.4.3.3 Depth of cover to pipes

1. Depth of cover to pipes to be engineered to meet whole-of-life design requirements, including construction and pavement reconstruction loads. Refer to Reference Specifications for Engineering Work S145 Installation and Maintenance of Utility Services and Standard Drawings BSD-2042 and BSD-2043 for minimum design requirements.
2. Minimum pipe cover for polyvinyl chloride (PVC) pipelines varies for different locations and loadings and is set out in the technical manual and in Australian Standard 2032: 2006 Installation of PVC pipes.
3. Minimum cover for construction loads is to comply with BSD-8001 and BSD-8002.

7.4.3.4 Connections to private stormwater drainage under buildings

A connection to stormwater drainage under a building is to be carried out in accordance with section 7.2.9 of AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage.

7.4.3.5 Above ground pipe work

Above ground pipe work is to be carried out in accordance with section 6 of AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage.

7.4.3.6 Pipe bedding

Pipe bedding requirements are to comply with BSD-8011.

7.4.4 Access chambers and maintenance holes

1. Refer to QUDM section 7.6 for design criteria, including guidance on pipeline location.
2. Maintenance holes and chambers must be provided in accordance with BSD-8021 to BSD-8035.

7.4.5 Gullies and field inlets

1. Refer to QUDM section 7.5 for blockage assumptions for inlets, location of inlets in roads and safety issues.
2. Standard gullies must not be located on sharp horizontal kerbs (<10 m kerb radius).
3. All new gullies are to be constructed in accordance with BSD-8051 (i.e. “lip-in-line”).
4. ‘Kerb in line’ gullies may be acceptable where an existing gully is either being replaced or upgraded and the existing verge width is less than 2m wide, or in areas where high pedestrian activity is expected or cannot be effectively controlled.
5. Anti-ponding gullies (refer to BSD-8056) are only permitted in special circumstances at intersections when the road geometry does not allow the kerb and channel to drain to the standard gully at the tangent points. The inlet capacities of these gullies must be excluded from the calculations.

7.4.6 Gully inlet capacities

Refer to BSD-8071 to BSD-8082 for the relevant hydraulic capture charts for gully inlets.

7.4.7 Building near or over underground stormwater infrastructure

1. For underground stormwater facilities with or without drainage easements and where pipes or conduits are greater than or equal to 225mm in diameter or width, building over/near stormwater requirements will be applicable if the site is subject to any 1 or more of the following conditions:
   a. any proposed works contravening the drainage easement terms;
   b. any earthworks (filling or excavation) proposed directly over or adjacent to the stormwater drainage or maintenance holes that will result in changes to surface levels or loading conditions over these stormwater facilities;
   c. any building work proposed over the stormwater drainage or maintenance holes;
   d. any proposed works that will affect the structural integrity of the drainage or its trench;
   e. proposed changes to the loading conditions on an existing maintenance hole cover, for example, changing the use of a non-vehicular trafficable area to a vehicular trafficable area;
   f. proposed use of rock bolts or ground anchors within 2m of the stormwater drainage;
   g. proposed property access width of less than 2m from the front entrance or access road to any maintenance hole or property connection located on site;
   h. proposed driveways or concrete pavements over maintenance holes or property

connections;

i. clashing of services or utilities (other than sewers) with the stormwater drain line that may affect the structural integrity of the stormwater drainline or its trench, or sewers larger than 150mm diameter crossing any stormwater drainline.

2. When building over stormwater an adequate buffer zone is required between the edge of foundation system and the edge of the stormwater infrastructure to minimise structural damage during excavation, boring or piling operations.
3. The following minimum horizontal clearances are required where undertaking such works near stormwater infrastructure and may need to be increased if it is anticipated that the pipe bedding will be affected:
   a. 1m clearance applies to an excavated footing system such as beams and pad footings excavated by backhoe or similar;
   b. 1m clearance applies to bored piers;
   c. 6m clearance applies to driven, vibrated or jacked piles.
4. Works shall be carried out in accordance with section 7.2.9 of AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage. Typically, where a drain is laid near to a footing, the trench shall be located beyond a 45° angle from the base of the footing, as shown by Figure 7.4.7.A.
5. When determining the minimum setback from existing stormwater infrastructure, allowance needs to be made for future upgrading of the pipeline to meet Council's design standards where this pipeline is undersized.

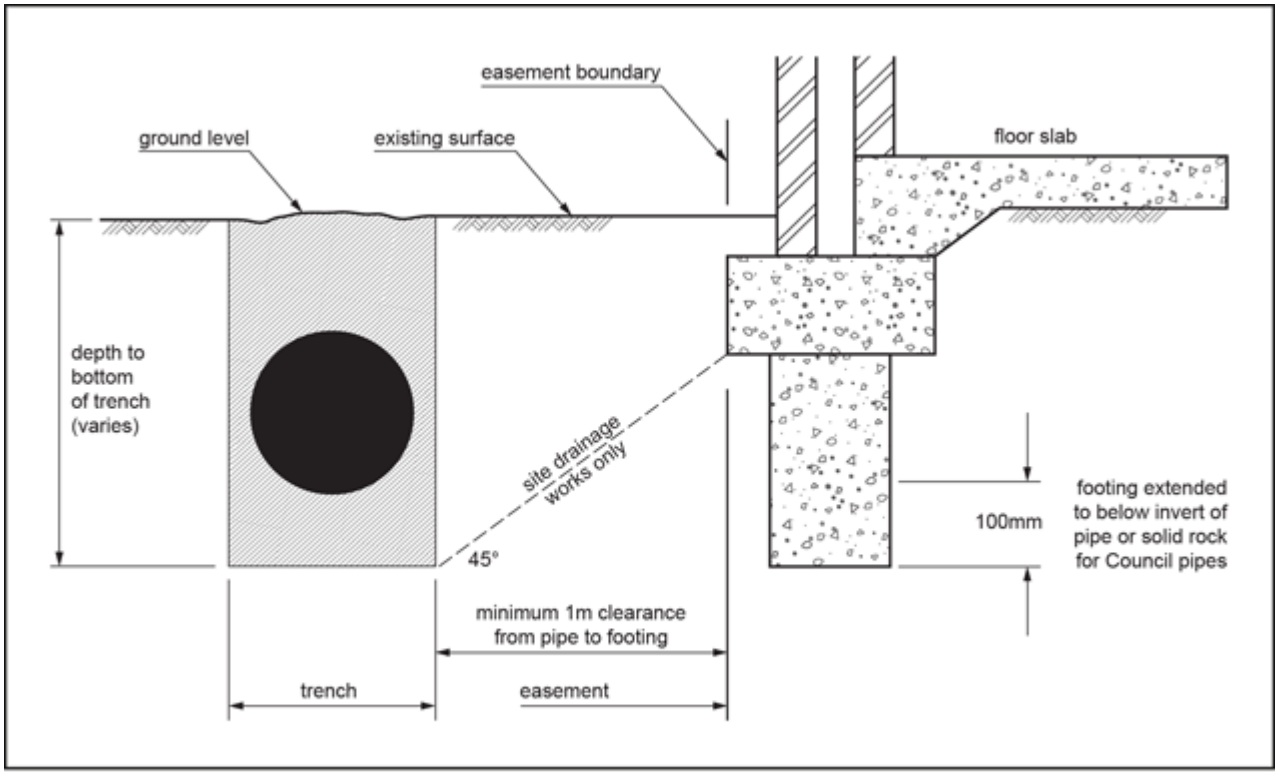


Figure 7.4.7a—Building near and over stormwater and subsoil drains

View the high resolution of Figure 7.4.7a—Building near and over stormwater and subsoil drains

7.4.8 Building near or over aboveground stormwater infrastructure

Where building over overland flow paths or channels refer to the undercroft clearance requirements of the Flood planning scheme policy.

7.4.9 Tree Pits (WSUD) and Tree Trenches

Water Sensitive Urban Design (WSUD) tree pits and tree trenches may be used to capture stormwater and utilise it for watering of street trees, removal of pollutants from stormwater and increased infiltration of stormwater into subsoils.
Refer to Councils Standard Drawings BSD-9000 series for further details.

7.4.10 Raingardens (Bioretention in Street Verges)

Raingardens are essential small bioretention filter areas that are located within the verge or even a portion of the roadway. Their purpose is to treat stormwater, remove pollutants, improve aesthetics and increase infiltration of stormwater into subsoils.
Refer to Councils Standard Drawings BSD-8000 series for further details.

7.5 Stormwater detention and retention systems

7.5.1 General

1. Stormwater detention systems are used to reduce the peak discharge from a development to mitigate flood impacts on downstream development or maintain the capacity of existing infrastructure. They are complex systems that have limited suitability to many sites, particularly areas with limited grade into downstream areas.
2. The detention can be in either free draining systems (detention basin or tank) or wet systems (retention basin that integrates with a water quality treatment system such as a wetland or pond).
3. Locating basins off-line to external catchments is preferred as it reduces detention storage volumes, reduces the risk of failure due to excessive flows and in the case of basins flowing into each other, it can lessen the risk of a sequential overtopping and associated risk of failure.
4. Both types may have multiple uses (e.g. pollution control, environmental wetland, recreational) as well as hydraulic functions.

7.5.2 When to provide stormwater detention

1. As a general rule, stormwater detention is less likely to be required at the bottom one-third of the catchment.
2. The majority of infill development should not require stormwater detention, although stormwater detention may be required under 3 specific conditions, being:
    a. when a development is likely to increase run-off to such an extent that the downstream drainage (both piped and overland) cannot cater for the additional capacity or adverse

impacts are created;
   b. where there is no practical way to increase the downstream system capacity;
   c. if the increase in flows from the development would cause adverse flooding impacts to adjacent or downstream properties.

3. Stormwater detention requirements may be waived where:
   a. The development will not cause adverse impacts or actionable nuisance to surrounding properties;
   b. the site discharges directly into the Brisbane River or Moreton Bay where flooding is controlled by river flooding or storm tide;
   c. the site discharges directly into the lower catchments of creeks or major drains where it would generally be undesirable to have detention where it may allow peak flows from the site to coincide with the wider catchment flood peak;
   d. the proposal is for residential development where stormwater is disposed to Council's kerb and channel or piped stormwater system and major flows from the site would drain to Councils road reserve;
   e. for infill development only, the development site has an existing actual impervious fraction greater than 60%;
   f. the applicant can demonstrate to Council's satisfaction that, if the total catchment containing the site were developed to its full potential while maintaining the existing infrastructure, stormwater detention on the subject site would not be of benefit in reducing adverse flooding impacts on downstream roads, properties and open watercourses, which may be the case at the lower end of major catchments;
   g. the downstream drainage system has been upgraded, or is proposed to be upgraded by the development to cater for fully developed peak flows from the catchment to the Council's standard of service;
   h. the development site is located entirely within the 1% AEP floodplain (waterway/creek or river flooding sources).

7.5.3 General requirements

1. The design of stormwater detention and retention systems is to refer to QUDM section 5.0 for all design elements including but not limited to embankments, spillways, low and high flow outlets, freeboard, basin grade and scour control.
2. Stormwater detention is offline to existing creeks/flow paths and external catchments.
3. Where an online system is proposed, it must provide regional benefits to flow reduction and be designed for ultimate catchment development. These basins will require incorporation of natural low flow channels, riparian vegetation and use of weir outlets (no piped low flow outlet) to promote fauna movement and reduce likelihood of outlet blockages.
4. Where stormwater from any public asset such as a road reserve is directed into a stormwater detention system, these detention systems must be located within public land such as a park or drainage reserve, but not within road reserves. Only above-ground detention storages will be permitted in Council-owned lands. Tanks in public roads will not be accepted.
5. Above-ground detention basins should be integrated with water quality treatments by locating the detention storage requirement above the water quality extended detention depth.
6. Council will not support the installation of on-site (lot-based) stormwater detention facilities in

a residential subdivision on each freehold lot as there is no provision to adequately ensure these facilities are protected or maintained into the future.

7. Using stormwater detention tanks in commercial or industrial developments will be permitted where located on lots or within privately owned roads/driveways. Similarly, tanks could be used within roads/driveways owned by community title for residential developments.

7.5.4 General design objectives

1. Sufficient detention storage must be provided to ensure peak flow rates and/or flood levels at any point within the downstream drainage system do not increase as a result of the development from the 2 year ARI (39% AEP) storm to the 100 year ARI (1% AEP) storm events (for all relevant storm durations).
2. Where stormwater detention is considered necessary, sizing of detention storage for sites less than 2ha may use the simplified sizing method.
3. Where alternative detention storage requirements for smaller sites are proposed and/or where a site area exceeds 2ha, sizing of detention storage must be justified using a suitable run-off or storage routing model (e.g. DRAINS (ILSAX), RAFTS, RORB, WBNM).

7.5.5 Simplified detention storage sizing method

1. For development sites less than 2ha, avoid complex hydrological modelling. In every case, the sizing would require confirmation at the detailed design stage by a Registered Professional Engineer Queensland.
2. Sites with greater than 60% existing sealed impervious surfaces will generally not require stormwater detention because there is little change in peak flow, and redevelopment will often improve and augment older roof-water and stormwater drainage systems. Larger developments must confirm this is the case.
3. The proposed impervious percentage must be estimated from only the areas affected by the development and must exclude park areas or drainage reserves that may lie within the site catchment as these areas must not drain to a detention system. (This may significantly bias the average imperviousness and does not reflect the intensification of land use and resulting increase in peak flows).
4. Sites larger than 2ha will need to model the hydrology and estimate stormwater detention requirements and permissible site discharges as required.
5. The applicable site storage requirements (SSR) and permissible site discharges (PSD) for development are shown in Table 7.5.5.A and Table 7.5.5.B and the relevant categories used for estimating the site storage requirements and permissible site discharges are:
    a. Category D1 — sites where the existing impervious surfaces are less than 10% of the proposed developed area, this is generally applicable to greenfield sites;
    b. Category D2 — sites where the existing impervious area is greater than 10% but less than 40% of the proposed developed area, this is generally applicable to greenfield sites and some infill development;
    c. Category D3 — sites where the existing impervious area is greater than 40% but less than 60% of the proposed developed area, this is generally applicable to infill development.

Table 7.5.5.A—Site storage requirements (SSR) — Deemed-to-comply solution

Proposed impervious percentage (1)	Development site storage requirement (2)		
	Category D1 (m^3/ha)	Category D2 (m^3/ha)	Category D3 (3) (m^3/ha)
70 or less	320	150	n/a
82	335	165	110
86	340	170	115
88	345	170	115
90	345	175	120
95 or greater	350	180	125

Notes—
(1) The proposed impervious percentage shall exclude park areas, drainage reserves etc. that may lie within the site catchment.
(2) These site storage requirements volumes are to be increased by 15% where a non-high early discharge (HED) detention system is used OR where an above-ground basin (even with a high early discharge outlet) is used OR where the detention basin additionally provides a water quality treatment or ecological function.
(3) Existing impervious area is defined as 'sealed impervious surfaces' (driveways, roofs, pavement etc.) that would readily generate stormwater run-off.
(4) Site with an impervious area greater than 60% do not typically require stormwater detention where it is demonstrated that no adverse impact will occur on neighbouring properties.

Table 7.5.5.B—Permissible site discharge (PSD) — Deemed-to-comply solution

Existing site	Permissible site discharges (L/s/ha)	
	2 year ARI (39% AEP)	100 year ARI (1% AEP)
Category D1	180	535
Category D2	300	710
Category D3	370	790
> 60% sealed impervious surfaces	N/A(1)	N/A(1)

Note—
(1) No stormwater detention is required if the development is shown to have no adverse impact on any existing properties.

7.5.6 Detention sizing — general considerations

7.5.6.1 General

The following issues must be considered when undertaking the sizing of the detention storage.

7.5.6.2 External catchments

1. Overland flows that enter the site from surrounding properties must be collected and conveyed through or around the development, but kept isolated from any stormwater detention systems for all storm events.
2. Run-off from parks and other large pervious areas must also bypass the detention system.
3. Where bypass is not possible, the detention system must account for this additional inflow.

7.5.6.3 Hydraulic control at outlet

1. On-site detention must be gravity drained. Pumped systems are not permitted for detention.
2. An important element in preserving the integrity of an on-site detention system is ensuring that the system functions independently of the drainage network.
3. The stormwater detention facility is not intended to handle surcharge flow from the street drainage network; therefore the starting hydraulic grade line level of the detention system must be set at the top of the kerb and channel at the discharge point to the street system.
4. The outlet control device must be set above this level regardless of whether the detention system is connected to the underground drainage system or to the kerb and channel, to ensure that the outlet control is unaffected by downstream hydraulic grade line or water surface levels.

7.5.6.4 Distributed detention storage

1. Distributed detention storages that drain into each other will not perform in the same way as a single storage as they reduce the effectiveness of the down-slope storages in attenuating flows and may create adverse tail-water conditions. These systems are discouraged and where proposed must be modelled as an integrated system using a hydrological model.
2. The site storage requirements provided in Table 7.5.5.A must be located within a single detention storage; otherwise detailed hydrological modelling will be required to estimate storage requirements of a distributed storage proposal.

7.5.6.5 Site run-off bypassing the storage facility

1. A portion of the new impervious areas may discharge directly to a lawful point of discharge if it cannot be drained to the detention storage, provided the permissible site discharge (PSD) is reduced to compensate for the bypass flow. The allowable extent of impervious surfaces bypassing the detention facility may not represent more than 25% of the impervious area draining to the detention facility.
2. For hydrological modelling the bypass areas will not be directed into the storage. However, for the simplified sizing method the modified Permissible site discharge m^2 of catchment will be calculated using the following equation:
   Mod. PSD = *PSD* x (At / [At+Ab])

Where Ab = impervious area bypassing the storage facility
At = total area draining to the storage facility
PSD = permissible site discharge

7.5.7 Requirements for above-ground systems

7.5.7.1 Aesthetics

1. Once authorised to have a basin in parkland or other Council-controlled land, an important design criterion is that the basin does not look like a hydraulic structure but rather has special character. This will involve using variable slopes, retaining upstream gullies, camouflaging inlets and outlet structures and similar (a rectangular or geometrically shaped basin is generally undesirable).
2. Any detention basin proposed in a park or drainage reserve that does not incorporate a 'wet' water quality function, is part of a bioretention basin or has low flow channels, must be designed as a high early discharge (HED) system where flows only surcharge into the basin when the outlet capacity is exceeded.
3. The high early discharge system:
   a. ensures that frequent flows do not spill into the basin thereby minimising maintenance issues associated with waterlogged soils;
   b. is more efficient in their use of storage, requiring less storage volume than a standard detention basin arrangement.

7.5.7.2 Minimum grades

The floor of the above-ground detention basin must be well graded to prevent permanent ponding. Refer to QUDM 5.7 for design requirements.

7.5.7.3 Basin edge treatment

1. Grassed and landscaped edges must not be steeper than 1V:6H.
2. Landscaped edges must not be steeper than 1V:4H.
3. Using retaining walls must be minimised so that more than 30% of the basin perimeter is battered.
4. Where boulder retaining walls are required, these are to be a maximum height of 900mm unless structurally designed and certified by a Registered Professional Engineer Queensland (structural).
5. In some instances (e.g. occurrence of rapid drawdown or highly variable standing water levels), geotechnical investigations/designs may be required to assess the embankment stability.

7.5.7.4 Embankments

1. Refer to QUDM 5.10 for considerations.
2. Embankments holding back floodwaters must be suitably designed to be structurally adequate, certified by a Registered Professional Engineer Queensland (geotechnical) and

must be no higher than 1.5m above natural ground level.

3. Generally, batter slopes of embankments must be no steeper than 1V:4H and desirably no steeper than 1V:6H to aid in stability, minimise erosion from direct rainfall and provide suitable grades for landscaping.
4. A minimum 3m trafficable embankment width is required to allow access along the embankment for maintenance.
5. For minimum freeboard refer to QUDM Table 5.6.1.

7.5.7.5 Spillways and outlet weirs

1. The design shall refer to QUDM 5.9.
2. The overspill must not inundate nor concentrate flows onto adjoining properties.
3. Spillways are located as close to natural ground level as possible (e.g. where the embankment crest is lowest).

7.5.7.6 Safety and amenity

1. The safety of children moving in and out of the basin during times of inundation must be carefully considered. The design shall refer to QUDM 5.11.
2. The outlet/inlet grates must be designed such that any child will be able to crawl away from the grate under all operating conditions.
3. Internal batters located adjacent to publicly accessible areas (playgrounds and parks) must have a maximum 1V:6H batter, preferable 1V:20H.
4. Basins located away from public use areas must incorporate 1V:6H batters within some places in the basin for safe egress from floodwaters.
5. Signing must be erected at strategic locations alerting people to the possible hazards of the detention basins.
6. Where detention basins are located directly upstream of a dedicated roadway or residential property, the consequences to road users or residents of basin collapse or overtopping must be carefully evaluated.

Editor's note—*Water Supply (Safety and Reliability) Act 2008* regulates a dam, or a proposed dam that after its construction will be, a referable dam. In accordance with the *Water Supply (Safety and Reliability) Act 2008*, a dam of any size may be a referable dam if a failure impact assessment demonstrates there would be 2 or more people at risk if the dam was to fail. The *Water Supply (Safety and Reliability) Act 2008* and associated guidelines detail design, documentation and on-going management requirements for a referable dam.

7.5.7.7 Access for maintenance

1. All detention basins are provided with a vehicle access from the nearest public road into the basin to facilitate maintenance. The design vehicle for the driveway is to be a medium rigid vehicle.
2. For a wet retention basin, the vehicle access ramp must extend at least 500mm below the normal operating water level of the basin.

7.5.7.8 Maximum depth of ponding

1. The maximum depth of ponding in an above ground detention basin must be limited to:
   a. public parkland — 5% AEP ponded depth of 1.2m;
   b. parking or paved areas — 2% AEP ponded depth of 0.3m;
   c. unfenced landscaped areas — 2% AEP ponded depth of 0.5m;
   d. safety fenced (pool safe) areas where not a Council asset — no depth limit, but desirable depth of <2m to facilitate access and maintenance.

7.5.7.9 Inlets and outlets of detention basins

1. For above-ground detention storage, the inlet/outlet pits and grates must be set inconspicuously into the embankments of the basin.
2. Vegetated screenings must be provided, but these must be located sufficiently away as to not affect the hydraulic performance of the inlet and outlet structures.
3. Outlets may use pits, weirs, pipes and box culverts.
4. Where the outlet is within a wet retention basin (wetland) or bioretention basin, a concrete apron should extend at least 1m from these structures to minimise vegetation growing adjacent to it and impacting on the hydraulics of the outlet.
5. Outlet screens that minimise blockages are to be used. This will include Type 1 field inlets as per BSD-8091, or a dome cover field inlet (refer to BSD-8092).
6. Outlet structures generally consist of orifice plates (fixed to pipe inlets) or culverts placed at a low level in the basin to cater for the discharge of normal outflows, the diameter of the low flow outlet pipes must not be less than 375mm (or box section with equivalent height). Stepped weirs may also be used as an outlet to control flows.

7.5.7.10 High early discharge systems

1. The use of high early discharge pits can reduce storage requirements by allowing the flow at the start of a storm to pass around the basin, thereby ensuring more detention storage is available closer to the peak of the storm.
2. High early discharge systems typically are only suitable for dry detention basins that do not perform a water quality function as low flows bypass the basin.

7.5.8 Requirements for underground detention systems

7.5.8.1 General

1. The design of underground detention storage must address a number of public health, safety and pollution issues.
2. The storage must be self-cleaning, well ventilated, not cause accumulation of noxious gas, and facilitate easy maintenance and inspection. The following requirements must be met in order to achieve the performance objectives:
   a. the base has a suitable fall to the outlet (minimum grade 0.7%) and is appropriately shaped to prevent permanent ponding;

b. long-term ponding of water over the floor of the basin will not be acceptable;
c. provide a minimum 600mm x 900mm maintenance access opening over the tank outlet;
d. provide additional 600mm x 900mm pits where required to ensure the distance between pits does not exceed 10m;
e. provide an inspection/access pit (600mm x 600mm) directly over any inlet pipe;
f. incorporate a child-proof locking system for the surface grates;
g. install step irons where pit depth is greater than 1.35m;
h. where the storage is not sufficiently deep (<1.2m), access grates should be placed at the extremities of the tank and at intervals not exceeding 3m, which should allow any point in the tank to be flushed or reached with a broom or similar implement, without the need to enter the tank;
i. the minimum internal clearance height for accessible tanks is 1.2m in roads/driveways and
0.9m elsewhere;
j. the tank is to be structurally designed and certified to adequately withstand all expected service loads and provide adequate service life;
k. provide an overflow or bypass outlet ensuring any overflow is not directed into private property;
l. locate the tank outside of the root zone of trees that must be retained;
m. in areas of high water tables or floodplains, the tank is to be designed to ensure it resists buoyancy effects.

7.5.8.2 Drainage design standard where detention is proposed

1. Stormwater detention tanks must capture all flows off a development up to the 1% AEP storm, which is a much larger event than the drainage design standard for development. As a result, where underground detention tank is proposed, it will necessitate that the gullies and pipes within the development are sized to capture these flows.
2. The minor drainage system design where underground detention is proposed is to be the 10% AEP, with additional inlet capacity to 1% AEP provided closer to the detention system to capture flows.

7.5.8.3 Orifice plates

1. Orifice plates must be manufactured from corrosion-resistant stainless steel plates with a minimum thickness of 3mm (5mm where orifice diameter exceeds 150mm), with a central circular hole machined to 0.5mm accuracy.
2. The orifice diameter must not be less than 35mm and the machined hole must retain a sharp edge.
3. The plate must be permanently fixed to the pit wall and epoxy sealed to prevent the entrance of water around the edges.
4. The plates must be engraved with the orifice diameter and an identifying mark, and the orifice diameters certified by the manufactures.

7.5.8.4 Outlet sump

1. A sump is required in the base of the discharge control pit to assist in minimising turbulence

near the pit floor from affecting the hydraulic performance of the orifice outlet.

2. The sump would also prevent silt and debris from blocking the orifice outlet and facilitate simple installation of the orifice plate.
3. The invert of the sump must be at least 1.5 times the orifice diameter or 200mm (whichever is greater) below the centre of the orifice outlet and sufficient weepholes must be installed in the sump floor and be kept unblocked.

7.5.8.5 Grates and trash screens

1. Where an orifice plate is used with an orifice diameter less than 100mm, inflows must be screened to avoid blockage.
2. Screening (hot dipped galvanised) must be provided at a rate of not less than 50 times the orifice diameter, and incorporate handle(s) for easy removal.
3. The screens must be fixed at least 150mm from the orifice and positioned as close to vertical as possible.

7.5.8.6 Use of oversize pipes for storage

1. Oversize pipes will not provide sufficient detention in a drainage system and are likely to adversely impact on drainage design requirements and cause frequent sedimentation.
2. If oversize pipes for storage are proposed, the loss of storage with pipe grade must be considered along with impacts on peak flows, pipe capacity and self-cleansing velocities using appropriate hydrological models.

7.5.9 Maintenance requirements for Council and private detention systems

1. All detention and retention systems must be designed with simple, safe, cost-effective maintenance in mind.
2. A maintenance plan that documents all the maintenance requirements and responsibilities must be developed for all development applications for a material change of use applications (excluding dwelling houses). The plan must describe how the design facilitates maintenance requirements and set out how the system is to be maintained by addressing issues such as inspection, likely clean-out frequency, procedures, access and occupational health and safety requirements. Where a Council-owned asset, the maintenance plan must be submitted as part of the on-maintenance documentation and also include the cost estimate for the construction of the detention system and estimate of annual maintenance costs.

7.6 Disposal of property run-off

7.6.1 Lawful point of discharge

1. The objective of achieving a lawful point of discharge is to ensure that any stormwater discharge will not cause an actionable nuisance (i.e. a nuisance for which the current or some future neighbouring proprietor may bring an action or claim for damages arising out of the nuisance). The QUDM generally describes how it may be determined whether or not a lawful point of discharge exists.

2. When land is developed, the roof and surface-water run-off from that land and any external catchment (through the development site) must be discharged to a lawful point of discharge, being:
    a. where the location of the discharge is under the lawful control of Council, being:
        i. a Council-owned open space asset such as a park or drainage reserve provided the concentration of stormwater does not adversely affect the drainage capacity of the asset and/or impact on adjoining properties; or
        ii. a road reserve, including the kerb and channel and compliance with the permissible flow width, flow depth and hazard.
    b. where the location of the discharge is to stormwater drainage infrastructure designed for such purpose, being:
        i. a stormwater drainage easement within the downstream property receiving the runoff, where that easement has been designed to incorporate run-off from the development or the additional flow does not adversely affect the drainage capacity of the infrastructure or easement; or
        ii. an existing enclosed stormwater drainage system (excluding any foul water lines) including a gully pit, stormwater maintenance hole or stormwater pipe or roof water pipe with easement, ensuring that the capacity of that infrastructure is adequate to receive the stormwater run-off; or
        iii. an existing stormwater drain within the property where that drain has sufficient capacity to receive such run-off without adversely impacting on neighbouring properties.
    c. where the location of the discharge is to private property with downstream owner's permission:
        i. through adjoining private property at the rear of an allotment to concrete kerb and channel or existing enclosed stormwater drainage system abutting the allotment providing the stormwater system has sufficient capacity;
        ii. an existing stormwater drain in adjoining properties where that drain has sufficient capacity to receive such run-off.
3. Where permission from down-slope adjoining owners is required, written consent is to be provided using Council's standard form CC10835 'Property Owner's Statement of Consent or Refusal to allow a lawful point of discharge for a proposed development'. The applicant should be aware that this form is not legally binding and permission could be revoked by the owner, or where the ownership of that downstream owner changed. Additionally, the consent does not permit the downstream owner to accept any adverse impacts from development.
4. Where the existing stormwater drainage system has insufficient capacity to convey the additional flows, the development may need to provide infrastructure on the downstream property which mitigates the adverse effects of the increased flow.
5. Pump-out systems for stormwater disposal will only be considered for privately owned drainage systems (i.e. material change of use applications) in development where gravity drainage systems cannot work. The roof water will need to be directed to kerb and channel or an existing enclosed drainage system higher than the allotment from a drainage pit within the site via pumping. The pump design solution will need to address design requirements outlined in section 7.6.6.
6. The provision of stormwater detention does not negate the requirement for a lawful point of

discharge for development. Detention systems do not manage nuisance flows and may concentrate water that would have otherwise sheet flowed across a site boundary, often have high outlet velocity and will regularly release stormwater over extended periods of time. The provision of storm water detention is not to result in uncontrolled scour, ponding and nuisance to adjacent properties that would have otherwise not been experienced under existing conditions.

7.6.2 Roof water disposal in residential areas

1. All lots that do not fall directly towards the road must be provided with a rear allotment roof-water drainage system. The inter-allotment drains should generally be placed in the allotments which they serve directly. This system is detailed in BSD-8111 and BSD-8112.
2. Roof-water drainage systems are classified as private drains with the responsibility for future maintenance lying with the property owners.
3. In local residential streets, an approved full height kerb adaptor must be provided in the kerb, 400mm from the projected low side boundary for each lot.
4. In streets where footpaths will be constructed, kerb adaptors as per above with a length of UPVC pipe (sewer class SN8) extended from the adaptor to beyond the concrete footpath are required as per BSD-8114.
5. All roof-water pipes >150mm nominal diameter are to connect to a stormwater gully or maintenance hole.

7.6.3 Stormwater discharge to road reserves

7.6.3.1 Connection to kerb and channel

1. The maximum permissible discharge to the kerb and channel must be limited to 30L/s (i.e. maximum 2 single house lots per discharge point dependent on roof area), and twin 100mm diameter pipes (equivalent 150mm diameter) with approved kerb adaptors.
2. For development that is a material change of use (i.e. other than (1) above), Level III drainage (connection to kerb and channel) is only permitted if the total discharge from the development including any external catchment does not exceed 30L/s. Multiple hot dip galvanised rectangular hollow sections (RHS) 125/150/200mm wide x 75mm or 100mm high must be used (refer to BSD-8113).
3. Only approved full-height kerb adaptors, complying with BSD-8114 are permitted. The kerb adaptors must be placed in a location where service pits on the footpath will not conflict with the future pipe location.
4. Discharge into the high side kerb of a one-way crossfall street is generally not permitted for any development other than a single-house dwelling.

7.6.3.2 Connection to existing maintenance hole

Connecting to an existing maintenance hole can only be used where the diameter of the entry pipe is ≤ 675mm. For the larger diameter entry pipes, new maintenance holes must be constructed. Refer to BSD-8021 through to BSD-8053 for maintenance hole design details.

7.6.3.3 Connection to existing gully pit

1. Connection to an existing gully pit is permitted where the diameter of the entry pipe is ≤ 300mm and surcharge of the gully does not occur.
2. The pipe connection must be located below the gully lintel and within the top third of the gully pit to reduce the potential of backflows into private property.

7.6.3.4 Connection to an existing stormwater pipe

1. Connection to existing stormwater pipe is only acceptable where the diameter of the entry pipe is less than 200mm, and the host pipe diameter is at least 4 times larger than the entry pipe diameter.
2. The drainage design is in accordance with BSD-8113.

7.6.4 Piping across a public road

Piping the property system across the road is not permitted. However, extending Council's stormwater system across the public road to facilitate disposal of stormwater from the property is allowable subject to ensuring that hydraulics of the existing system are not adversely affected.

7.6.5 Provision of drainage for future upslope development of a neighbouring property

1. Provision must be made for the future orderly development of adjacent properties with respect to stormwater drainage where at least part of those upslope properties would drain through the development, or the most feasible location for stormwater drainage infrastructure to service those properties is within the development.
2. If a piped drainage connection is provided for up-slope development, the drainage infrastructure must fully extend to the boundary of the up-slope site to ensure that the up-slope property owner does not have to undertake works in the down-slope property to connect to this stormwater infrastructure.
3. Where a pipe is used to facilitate an up-slope stormwater connection (now or in future) the minimum pipe size is 225mm nominal diameter for any development. This stormwater pipe must be connected to a lawful point of discharge.
4. The development is to design any up-slope stormwater connection for fully developed catchment flows.

7.6.6 Pumped stormwater drainage

7.6.6.1 General

1. A pumped drainage system is only permitted in developments involving a material change of use such as commercial or industrial developments. Council will only consider a pumped stormwater drainage system for development comprising a material change of use or where involving a community title scheme if:
   a. no engineering solution is available to use a gravity system to discharge stormwater to a lawful point of discharge;

b. letters of refusal are received from all property owners through which the roof-water line could be taken by gravity to the street;
c. it is part of a comprehensive stormwater recycling system incorporating rainwater tanks with reuse.

2. In addition, all pumped stormwater systems must be designed to manage overflows in case of malfunction or flow rates in excess of design capacity by:
   a. ensuring that the overspill can take the form of sheet flow and reflect pre-development conditions when the pump capacity is exceeded;
   b. demonstrate that in the event of malfunction, there is no adverse impact to neighbouring properties. For example, overflows must leave the site in a safe manner and not inundate habitable or non-habitable areas within and external to the site.
3. The need for future developments having to resort to pumping of stormwater to a lawful discharge point rather than by gravitational drainage must be avoided when possible. If drainage to a lawful point of discharge cannot be gained by a gravity system a pump system will be required.

7.6.6.2 Pumps and storage design

1. The design of pump well storage and pump design must generally be in accordance with AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage where the system is not providing a lawful point of discharge for the development.
2. Where the pump system is providing a lawful point of discharge for the development, the design of the pump storage is to be no less than the run-off from a 120-minute duration 5% AEP storm. This will necessitate approximately 9,500L of storage per 100m^2 of roof area. Other design requirements are to be as per AS/NZS 3500.3:2003 Plumbing and drainage - Stormwater drainage.
3. Pumped systems must discharge directly to a gully, a maintenance hole or a drainage line. Direct discharge to a kerb and channel is not permitted. Where the kerb and channel is the only lawful point of discharge, the outlet from the pump must feed to a storage maintenance hole which then drains by gravity to the kerb and channel. Regardless of these disposal methods, a check of road capacity and existing drainage system is required to demonstrate that there are no adverse impacts.
4. All pump systems must provide an overflow (in case of failure) to a soakage trench located along the boundary of the lowest part of the site. The trench must be designed as per section 7.6.8.
5. The pump well design must consider the following factors:
   a. minimise deposition of solids;
   b. excessive foaming and air entrainment (usually caused by stormwater dropping from a high-level inlet pipe) in the wet well to be avoided;
   c. structural design to resist uplift, soil and water pressures;
   d. suitable openings to enable pump removal, and for electrical and pipe work access;
   e. sufficient space provided around the chamber for maintenance access and sufficient headroom for lifting tackle to be erected so as to raise the pumps if necessary.
6. The pump design must consider the following factors:
   a. in addition to the operating duty pump, an equivalent standby pump (i.e. of equal size to

duty pump) must be installed to safeguard against mechanical failure;
   b. in order to assure reliability of the standby pump, the pumping system must be set up by automatic rotation to ensure that the hours run by both the duty and standby pumps are approximately similar;
   c. the most likely stormwater pump station configuration is usually the submersible wet well centrifugal-type pumps normally employed in the wastewater industry. These pumps are available off the shelf and come in an extensive range of sizes and configurations. They are also not self priming, that is, they require a positive head at their inlet in order to commence pumping without initial priming (removal of air from the pump casing);
   d. the inclusion of uninterrupted power supply.
7. The property owner is responsible for all costs associated with installation, operation and maintenance and is liable for all damages as a result of system malfunction.

7.6.6.3 Basement drainage considerations

1. Where the use of a sump and pump system for managing subsoil flows is proposed as part of the stormwater management system in an area subject to the Flood overlay code, consideration needs to be given to backflow devices and ensuring the pump discharge location is above any flooding source.
2. Subsoil drainage and pump design in basements will need to allow for expected flow rates through these systems due to total water head from flooding sources. During floods, the actual flow into a drainage sump via subsoil drains can be orders of magnitude greater than flows expected in flood-free areas.
3. Roof water should not be directed into the sump in a basement. Instead it should gravity drain to the kerb and channel or road stormwater piped drainage system.
4. Where roof water drainage must pass within or under the basement, the stormwater design will need to:
   a. provide appropriate protection of stormwater pipes from vehicle impacts in the basement that may crack or dislodge any sealed joint in such pipes (this may require the use of steel pipes, or suitable encasement/protection);
   b. avoid using pits in the basement that connect to a roof water line that may become pressurised due to a high tailwater condition;
   c. consider additional ponding (and pressure) within downpipes and ensure overflows from rainwater tanks have no possibility of flowing into the basement.

7.6.7 Existing pipe drainage within property

7.6.7.1 Existing pipe drainage systems

1. Where the existing underground pipes that service the external catchments traverse the site, these pipes must be preserved from damage or structural loading.
2. Where the existing drainage system does not meet Council's desired standard of service or the design criteria of this planning scheme policy, the developer is generally responsible for upgrading the pipe drainage.

7.6.7.2 Foul-water lines

1. New stormwater connections to existing foul-water lines are not permitted, nor is it acceptable to assume that these lines are redundant.
2. Development must not damage these lines and any proposed diversion must connect to the existing stormwater system or a lawful point of discharge.

7.6.8 Soakage systems

1. Soakage systems (absorption trenches, rubble pits etc.) may only be used as:
   a. a lawful point of discharge for a single dwelling house;
   b. part of an emergency overflow system from a pump-out system.
2. In less-permeable soils (clay-based parent soils) the soakage system design:
   a. incorporates a minimum 1m-wide trench along at least 8m length of the lowest boundary;
   b. set back 1.5m from the lowest boundary;
   c. located at least 3m from any building;
   d. provides every opportunity for the stormwater to sheet flow across the lawn rather than concentrate flow in one particular area.
3. Removing stormwater by adsorption or infiltration into permeable soils (sand-based parent soils) may allow soakage systems that must be designed to suit the topography and soil type.

7.7 Road drainage and open channels

7.7.1 Road drainage standards

Major and minor drainage system design standards for different types of roads and are set out in Table 7.7.1.A.

Table 7.7.1.A—Drainage design standards for major/minor roads

Road category	Design parameter	Drainage design standard	
		ARI (years)	AEP
Major roads (district, suburban route, arterial, freight/freight-dependent development	Minor drainage system	10	10%
	Cross drainage culvert (overland flow flooding) Cross drainage culvert (creek/waterway flooding)	50 100	2% 1%
	Roadway flow width and depth limits and hazard	Refer to QUDM.	
Minor roads (local,	Minor drainage system	2 (Refer to relevant	39% (Refer to relevant

neighbourhood, freight/freight-dependent development)		development category.)	development category.)
	Cross drainage culvert (overland flow flooding) Cross drainage culvert (creek/waterway flooding)	50 100	2% 1%
	Roadway flow width and depth limits and hazard	Refer to QUDM.	

Notes:

- The design of the minor and major system in roads should in all cases ensure the major flows can be conveyed safely. This may require increasing the capacity of the minor system above that shown in this table.
- The use of a concrete surface drain across a road intersection (generally along the line of the through street) is not permitted. Instead the road geometry must be designed to capture minor system flows at gullies and pipe within an underground drainage system.

7.7.2 Hydrology and hydraulic calculations

Refer to QUDM section 7.16. Hydraulic calculations for design of stormwater infrastructure must be included on all drawings in tabular form, generally in accordance with Figure 7.7.2a.

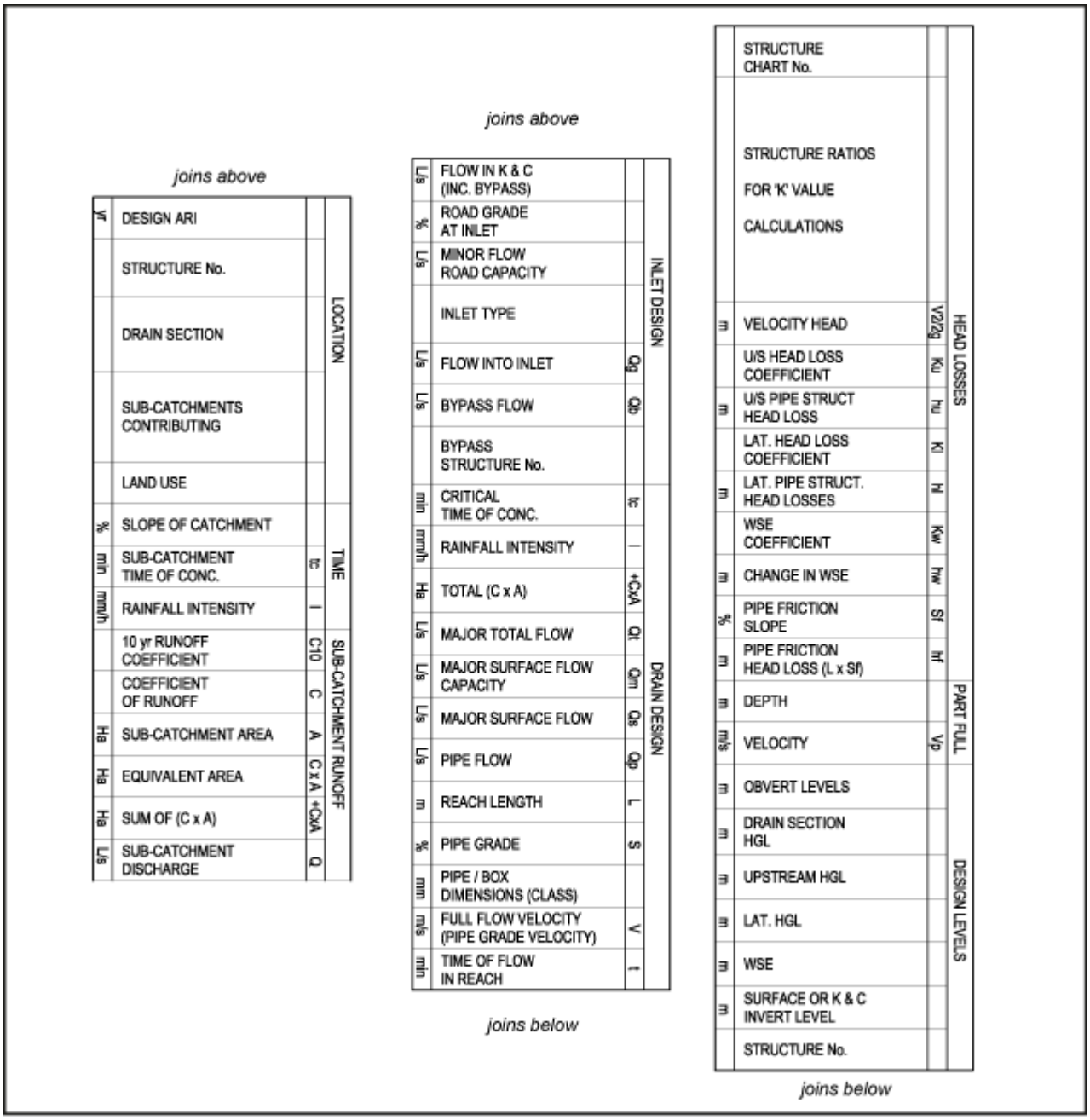


Figure 7.7.2a—Drainage calculations

View the high resolution of Figure 7.7.2a—Drainage calculations

7.7.3 Open channel or watercourse

1. The detailed design of open channels must consider design principles within QUDM sections 9.0 and 10.0.
2. For major open channel drainage systems (particularly with short times of concentration), draining to tidal systems in the Brisbane River and Moreton Bay, consideration needs to be

given to coincident flooding occurring with storm tide (drowned outlets in non-tidal areas are not permitted).

3. If open cut channels and natural watercourses are permitted within the site, easements including access areas adjacent to the channel are required.
4. Where construction of new open channels is proposed, Council requires using natural channel design and water sensitive urban design principles.
5. Where hydraulic constraints prevent a fully vegetated channel, grass-lined channels is considered and the aesthetic value of these channels is enhanced by the liberal inclusion of native canopy trees with the species and planting density selected to enable:
   a. easy maintenance (mowing);
   b. sufficient light penetration to sustain the grass cover and minimise weed growth.
6. Landscaping of the open channel is very important for visual amenity and for future maintenance. The developer must submit landscape plans prior to the hydraulic calculations starting, so Council is satisfied that the channel will be a feature and not merely 'a drain'. The preferred treatment for designed open channels must be in accordance with the publication Natural channel design guidelines.
7. Any road crossing of an open channel or watercourse must have regard to QUDM section 9.7. Where the crossing is within the Waterway corridors overlay code, the design must consider aquatic fauna movement and terrestrial fauna movement in the design of the culvert. This will at a minimum necessitate using bridges, arches or box culverts to provide a natural creek bed in the low-flow area.

7.7.3.1 Natural channel design

1. The basic principles of natural channel design (NCD) are to minimise erosion, flooding and maintenance of engineered or modified drainage channels, while improving environmental values.
2. NCD is important in all waterways (whether natural in formation or constructed to appear and operate as natural channels), especially where the waterway provides a link with bushland reserves or forms an important part of an aquatic or terrestrial movement corridor. Refer to QUDM section 9.6, for details on design principles and application.
3. Concrete lining of any new proposed channel is unacceptable as this solution does not consider whole-of-life costs nor protect/enhance environmental values. Attributes to be considered in the design include:
   a. using linear wetlands, pond-riffle systems and off-line wetlands;
   b. for batters, landscaping and maintenance access, the side slope of the channel banks must not be steeper than 1V:4H (vegetated);
   c. intermittent use of 1V:6H or flatter (grassed or vegetated) batters for emergency egress by people;
   d. boulders intermittently provided in localised areas to improve the aesthetics of the channel;
   e. intermittent use of retaining walls where batter grades could not be achieved, less than 1m in height.
4. Rock riprap packed with soil and planted is preferred as a channel lining to minimise scour,

although the design must limit scour velocity to reduce the need for riprap where possible.

5. An extended maintenance period (minimum 24 months) is required until the channel has sufficiently stabilised and vegetative cover is well established, as a channel will take at least 2 growing seasons to stabilise via vegetation and a number of rainfall events will be required to show signs of any design or construction deficiencies.
6. Culvert crossings of a natural channel are to be arches or box culverts (with link slab across low-flow channel) to provide a natural creek bed in the low-flow area to scour and maintenance requirements.

7.7.3.2 Velocity limitations for open channels

1. An open channel with critical or supercritical conditions is not acceptable.
2. The velocity in an open channel must be limited to less than 90% critical velocity in the major storm event.
3. The maximum average velocity allowed in new vegetated channels is set out in QUDM section 9.0 and must not exceed 1.6m/s in the major storm event for the design Manning's roughness (typically n=0.08). For bank-full flows (usually <2 year ARI storm) the maximum average velocity must be no greater than 1.0m/s for a manning's value of 0.15 (fully vegetated). Refer to the Council publication Natural channel design guidelines for more details.
4. Channel velocity checks must assume that undersized culverts will be upgraded to current design standards at some time in the future.
5. Box culverts should be used for culvert crossings of creek/waterways or other natural channels (proposed or existing) to reduce outlet velocity, minimise the need for energy dissipaters, reduce the potential for blockages by debris and minimise maintenance costs.
6. Where velocity is excessive and cannot be reduced by modifying the channel geometry, armouring of the channel will be required (e.g. use of rock riprap).

7.7.3.3 Maintenance access

1. Where any new channel is proposed, it is provided with suitable access for vehicle maintenance by providing a 4m berm along each side of the open channel. This berm will also provide a buffer for environmental, water quality and recreational purposes.
2. Access to potential high maintenance locations such as stormwater outlets within the channel must be provided.

7.7.3.4 Consideration of siltation in channel design

1. If a channel is proposed in a low lying area where grades are relatively flat (minimum velocity 0.6m/s), the design must consider the sensitivity of the proposed waterway/channel to siltation which may cause eventual flooding of surrounding land.
2. The hydraulic analysis must include the effects of siltation in the order of 150mm having been deposited to the channel bed.

7.7.3.5 Design Manning's roughness values

1. Guidelines for selecting Manning's roughness values where revegetating an existing floodplain are stated in Table 7.7.3.5.A.
2. Where designing new vegetated channels minimum design roughness values are to be as per QUDM - Open channel hydraulics.

Table 7.7.3.5.A—Floodplain revegetation density guidelines for various Manning's roughness values

Manning's 'n'	Description
0.03	Short grass with the water depth >> grass height.
0.04	Short grass with the water depth >> grass height on a slightly irregular earth surface. Trees at 10m spacing and areas are easy to mow.
0.05	Long grass on an irregular (bumpy) surface with few trees and irregular ground could make grass cutting difficult. Alternatively, trees at 8m spacing on an even, well-grassed surface, no shrubs, no low branches.
0.06	Long grass, trees at 6m spacing, few shrubs. Easy-to-walk-through vegetation. Area not mowed, but regular maintenance is required to remove weeds and debris.
0.07	Trees at 5m spacing, no low branches, few shrubs, walking may be difficult in some areas.
0.08	Trees at 4m spacing, some low branches, few shrubs, few restrictions to walking.
0.09	Trees at 3m spacing, weeds and long grasses may exist in some locations. Walking becomes difficult due to fallen branches and woody debris.
0.10	Trees at 2m spacing, low branches, regular shrubs, no vines. Canopy cover possibly shades weeds and it is difficult to walk through.
0.12	Trees at 1.5m spacing with some low branches, a few shrubs. Slow to walk through.
0.15	Trees and shrubs at 1m spacing, some vines, low branches, fallen trees, difficult and slow to walk through. Alternatively, a continuous coverage of woody weeds with sparse leaves and no vines.
0.20	Trees and shrubs at 1m spacing plus thick vine cover at flood level and fallen trees, very difficult to walk through. Alternatively, a continuous coverage of healthy shrubs and woody weeds from ground level to above flood level.

7.7.4 Service crossings of channels and creeks

1. Service crossings above channel bed will need to consider the following:
   a. isolated service pipe crossings located above the bed are not allowed where such a structure will affect visual amenity or create adverse hydraulic impacts;
   b. if Council is satisfied that visual amenity is not compromised, afflux from the structure

must not exceed 150mm within the immediate area of the service crossing and does not impact any private property;

c. it is preferable that the level of the crossing be as low as possible or above the 1% AEP flood level;
d. the crossing must be designed to avoid debris collection and to take account of scour at the bank entry or in the bed below the pipe;
e. maintenance holes must not be located on the assumption that the creek morphology is stable. In sand-based creeks any exposed service crossing must be avoided as the bed and banks of the creek are highly susceptible to movement. Such services must be below the expected future scour level of the creek;
f. sensitivity analysis required to estimate impacts of 100% channel blockage as a result of the service crossing. Refer to QUDM severe storm impact assessment.

2. For service crossings below channel bed:
   a. pipe crossings which are located below the bed of an unlined channel have at least 1m clear cover or additional scour protection may need to be provided along the open channel in the vicinity of a pipe crossing;
   b. if mitigation works have already been undertaken on the watercourse or if the channel is in a stable condition (and not a sand parent material based creek), the requirement in paragraph (a) may be relaxed at the discretion of Council's delegate, provided appropriate protection works are undertaken;
   c. engineering drawings must include a plan and cross-section of the proposed works and a longitudinal section of the bed and supporting evidence of potential creek scour depths.

7.8 Stormwater outlets and scour protection

7.8.1 Drainage outlets into creeks and channels

1. Design of stormwater outlets is to refer to QUDM sections 8.0 and 9.9.
2. Pipe drainage outfalls to open channels and natural creeks must be designed to control the discharge velocity and spread the concentrated discharge to avoid erosion to the bed and banks and to enhance the water quality by stripping contaminants.
3. Wherever practical, vegetated swales must be provided downstream from the pipe outlet to provide scour protection to the main creek/waterway or flow path and provide treatment of stormwater run-off.
4. The location of any proposed stormwater outlet must not be located:
   a. on or near highly mobile creek or river banks;
   b. on or near the outside of erodible watercourse bends;
   c. in areas where there is a bank or bend directly in front of the outlet.
5. All outlets are set back a distance of more than three times the bank height measured from the toe of a watercourse bank and angled into the direction of main channel flow.
6. All stormwater outlets are located a minimum 150mm above the invert level of any adjacent waterway or drain to allow for sedimentation. Where high sediment loads are expected or the receiving creek/waterway is flat (<1%), the invert of the outlet is at least 300mm (but no

greater than 1m) above the invert level of the receiving waterway.

7.8.2 Drainage outlets into parks

Where the stormwater discharge is across a public space designated for active recreation, piped drainage must be provided for the minimum 1 year ARI (63% AEP) storm to ensure that the function of the amenity is not diminished (note the design must also consider the park standard of service in regard to flood immunity). Reference must also be made for design guidance to the publication Stormwater Outlets in Parks and Waterways Guidelines (Brisbane City Council, 2003) which forms part of this planning scheme policy.

7.8.3 Energy dissipaters and scour protection

1. Generally plunge pools with rock bottoms are preferred over baffle blocks, as the latter may pose a safety hazard if any children are trapped in the stormwater drain during a storm. Plunge pools are also more desirable at outlets on environmental and aesthetic grounds.
2. Plunge pool energy dissipaters must be free draining. Where designs allow permanent ponding, they will need to consider health and maintenance aspects, and incorporate riffles and pools to enhance environmental values.
3. The spacing between blocks transverse to the flow would normally be at least 1.5 times the block width, and the spacing between consecutive baffle blocks parallel to the direction of flow at least 4 times the block height if fully drowned conditions are assumed to occur around the blocks. It should be noted that wide baffle blocks would trap less debris than narrow blocks.
4. All stormwater outlets must be provided with scour protection with a length of 1.5m or 3 times the pipe diameter, whichever is the greater, to ensure the ground is not subject to scouring velocities.
5. Using energy dissipaters must be provided at the outlet under any 1 of the following conditions:
    a. average outlet velocity exceeds 2.0m/s for the design minor storm;
    b. the distance between the outlet and a channel bank located in alignment with the outlet jet is less than 10 times the pipe diameter for a single pipe outlet, or 13 times the maximum pipe diameter for a multi-pipe outlet.

7.8.4 Rock riprap sizing and treatment

1. Design of rock channels are to be in accordance with QUDM.
2. The thickness of all riprap rock protection is 1.5 times the nominal (d50) rock size. Concrete grouting rocks will not be accepted as an alternative.
3. The minimum nominal (d50) rock size for all riprap at stormwater outlets is 300mm, or larger as required by the design. This will necessitate a total rock riprap depth of 450mm.
4. All rock voids are to be packed with topsoil and planted into with riparian plant species. Concrete grouting is not a suitable treatment for vegetated channels and creeks.

7.8.5 Drop structures

1. Drop structures may be divided into 2 categories (i.e. high drop when the depth of flow < drop height or low drop when the depth of flow > drop height).
2. Generally drop structures must be avoided where environmental concerns are an issue, for example, where aquatic life, migratory routes, and fauna corridors are maintained within a creek.
3. Drop structures in publicly accessible areas must also be avoided wherever possible for safety reasons.
4. The use of trapezoidal or irregularly shaped channels can introduce a three-dimensional flow pattern if the approach flow is allowed to accelerate toward the drop. This flow pattern can significantly reduce the efficiency of the downstream hydraulic jump, resulting in a submerged jet that is unable to be modelled by simple hydraulic calculations.
5. It must not be assumed that a hydraulic jump would occur downstream of a non-rectangular drop structure. Similarly, it must not be assumed that uniform flow conditions exist near any drop structure.
6. Fully drowned drop structures can be analysed by a simple backwater analysis using appropriate expansion/contraction loss coefficients and representative cross-sections.
7. Guidelines (if applicable) for the design of drop structures must be obtained from the following references which form part of this planning scheme policy:
   a. Brisbane City Council, 2004, Erosion Treatments for Urban Creek Guidelines;
   b. Urban Storm Drainage - Criteria Manual Vol. 2. Denver Regional Council of Governments Ed. Wright - McLaughlin Engineers, March 1969;
   c. Training Workshop on Integrated Urban Stormwater Management Vol 3, AWWA Canberra Branch and Hydrological Society, Canberra Ed. Brett C. Phillips;
   d. Peterka, A.J. 1984, Hydraulic Design of Stilling Basins and Energy Dissipaters, U.S. Department of the Interior Bureau of Reclamation Engineering Nomograph No. 25, Washington, U.S.A;
   e. Water Under the Bridge - Aspects of Culvert Design - Part 1. G.M. Witheridge, R. Tomlinson;
   f. Drop Structure Design Problems. G.M. Witheridge.
8. Where several drop structures are required to descend a steep grade reference must be made to the design of stepped spillways. A suitable reference being, Hydraulic Design of Stepped Spillways. CIRIA Report 33 I.T.S. Essery and M.W. Horner.
9. All drop structures are constructed from cast in-situ reinforced concrete or natural rocks lying on top of a rock riprap filter layer.
10. Rock-filled mattress-type protective works are not permitted due to whole-of-life cost/maintenance issues.

7.9 Water cycle management

7.9.1 General

1. Protecting the environmental values and uses of urban waterways requires an integrated or waterway health-based adaptive approach directed at managing the volume and rate of catchment run-off, the quality of the run-off, and protecting the riparian vegetation and the

habitats necessary for supporting aquatic ecosystem health. In contrast, there is evidence that solely managing stormwater quality using a best-practice approach is insufficient to adequately mitigate all the impacts of urbanisation.

2. Flood management and public safety remain as fundamental objectives of stormwater system planning and design. Stormwater management measures for waterway health enhancement should in no way compromise these objectives.
3. Stormwater management should be based on the following hierarchy of control mechanisms:
   a. preserving existing valuable elements of the natural stormwater system, such as natural channels, wetlands and riparian vegetation.
   b. helping to protect environmental values by avoiding impacts on urban stormwater quality flow with early and comprehensive forward planning;
   c. limiting changes to the quantity and quality of stormwater at or near the source of potential contaminants or changes to flow such as by using water sensitive urban design principles and erosion controls;
   d. managing any remaining impacts after preservation, keeping water pollutants on the development site and managing flows adequately through proper source controls;
   e. using structural measures, such as treatment techniques or retention basins, to improve water quality and control run-off;
   f. applying structural treatment measures on or off site before the run-off enters a waterway is required to capture mobilised pollutants and mitigate geomorphic stream damage;
   g. as a last line of control, the receiving water should be managed to maintain its environmental values in consideration of any residual impacts from stormwater pollutants or flows.
4. The local government is committed to minimising erosion and sedimentation, and the degradation of surface and groundwater quality which can result from development, both during and after construction.
5. Effective water quality control involves:
   a. implementation of stormwater quality best management practices and water quality outcomes defined in Concept Design Guidelines for Water Sensitive Urban Design (Water by Design, 2009);
   b. integration of water quantity, water quality, stream stability, frequent flow management and waterway corridor issues into the design of both permanent and temporary water quality control measures. Refer to Concept Design Guidelines for Water Sensitive Urban Design (Water by Design, 2009);
   c. staging and programming of works to minimise erosion potential;
   d. commitment to the monitoring and maintenance of water quality control measures.

7.9.2 Temporary methods of water quality control

1. Temporary water quality controls used for development are typically erosion and sediment control measures that are the first items constructed when work begins. They are used to control and filter the run-off from areas disturbed during construction.
2. Section 7.11 Council's requirements for the protection of waters from the impacts of land and infrastructure development (soil erosion and sediment control) and provides guidance on low-

, medium- and high-risk development requirements. The purpose of section 7.11 is to prescribe environmental performance standards for land-disturbing development, which when applied, will achieve protection of waters from the impacts of land and infrastructure development (erosion and sediment control).

7.9.3 Permanent methods of water quality control

1. Permanent water quality controls are implemented to control run-off water quality beyond the initial construction and maintenance stages and need to be described within a site based stormwater management plan (SBSMP).
2. A SBSMP sets out how water quality, water quantity and waterway corridor management issues are to be managed during all stages of a specific development. Such a plan may be required as a result of development being assessed against Council's Stormwater code, or to fulfil a condition of development.
3. A SBSMP is to be prepared by a suitably qualified person. The Concept Design Guidelines for Water Sensitive Urban Design (Water by Design, 2009) give guidance for the preparation of stormwater quality management plans.

Note—A suitably qualified person is one (or more) of the following:

- For urban stormwater quality and flow management—a person with relevant tertiary qualifications or equivalent, including a registered practising engineer of Queensland (RPEQ) (civil engineering, environmental engineering). Such persons may be responsible for a site stormwater quality management plan (site SQMP).
- For erosion and sediment control—a person who is a certified practising soil scientist (CPSS) or certified professional in erosion and sediment control (CPESC), or an RPEQ (or equivalent) with experience and training in soil science and erosion and sediment control. Such persons may be responsible for erosion and sediment control plans (ESCP).
- For wastewater management—a person with appropriate tertiary qualifications or equivalent such as an RPEQ with experience in environmental engineering or environmental scientist (or similar) incorporating waste water management. Such persons may be responsible for a site waste water management plan for the design, operation or construction of a development.
- For management of non-tidal artificial waterways—a person with tertiary qualifications or equivalent such as an RPEQ (environmental engineering) or environmental scientist (or similar) and experience in incorporating waterway management. Such persons may be responsible for a waterway management plan for the design, operation or construction of a development with artificial waterways.
- For coastal algal blooms—a person with tertiary qualifications (that is, science) or equivalent and experience in planning and managing for soil nutrients, water quality, hydrology and acid sulfate soils (for example, certified practising soil scientist or certified environmental practitioner).
- For acid sulfate soils—a person with tertiary qualifications (that is, science) or equivalent and experience in planning and managing for soils and acid sulfate soils (for example, certified practising soil scientist).

4. The provision of a SBSMP for development should:
    a. conform with principles of ecologically sustainable development;
    b. demonstrate that the development is occurring on the appropriate land capability class;

c. maximise the social value of stormwater and stormwater infrastructure;
d. protect riparian zones from disturbance;
e. adopt water conservation and recycling principles;
f. not cause or worsen flooding, or create nuisance ponding;
g. minimise the cost to the Council of maintaining permanent stormwater infrastructure.

5. Minimum reductions in mean annual pollutant loads from unmitigated developments, (to be achieved by new developments) are 80% total suspended solids (TSS), 60% total phosphorus (TP), 45% total nitrogen and 90% gross pollutants > 5mm.The water quality treatment strategy and design solution provided in the SBSMP may be derived either by:
   a. Computer Modelling Software (MUSIC) where reporting follows the procedures detailed in Chapter 7 of the Water by Design publication 'MUSIC Modelling Guidelines'; or
   b. adoption of a relevant best practice solution with supporting evidence and calculations to demonstrate the solution has been adopted correctly.

   If a proprietary stormwater treatment device(s) is included in the design solution, independent verification of the performance-metrics of this device shall be demonstrated by Stormwater Australia SQIDEP Verification Certificate, and these certified performance-metrics shall be reflected in modelling and/or calculations provided in 5(a) or 5(b).
6. The design of the permanent water quality controls is to be in accordance with the following publications:
   a. Environmental Protection (Water) Policy 2009;
   b. Publications by Healthy Waterways including Water Sensitive Urban Design Technical Design Guidelines (WSUD TDG) for South East Queensland.

7.9.4 Asset hand-over

1. Council is required to accept responsibility of stormwater quality control/management infrastructure that is, or will be, located on public land such as in parks, drainage reserves and road reserves. Where the asset is located in a park or drainage reserve, the minimum maintenance period will be 24 months.
2. Water quality assets entirely located within road reserves will only require a 12-month maintenance period. These normally constitute swales, small bioretention systems, street tree bioretention treatments and gross pollutant traps.
3. Where the bioretention basin is protected by a geo-textile and turf to protect the asset during construction, the planting of the basin will be required after rehabilitation of building and construction works is complete with a following 24 months maintenance period for the planting. This would require an uncompleted works bond to cover turf removal and geo-textile and planting/landscaping.
4. Hand-over of vegetated stormwater assets (WSUD assets) should be undertaken as a process rather than an event, in accordance with Section 2 of Transferring Ownership of Vegetated Stormwater Assets (Water by Design, 2012).
   The asset hand-over process will include a pre-start inspection, practical completion inspection, on-maintenance inspection and off-maintenance inspection. Assets considered non-compliant are required to be rectified prior to completion of the off-maintenance phase.

7.9.5 Water quality asset maintenance plan

1. A water quality asset maintenance plan will be required for bioretention basins and wetlands located in parks or drainage reserves (or any other Council asset).
2. A water quality asset maintenance plan sets out how the proposed methods of water quality control are to be maintained addresses such issues as:
   a. inspection frequency;
   b. expected clean-out frequency;
   c. dewatering and waste disposal procedures;
   d. access;
   e. consumables (e.g. oil-absorbing pillows);
   f. staff training and equipment needs;
   g. occupational health and safety requirements;
   h. estimated annual maintenance costs;
   i. performance monitoring.
3. A water quality asset maintenance plan will be required for bioretention basins located in parks or drainage reserves.
4. A water quality asset maintenance plan sets out how the proposed methods of water quality control are to be maintained addresses such issues as:
   a. inspection frequency;
   b. expected clean-out frequency;
   c. dewatering and waste disposal procedures;
   d. access;
   e. consumables (e.g. oil-absorbing pillows);
   f. staff training and special equipment needs;
   g. occupational health and safety requirements;
   h. estimated annual maintenance costs;
   i. performance monitoring.

7.9.6 Water quality monitoring

1. Water quality monitoring will give an indication as to whether the design predictions were accurate, the pollutant removal performance of the water quality control methods, and whether alternative or additional stormwater quality management practices may need to be employed.
2. The approved SBSMP will nominate whether water quality monitoring is required for the proposed development, monitoring and assessment requirements.

7.10 Title encumbrances

7.10.1 Drainage easements

Easements in favour of Council are often required when land is developed. Council requires easements associated with stormwater infrastructure in the following instances.

7.10.2 Roof-water reticulation and underground drainage

1. This easement allows for the construction and/or maintenance of underground drainage. Easements will be required in the following circumstances:

a. newly constructed roof-water lines in new subdivisions where the pipe nominal diameter is 225mm or larger;
b. where new stormwater lines will at some point in the future provide a drainage connection for a development located either up slope or adjacent to the site;
c. over an existing stormwater line that is owned or maintained by Council;
d. newly constructed roof-water lines providing a connection to more than 2 allotments.

2. The minimum easement width required over any stormwater line that will provide a drainage connection for future development in up-slope or adjoining properties is 1.5m minimum regardless of pipe size.
3. The minimum easement width for any roof-water drainage reticulation pipes of 225mm and 300mm diameter must be 1.5m.
4. The minimum easement width required for 375mm to 900mm diameter/wide underground pipe drainage that will be maintained by Council is 3m.
5. The minimum easement width required for 1050mm or greater diameter/wide underground pipe drainage that is or will be maintained by Council must be the outside pipe diameter/culvert box width plus 1m from each edge of pipe/culvert.

7.10.3 Overland flow

1. These easements identify overland flow paths through a site and provide for passage of stormwater along the easement. Unless approved by Council, the easement prohibits the erection of structures, the alteration of surface levels, and any activity within the easement which may obstruct the flow of run-off (e.g. debris retentive fences, landscaping, walls, filling).
2. The easement for overland flow must extend over the 2% AEP flood extent.
3. If a volumetric easement is sought, it must extend to the underside of any building suspended over/near the overland flow path (to protect undercroft areas ability to convey floodwaters), or the PMF level, whichever is higher. This is because all open easements provide some ability to convey floodwaters from storms larger than the design event in the vertical space above an easement.

7.10.4 Land subject to creek/waterway inundation

An easement over the 1% AEP inundation extent is required to preserve hydraulic conveyance and floodwater storage for areas inundated by creek/waterway flooding and allows Council to assess any proposal for development or modification of the easement.

7.10.5 Access

Access easements permit Council to gain access from a public road to a property to facilitate maintenance of the stormwater drainage network (unless agreed otherwise by the property owner, the access is usually the most direct route through the property). These easements are usually combined with any of the other easement types.

7.10.6 Combined underground/above-ground drainage

Combinations of the above easement types will often be required (e.g. underground and overland

flow) where there is an overland flow associated with piped drainage.

7.10.7 Open cut drainage

This type of easement allows for the construction and maintenance of an open drain or channel within the easement and is wide enough to incorporate the 2% AEP or 1% AEP flood inundation extent and any maintenance berm along the top of the open channel.

7.10.8 Stormwater outlets from road reserves

Easements are required over drainage outlets from road reserves for maintenance purposes where that land is not owned by Council.

7.11 Erosion sediment control

7.11.1 Qualifications

1. Erosion Hazard Assessment and Certification must be undertaken by a suitably qualified and experienced professional as defined in the most current version of the Brisbane City Council Erosion Hazard Assessment (EHA) form and Supporting Technical Notes.
2. Concept erosion and sediment control plans, erosion and sediment control plans, erosion and sediment control programs, design certificates and inspection certificates must be prepared and certified by a suitably qualified and experienced professional. This person must have successfully completed an advanced specialised training course in erosion and sediment control, provided under the auspices of a reputable body such as the International Erosion Control Association (IECA), and be able to provide documentary evidence of such training to the Council upon request.
3. Brisbane City Council also recognises the IECA's Certified Professional in Erosion and Sediment Control (CPESC) accreditation as meeting this requirement.
4. Where engineering structures (either temporary or permanent) such as inlets, outlets, spillways and sediment basin embankments form part of an Erosion and Sediment Control Plan/Program, the design certification and inspection of such structures must be undertaken and certified by a Registered Professional Engineer of Queensland (RPEQ).

7.11.2 Information required

7.11.2.1 Information required in support of a development application

An application for any development, including material change of use, reconfiguring a lot or operational work (where not previously addressed as part of MCU or ROL), which will result in land disturbance or exposure of soil and involve an Issue listed in Column 1 of Table 7.11.2.1.A, is to include the information summarised in Column 2 at the time specified in Column 3. Further detail of the information required is provided below.

Table 7.11.2.1.A

Column 1	Column 2	Column 3

All applications	Submit a completed Erosion Hazard Assessment (EHA) form. See below for additional requirements.	With development application
EHA low risk	Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Factsheets are available outlining best practice ESC.	Conditioned with Development Approval
EHA medium risk	The applicant will need to engage a Registered Professional Engineer (RPEQ) or Certified Professional in Erosion and Sediment Control (CPESC) to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy.	Conditioned with Development Approval
EHA high risk	The applicant will need to engage a RPEQ and CPESC to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy. The plans and program will need to be certified by a CPESC.	Conditioned with Development Approval
and/or where the development proposal involves any of the following issues as described below		
Applications involving the endorsement of a staging plan	Submit an ESC Program and Plan and supporting documentation which demonstrate that the proposed staging will facilitate provision of effective ESC during construction.	With operational works application
Applications involving works which are located within a BCC mapped waterway corridor	Submit an ESC Program and Plan and supporting documentation which demonstrate how impacts on the waterway have been minimised through appropriate route selection and type of crossing and how construction of the crossing will be managed.	With operational works application
Applications for which 1ha or greater external catchment area contributes stormwater run-off to the subject site	Submit an ESC Program and Plan and supporting documentation which demonstrates that clean stormwater from up-slope external catchment(s) can be diverted around or through the site without causing either an increase in sediment concentration of the flow, or erosion on site or off site. Alternatively, if it is not feasible to divert clean stormwater from up-slope external catchment(s) around or through the site, the ESC	With operational works application

	Program and Plan must demonstrate that there is sufficient land area available to install and operate a sediment basin which is sized to accommodate the stormwater run-off from the whole up-slope catchment.	
Applications for which 1ha or greater of land disturbance will occur	Submit an ESC Program and Plan and supporting documentation which demonstrates that: a. there is sufficient land area available to install and operate an appropriately sized sediment basin; b. the run-off from all disturbed areas can be directed to a sediment basin throughout construction and until such time as the up-slope catchment is adequately stabilised against erosion.	With operational works application
Applications proposing works below 5m AHD	Submit an ESC Program and Plan and supporting documentation which demonstrates that: a. the run-off from all disturbed areas can be directed to a sediment basin throughout construction and until such time as the up-slope catchment is adequately stabilised against erosion; b. it is feasible to install sediment basins which will have sufficient storage volume to contain the design storm event i.e. the sediment basin will not be inundated with groundwater.	With operational works application
Applications proposing works on land having a slope of greater than 15%	Submit an ESC Program and Plan and supporting documentation which demonstrates that: a. there is sufficient land area available to install and operate an appropriately sized sediment basin; b. the run-off from all disturbed areas can be directed to a sediment basin: i. preliminary engineering sections of proposed sediment basins showing that they may be practically implemented on the slopes proposed; ii. preliminary earthworks plan showing proposed extent of land disturbance; iii. geotechnical report which assesses the probability of landslip instability as a result of the construction phase ESC measures.	With operational works application

7.11.3 Information required in support of operational works phase and construction phase

All development involving:

- a total area in excess of 1000m^2 of either land disturbance and/or exposure of soil;
- an issue listed in Column 1 of Table 7.11.3.A;

is required to submit the information summarised in Column 2 at the time specified in Column 3. Further details of the information required are provided in section 7.11.3.1 through section 7.11.3.6.

Table 7.11.3.A

Column 1	Column 2	Column 3
All works subject to an Operational Works Development Approval with an EHA rating of 'medium'.	Erosion and sediment control program(s) and plan(s) — See section 7.11.3.1 and 7.11.3.2 for requirements.	As indicated in the condition timing of the development approval.
	Soil testing — See section 7.11.3.3 for requirements.	As indicated in the condition timing of the development approval.
	Design certificate — See section 7.11.3.4 for requirements and Erosion Sediment Control measures.	As indicated in the condition timing of the development approval.
All works subject to an Operational Works Development Approval with an EHA rating of 'high'.	Erosion and sediment control program (s) and plan(s) — See section 7.11.3.1 and 7.11.3.2 for requirements.	As indicated in the condition timing of the development approval.
	Soil testing — See section 7.11.3.3 for requirements.	As indicated in the condition timing of the development approval.
	Design certificate — See section 7.11.3.4 for requirements and Erosion Sediment Control measures.	As indicated in section 4.2(iv) below.
	Inspection certificate — See section 7.11.3.5 for requirements and Erosion Sediment Control measures.	As indicated in section 5.2
	Schedule of registered business names — See section 7.11.3.6 for requirements.	At the pre-start meeting or prior to works commencing

7.11.3.1 Erosion and sediment control plans

The primary purpose of erosion and sediment control plans (ESC Plans) is to inform those persons constructing the development on what controls need to be implemented throughout all stages of the development from site establishment to project completion. Typically a separate

ESC Plan is required for each phase of the development including the bulk earthworks, civil construction (typically roadworks and stormwater drainage), services installation, final stabilisation and the decommissioning of construction phase sediment basins. These plans could be considered an element of complying with the general environmental duty, that is, doing all that is reasonable and practicable to prevent or minimise environmental harm.

ESC plans must:

a. be prepared by a suitably qualified and experienced professional;
b. be consistent with this standard and a current best-practice document (such as the IECA 2008 Best Practice Erosion and Sediment Control). For issues where a document (i.e. manual or guideline) is not consistent with this standard, this standard prevails to the extent of the inconsistency;
c. be based on an assessment of the physical constraints and opportunities of the development site, including those for soil, landform type and gradient, and hydrology;
d. be supported by on-site soil testing (See Section 7.11.3.3);
e. provide a set of contour drawings showing existing and design contours, the real property description(s), north point, roads, site layout, boundaries and features. Contours on, and surrounding, the site should be shown so that catchment boundaries can be considered;
f. be at a suitable scale for the size of the project (as a guide around 1:1000 at A3 for a 2ha development and 1:500 at A3 for a 3000m^2 development);
g. provide background information including site boundaries, existing vegetation, location of site access and other impervious areas and existing and proposed drainage pathways with discharge points also shown;
h. show the location of lots, stormwater drainage systems;
i. details on the nature and specific location of works and controls (revegetation, cut and fills, run-off diversions, stockpile management, access protection), timing of measures to be implemented and maintenance requirements (extent and frequency as defined in IECA 2008, Chapter 6.8);
j. show all areas of land disturbance, the way that works will modify the landscape and surface and sub-surface drainage patterns (adding new, or modifying existing constraints);
k. for each phase of the works (including clearing, earthworks, civil construction, services installation and landscaping) detail the type, location, sequence and timing of measures and actions to effectively minimise erosion, manage flows and capture sediment;
l. describe the scheduling of progressive and final rehabilitation as civil works progress, including the stabilisation of up-slope catchments prior to sediment basin removal;
m. identify the riparian buffers and areas of vegetation which are to be protected and fenced off to prevent vehicle access;
n. indicate the location and provide engineering details with supporting design calculations for all necessary sediment basins and ESC-related drainage structures;
o. indicate the location and diagrammatic representations of all other necessary erosion and sediment control measures;
p. identify the clean and disturbed catchments, and flow paths, showing:
    i. diversion of clean run-off;
    ii. collection drains and banks, batter chutes and waterway crossings;
    iii. location of discharge outlet points;
    iv. water quality monitoring locations.

q. show calculated flow velocities, flow rates and capacities, drain sizing and scour/lining protection, and velocity/energy checks required for all stormwater diversion and collection drains, banks, chutes, and outlets to waterways;
r. show waterways (perennial and non-perennial) and detail of stabilisation measures for all temporary waterway crossings;
s. locate topsoil and/or soil stockpiles;
t. prescribe non-structural controls where applicable, such as minimising the extent and duration of soil exposure, staging the works, identifying areas for protection, delaying clearing until construction works are imminent etc.;
u. include a maintenance schedule for ensuring ESC and stormwater infrastructure is maintained in effective working order (refer IECA 2008, Chapter 6 and Chapter 7);
v. include an adaptive management program to identify and rectify non-compliances and deficiencies in environmental performance (refer IECA 2008, Chapter 6 & Chapter 7);
w. provide details of chemical flocculation proposed, including equipment, chemical, dosing rates and procedures, quantities to be stored and storage location, and method of decanting any sediment basin;
x. show how post-construction water sensitive urban design bioretention devices will be adequately protected against sediment ingress during land-disturbing activities, including where applicable the transition from construction-phase sediment basins to post-construction phase bioretention basins.

7.11.3.2 Erosion and sediment control program

A construction phase erosion and sediment control (ESC) program is a set of management strategies, supporting documents and ESC plans that describe what controls are required throughout all stages of the construction of the development, including the integration and protection of post-construction stormwater management infrastructure (e.g. water sensitive urban design bioretention devices).

In addition to providing ESC plans, the ESC program must also:

a. be consistent with this standard and a current best-practice document such as the IECA 2008, Best Practice Erosion and Sediment Control. For issues where a current best-practice document is not consistent with this standard, this standard prevails to the extent of the inconsistency;
b. be supported by on-site soil testing and analysis (See Section 7.11.3.3);
c. include contingency management measures for the site, for example to ensure ESC measures are effective at all times, particularly just prior to, during and after wet weather;
d. be consistent with current best-practice standards, taking into account all environmental constraints including erosion hazard, season, climate, soil characteristics, and proximity to waterways;
e. be prepared to a sufficient standard and level of detail such that compliance with this standard will be achieved if the construction phase ESC program is correctly implemented on site;
f. include an effective monitoring and assessment program to identify, measure, record and report on the effectiveness of the erosion and sediment controls and the lawfulness of water releases (refer IECA 2008, Chapter 6 and Chapter 7).

7.11.3.3 Soil testing

Proper assessment of site soil conditions is an integral component of best-practice civil construction and erosion and sediment control.

Proper assessment of site soil characteristics is necessary to objectively inform the selection and design of site ESC measures, the suitability of in-situ soils for fill embankment construction and stability, construction-phase water quality treatment (such as for dispersive soils), future asset protection (such as stormwater outlet protection), topsoil fertility and amelioration requirements to ensure successful vegetative stabilisation and revegetation.

Soil testing compliant with this standard is undertaken in accordance with IECA 2008, Chapter 3.5 and Appendix C, and as varied below:

a. for Chapter 3.5.4 provide full particle size grading including hydrometer analysis (AS 1289-3.6.1-2009 Methods of testing soils for engineering purposes and AS 1289-3.6.3). Refer Table 3.4a, Table 3.4b, and Table 3.4c for testing frequency and assessment levels;
b. for Table 3.4a and Table 3.4b — Dispersion Index (AS 1289-3.8.2) applies to samples returning an Emerson class number of 1 or 2. Refer to tables for testing frequency and assessment levels;
c. for Table 3.4c — Particle size distribution (AS 1289 3.6.1 -2009 Methods of testing soils for engineering purposes) applies to representative subsoil samples. Refer to table for remaining requirements.

7.11.3.4 Design certificate

The design certificate for erosion and sediment control must be completed using the form provided and submitted to Brisbane City Council in accordance with the development approval condition timing.

7.11.3.5 Inspection certificate

The inspection certificate for erosion and sediment control must be completed using the form provided and submitted to Brisbane City Council in accordance with the development approval condition timing.

7.11.3.6 Schedule of registered business names

The name and contact details of the landowner, superintendent and principal contractor, for the purposes of compliance with the conditions of the development approval, must be provided to Council's representative at the pre-start meeting in writing. The details must include the registered business name and ABN/ACN for each party. Any changes to these parties during construction must be notified to Council in writing within 5 business days of the change occurring.

7.11.4 Protecting waters from the impacts of development

7.11.4.1 Landowner responsibilities

The landowner of the site is responsible for ensuring that matters pertaining to the environmental

management of the site are either:

a. in compliance with the requirements of this standard, or
b. not in compliance with Section 7.11.3.1 and that specific actions are taken, which if implemented, will achieve compliance with this standard.

The landowner must document the steps taken to ensure compliance with this standard beyond merely entering into a contract with experienced engineers, superintendent and/or contractors. Such documentation is to be provided to Council upon request.

For subdivision works (i.e. reconfiguration of a lot), the landowner is responsible for ensuring that all soil surfaces associated with the development remain effectively stabilised against erosion and that sediment is prevented from entering waters. This requirement applies throughout the development works and until such time as the Council accepts the development 'off maintenance' (e.g. for contributed council assets such as parkland, roads and stormwater drainage) and whilst future private allotments remain under the land owner's legal control (i.e. until sold).

7.11.4.2 Quality assurance

Certification

The certification requirements apply to any project assessed as having 'medium' or 'high' risk according to the Erosion Hazard Assessment form.

The landowner must ensure that certification is provided to the Council, at the intervals specified below, verifying that matters pertaining to the environmental management of the development are either:

a. in compliance with this standard, or
b. not in compliance with Section 7.11.4.1 and that specific advice has been given to the landowner, which if implemented, will achieve compliance with this standard.

Certification must:

a. be on the approved form (Appendix 2);
b. be undertaken by an RPEQ and/or CPESC;
c. be completed and lodged with Council at least 10 days prior to the prestart meeting or commencement of site works.

This requirement does not diminish the responsibility of any person involved in the development to do all that is reasonable and practicable to ensure effective environmental management is implemented on site at all times and in accordance with the requirements of the applicable development approval conditions, development approvals and the *Environmental Protection Act 1994*.

7.11.4.3 Hold points

The landowner is responsible for ensuring that any hold points given within the site's ESC Plans are observed. Refer to IECA 2008 Chapter 7.8 for discussion on hold points and using inspection and test plans (ITPs).

7.11.4.4 Avoiding and minimising releases, flow and discharges of prescribed water contaminants

Sediment, earth, soil or other water contaminants must not be released from the site, or be likely to be released from the site, unless all reasonable and practicable measures are taken to prevent or minimise the release and concentration of contamination.

Performance standards, principles and measures must include as a minimum, but are not limited to, the following sections 7.11.4.5 to 7.11.4.10.

7.11.4.5 Erosion control standard

The design and implementation of best-practice erosion control principles and practices will be based on monthly rainfall erosivity ratings as defined within IECA 2008 Table 4.4.1 and Table 4.4.4 unless noted otherwise in this standard.

Minimising soil exposure

a. Ensure non-essential exposure of soil is avoided by:
    i. restricting the extent of clearing to that necessary for access to, and safe construction of the approved works;
    ii. protecting vegetation in all other areas of the site;
    iii. minimising the duration of soil exposure by:
        A. only clearing vegetation immediately prior to an area being actively worked;
        B. staging the works to minimise the area of soil exposed at any one time;
        C. effectively stabilising cleared areas if works are delayed or works are not intended to occur immediately. See Explanatory note 1;
        D. effectively stabilising areas at finished level without delay and prior to rainfall;
        E. effectively stabilising steep areas, such as stockpiles, batters and embankments, which are not being actively worked and prior to rainfall.

7.11.4.6 Drainage control standard

The design and implementation of best-practice drainage control principles and practices will comply with IECA 2008 Table 4.3.1 unless noted otherwise in this standard.

Managing stormwater

a. Ensure clean stormwater is diverted or managed around or through the site without increasing the concentration of total suspended solids or other contaminants in the flow and without causing erosion (on site or off site). If it is not feasible to divert all areas discharging clean stormwater around or through the site, manage the clean stormwater as for contaminated stormwater, and ensure that sediment basins are sized to capture and accommodate the additional volume of run-off. See Explanatory note 2;
b. Ensure sheet flows of stormwater are managed such that sheet and rill erosion is prevented or minimised;
c. Ensure that all concentrated stormwater flows including drainage lines, diversion drains, channels, spillway and batter chutes are managed onto, through, and at release points from the site in all rain events up to and including the average recurrence interval event

defined within IECA 2008 Table 4.3.1 without causing:
i. water contamination, or
ii. sheet, rill or gully erosion, or
iii. sedimentation, or
iv. damage to structures or property

7.11.4.7 Sediment control standard

The design and implementation of best-practice sediment control principles and practices will be based on monthly rainfall erosivity ratings as defined within IECA 2008 Table 4.5.2 unless noted otherwise in this standard.

1. Sediment basins
   a. In accordance with Best Practice Erosion and Sediment Control, Appendix B — Sediment basin design and operation, IECA (2008);
   b. Ensure each sediment basin has the capacity to treat flows to current best-practice standards (see Explanatory note 3) and as a minimum to contain all the stormwater run-off from the R(Y%, 5-day) rainfall depth equal to 40mm, unless a higher standard is prescribed in the development approval condition(s);
   c. Provide sediment storage volume in accordance with Table B8 (Appendix B, IECA 2008) or as a minimum store at least 2 months sediment from the receiving catchment, as determined using the Revised Universal Soil Loss Equation (RUSLE);
   d. Ensure sediment basins are maintained with sufficient storage capacity to capture and treat the run-off for the design rainfall depth. Where sediment basins are proposed to be oversized for storage of captured water for re-use, install survey markers in each such basin to clearly indicate the level that water within the basin must be lowered to, in order to meet the storage capacity specified in requirement (c) above;
   e. Ensure sediment basins are dewatered to the appropriate level as soon as practicable after each rainfall event and no longer than 5 days after a rainfall event (see also below);
   f. Ensure stormwater captured in sediment basins is treated prior to discharge to minimise the concentration of contaminants released from the site, having due regard to forecast rainfall, and ensuring that releases are in accordance with the release limits specified in Section 5.6 (see Explanatory note 4);
   g. Ensure sediment basins and associated structures such as inlets, outlets and spillways are effectively stabilised and structurally sound for ARI rainfall events defined within Table B12 (Appendix B, IECA 2008);
   h. Ensure accumulated sediment from basins and other controls is removed and disposed of appropriately without causing water contamination.
2. Erosion and sediment controls (other than sediment basins)
   a. Ensure measures have been implemented such that the run-off from all disturbed areas flows to a sediment basin or basins. Where it is not feasible to divert run-off from small disturbed areas of the site to a sediment basin, implement compensatory erosion, drainage and sediment controls prior to rainfall to ensure that erosion of those of areas does not occur, including erosion caused by either splash (raindrop impact), sheet, rill or gully erosion processes. (see Explanatory note 5);
   b. Where it is not feasible to effectively stabilise cleared areas of exposed soil, such as areas being actively worked, implement a full suite of erosion and sediment controls, to

maximise sediment capture in those areas and minimise erosion such that all forms of erosion, other than splash erosion (raindrop impact) and sheet erosion, do not occur;

c. In areas of exposed soil where it is not feasible to either effectively stabilise the surface or implement a full suite of erosion and sediment controls, for example in the areas being actively worked and where the implementation of some erosion and sediment controls would impede construction activities, ensure contingency measures are available on site and are implemented, prior to rain, to maximise sediment capture in those areas and minimise erosion such that all forms of erosion, other than splash erosion (raindrop impact) and sheet erosion, do not occur;
d. Note: this does not apply to major erosion and sediment controls such as sediment basins. Major controls should be installed before other works commence;
e. Effectively stabilise all stockpiles, batters and embankments without delay. Where it is not feasible to effectively stabilise a stockpile, batter or embankment, such as areas being actively worked, ensure that sediment controls are installed and surface stormwater flows are managed such that erosion of stockpiles, batters or embankments is not caused by concentrated stormwater flows;
f. Ensure sediment does not leave the site on the tyres of vehicles.

7.11.4.8 Work within waterways

a. Waterways, including ephemeral and permanent waterways, must not be altered, nor riparian vegetation disturbed without prior written approval of the relevant administering authority;
b. Work within waterways:
    i. should only be undertaken during the lower rainfall hazard months;
    ii. must be promptly rehabilitated conforming to the natural channel form, substrates and riparian vegetation as far as possible;
    iii. are to be undertaken in accordance with IECA 2008 Best Practice Erosion and Sediment Control, Book 3 Appendix I — Instream works.
c. Temporary vehicular crossings of waterways must be designed and constructed to convey minimum pipe flows as defined within IECA 2008 Table 4.3.1, and remain structurally stable for all rainfall events up to the 10-year average recurrence interval event of critical duration;
d. Erosion and sediment controls must not be constructed within the riparian zone, unless it is not feasible to site them elsewhere;
e. Where waterways and drains must be modified or disturbed as part of permanent works, refer to Erosion Treatment for Urban Creeks — Guidelines for Selecting Remedial Works (BCC 1997 or later version).

7.11.4.9 Effective stabilisation and plan sealing

Prior to the sealing of the plan of survey for the development, all site surfaces must be effectively stabilised using methods which will continue to achieve effective stabilisation in the medium to long term. For the purposes of this requirement, 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, or lead to water contamination.

A site is determined to be 'effectively stabilised' if at the time of the plan sealing inspection:

a. Methods of stabilisation are:
    i. appropriate for slopes and slope lengths;
    ii. consistent with best-practice environmental management practices such as in IECA 2008; and
    iii. providing a minimum of 70% soil coverage (when viewed perpendicular to the soil surface) across any square metre of the site disturbance area.
b. Stormwater run-off from the site is not currently, and is not likely to result in visible evidence of sedimentation or erosion, or lead to water contamination, in the short, medium and long term.
c. If at the time of request for plan sealing, the method of stabilisation has not achieved a stability that has a high probability of enduring in the medium to long term, for example, inadequate grass cover or permanent approved landscape works are incomplete, the following will be taken into consideration in determining whether the site is capable of achieving medium- to long-term stability:
    i. evidence of appropriate soil testing and amelioration having been adequately undertaken;
    ii. evidence of an adequate seed mix of annual and perennial grass species being applied at an adequate rate;
    iii. evidence that appropriate grass strike and growth has been achieved for the type of stabilisation method selected.

For example, while hydro-mulch can provide an immediate and effective stabilising cover to soils, the protective cover can be relatively short lived if vegetation fails to establish before the thin layer of mulch decomposes. Similarly where the hydro-mulch specification and application rate (i.e. t/ha) provides insufficient coverage and binding of the soil to prevent erosion whilst vegetation establishes, then the site will not be considered 'effectively stabilised'.

Therefore if hydro-mulch is selected as the method of temporary stabilisation, it is important that perennial as well as annual grasses are well established at the time of plan sealing to reduce the risk of instability of the site in the medium to long term.

Note—The bonding of uncompleted works relating to erosion and sediment control (i.e. bonding of environmental outcomes) is not permitted where it is contrary to the purpose of this standard (i.e. the protection of Waters from the impacts of land and infrastructure development). This situation can be avoided through progressive stabilisation, supplementary watering and effective site management.

7.11.4.10 Release limits

1. All releases of stormwater captured in a sediment basin, unless otherwise noted in this Standard, must not exceed the following limits:
    a. 50mg/L of total suspended solids (TSS) as a maximum concentration;
    b. turbidity (NTU) value less than 10% above background;
    c. pH value must be in the range 6.5 to 8.5 except where, and to the extent that, the natural receiving waters lie outside this range.

Note—It is recommended that a site-specific relationship between turbidity and suspended solids is determined for each sediment basin. Once a correlation between suspended solids and

turbidity has been established for a sediment basin, testing stormwater for compliance with release limits, prior to release, can be done on site with a turbidity tube or calibrated turbidity meter. This has the advantage of providing immediate assessment to justify a release rather than waiting for laboratory results to confirm concentration levels and compliance. Note that post-release TSS validation is appropriate to demonstrate that the NTU/TSS correlation is being maintained.

Note—Background refers to receiving water quality immediately upstream of the site location release point at the time of the release. Where there is no immediate upstream receiving water at the location and time of the release, then the turbidity release limit (NTU) will be equal to the release limit for 50mg/L total suspended solids (TSS) based upon the onsite correlation between TSS and NTU.

2. The concentration of TSS released by dewatering may only exceed 50mg/L where it can be demonstrated and supported through documentation that:
   a. further significant rainfall is forecast to occur before the TSS concentration is likely to be reduced to 50mg/L;
   b. releasing a higher concentration of total suspended solids will result in a better environmental outcome by providing storage for the capture and treatment of run-off from the imminent rainfall and run-off;
   c. all reasonable and practicable steps have been taken to treat the water within best-practice time frames;
   d. flocculent has been appropriately applied and the concentration of TSS in the captured water has already significantly decreased.
3. For all other stormwater releases, flows and discharges from the site, the release limits prescribed in (a) above must not be exceeded unless the development is in full compliance with this standard.

7.11.5 Explanatory notes

1. In this standard, an effectively stabilised surface is defined as one that does not:
   a. have visible evidence of soil loss caused by sheet, rill or gully erosion; or
   b. lead to sedimentation; or
   c. lead to water contamination.
2. Diverting clean stormwater run-off into a sediment basin is an inferior option to diverting clean stormwater around or through the site because it will cause an increase in the volume and frequency of contaminated releases from the sediment basin. For this reason, diverting clean stormwater into a sediment basin is not acceptable unless the proponent demonstrates that diverting clean stormwater around or through the site is not feasible.
3. Research has shown that sediment basins designed on a 'batch' or total storm capture approach are only capable of treating a small percentage of the annual run-off volume without basin size becoming excessive. Innovation in sediment basin design to incorporate continuous flow treatment is likely to occur in the future and as this technology becomes available in best-practice guidelines, this technology is to be adopted where a better water quality outcome will result. In the interim the minimum basin size is as specified in section 7.11.4.7.
4. Dewatered flows from sediment basins should be compliant with the release limits specified

in section 7.11.4.10, unless it can be demonstrated that a non-compliant release occurred to facilitate a better environmental outcome. For example, higher total suspended solids concentrations may be acceptable in circumstances where further rain is imminent and it can be substantiated that releasing partially treated basin water, which has a TSS concentration exceeding the release limit, would minimise the total contamination released from the site, by providing for the capture and treatment of expected run-off. However, releasing waters from sediment basins without treatment is not acceptable.

5. Compensatory controls are erosion controls, drainage controls and sediment controls which compensate for the lack of sediment basin and are applied such that the type, timing, placement and management of controls minimise the potential for water contamination and environmental harm. This is primarily achieved by reducing the risk of erosion and subsequent sediment release, for example by turfing or mulching and managing concentrated flows in the area.

7.11.6 Reference documents

The following documents are referenced to provide interpretive guidance and detailed design information, where appropriate, to be taken into account to achieve compliance with this Standard:

a. Australian Rainfall and Run-off (AR&R);
b. Best Practice Erosion and Sediment Control, Books 1 to 5 inclusive, International Erosion Control Association, November 2008 or later version; (IECA, 2008);
c. Erosion Hazard Assessment form and Supporting Technical Notes, Brisbane City Council, 2010, or later version;
d. Erosion Treatment for Urban Creeks — Guidelines for Selecting Remedial Works, Brisbane City Council, 1997, or later version.

Note—Council has adopted IECA 2008 as the default best-practice ESC reference document for land disturbing activities within Brisbane City. This document is considered the ‘minimum standard’ for ESC and shall be used for those activities subject to, and as varied by, this standard. Use of any alternative best-practice ESC reference document that specifies a lower performance standard than IECA 2008 is not permitted.

SC6.31 Transport, access, parking and servicing planning scheme policy

Contents

1 Introduction

1.1 Relationship to planning scheme

This planning scheme policy:

a. provides information the Council may request for a development application;
b. provides guidance or advice about satisfying an assessment benchmark which identifies this planning scheme policy as providing that guidance or advice;
c. states a standard for the assessment benchmarks identified in the following table.

Column 1 — Section or table in the code	**Column 2 — Assessment benchmark reference**	**Column 3 — Standard in the planning scheme policy**
Part 8		
Active frontages overlay code		
Table 8.2.1.3	PO5	Section 5; Section 6; Section 7
Commercial character building (activities) overlay code		
Table 8.2.7.3	PO12 note	Section 5; Section 6; Section 7
Table 8.2.7.3	AO12	Section 5; Section 6; Section 7
Part 9.3		
Centre or mixed use code		
Table 9.3.3.3.A	AO21.2	Section 3; Section 4
Table 9.3.3.3.A	AO39.5 note	Section 6; Section 7
Community facilities code		
Table 9.3.5.3.A	AO6	Section 6; Section 7
Table 9.3.5.3.A	AO7	Section 6; Section 7
Table 9.3.5.3.A	AO8	Section 11
Table 9.3.5.3.A	PO18 note	Section 6
Industry code		

Table 9.3.12.3.A	AO5	Section 6
Table 9.3.12.3.A	AO6	Section 6; Section 7
Table 9.3.12.3.A	AO17	All
Multiple dwelling code		
Table 9.3.14.3.D	Car parking	Section 6; Section 7
Park code		
Table 9.3.16.3.A	AO8	Section 6; Section 7
Rooming accommodation		
Table 9.3.19.3	AO12	Section 6
Table 9.3.19.3	AO13	Section 6
Specialised centre code		
Table 9.3.25.3.A	AO8	Section 6
Table 9.3.25.3.A	AO9	Section 6; Section 7
Table 9.3.25.3.A	PO27 note	Section 4
Table 9.3.25.3.A	PO28 note	Section 7
Part 9.4		
Operational work code		
Table 9.4.6.3	PO1	All
Subdivision code		
Table 9.4.10.3.A	AO3.2	Section 4
Table 9.4.10.3.A	AO4.1	All
Table 9.4.10.3.A	AO7.1	Section 4
Table 9.4.10.3.A	PO10 note	Section 2
Table 9.4.10.3.A	AO10.1	Section 2
Table 9.4.10.3.A	AO10.3	Section 4
Table 9.4.10.3.A	AO11.2	Section 3; Section 4
Table 9.4.10.3.A	AO12.1	Section 11
Table 9.4.10.3.A	AO17	Section 4
Table 9.4.10.3.A	AO19	Section 4

Table 9.4.10.3.A	AO39.2	Section 4
Transport, access, parking and servicing code		
Table 9.4.11.3	PO1	All
Table 9.4.11.3	AO1	All
Table 9.4.11.3	AO3.1	Section 4
Table 9.4.11.3	AO4.2	Section 10; Section 11
Table 9.4.11.3	AO5.1	Section 11
Table 9.4.11.3	AO5.2	Section 11
Table 9.4.11.3	AO5.5	Section 11
Table 9.4.11.3	AO6	Section 10; Section 11
Table 9.4.11.3	AO7	Section 4; Section 7; Section 10; Section 11
Table 9.4.11.3	AO9.3	Section 4
Table 9.4.11.3	AO9.4	Section 4
Table 9.4.11.3	PO10	Section 4
Table 9.4.11.3	AO11.1	Section 4
Table 9.4.11.3	AO11.2	Section 4
Table 9.4.11.3	AO12	Section 6
Table 9.4.11.3	AO13	Section 6; Section 7
Table 9.4.11.3	PO14 note	Section 2; Section 6; Section 7
Table 9.4.11.3	AO15	All
Table 9.4.11.3	AO18	Section 3
Table 9.4.11.3	AO19.1	Section 5
Table 9.4.11.3	AO19.2	Section 5
Table 9.4.11.3	AO19.3	Section 5
Table 9.4.11.3	AO20	Section 9
Table 9.4.11.3	AO21.1	Section 9

1.2 Relationship to planning scheme policies and other documents

1. The standards in this planning scheme policy supersede all other design standards provided for in a planning scheme policy.

2. Where this planning scheme policy is silent, alternative reference sources should be sought in order:
   a. Austroads Guide to Traffic Engineering Practice;
   b. DTMR Road Planning and Design Manual;
   c. AS/NZS 2890 (Set):2009 (use of AS/NZS 2890.1 is only acceptable where called up in this planning scheme policy).
3. This planning scheme policy relates to matters dealing with transport, access, parking and servicing. Where figures indicate other elements, these elements are only for context and do not override other applicable provision applicable in the planning scheme or planning scheme policies.

1.3 Terminology

In this planning scheme policy, unless the context or subject matter otherwise indicates or requires, a term has the following meaning:

access driveway: a vehicular access to a site, across a verge between the edge of the road and the property boundary — refer to Figure a

active transport: transport via modes that are clean, green and sustainable, incorporating walking, cycling and wheeled recreational devices

car share space: a car park space for a multiple dwelling or rooming accommodation that is designated for use only for car share vehicles; car share spaces are located on private land and are to be retained as common property by the owners corporation of the site and meet the following criteria:
a. identified through appropriate signage;
b. accessible 24 hours a day and seven days a week;
c. located in a visible location;
d. is integrated and located in the primary parking area;
e. are for exclusive use of residents in the multiple dwelling or rooming accommodation.

Note—appropriate signage must be in accordance with the Transport, access, parking and servicing planning scheme policy.

circulation aisle: an aisle performing the dual function of providing access to car parking spaces and providing access to other aisles — refer to Figure a

circulation road: circulation roads which connect entry and exit driveways with circulation and parking aisles and do not provide direct access to parking spaces; they also can provide for traffic circulating between car parking areas — refer to Figure a

design peak parking demands: the greater of the peak-parking demand generated in an annual average week or the 30th highest hourly demand in the year within the Brisbane area and with similar characteristics to the site and similar scales of density

design vehicle: the vehicle type for which development is to make on-site provision as described in this planning scheme policy

driveway: see access driveway

frontage road: a road fronting a development from which an access driveway is gained; developments may have more than one frontage road

high traffic-generating potential: 200vph or more turnover for the total of the existing and proposed development

loading dock: a service area dedicated for loading and unloading of service vehicles

manoeuvring area: a part of a service area adjacent to service bays required by service vehicles to manoeuvre into the bays or to a position beside a loading dock — refer to Figure a

major development: development (total existing and proposed) with a total peak hour vehicle generation rate greater than 25vph

major public transport interchange: a railway station, bus station, ferry terminal or interchange which includes dedicated platforms, docks, bus parking bays, seating and ticketing facilities

occasional access: access by a design vehicle on an infrequent basis, being no more than 1 visit per week

parking aisle: an aisle used by cars to gain access to a parking space — refer to Figure a

queuing area: an area of roadway within the site free from parking and servicing spaces that is available for the storage of vehicles in a queue between the driveway and the first point of conflict; a queuing area ensures that entry vehicles do not queue in the street and exiting vehicles do not conflict with traffic control points in the parking area — refer to Figure a

regular access: access by a design vehicle on a regular or frequent basis, being more than once per week

service aisle: a portion of the roadway within a site that is between the access driveway and the service area; service aisles may form part of the internal circulating road system — refer to Figure a

service area: an area within the site allocated for the manoeuvring, standing, loading or unloading of service vehicles — refer to Figure a

service bay: a parking bay for service vehicles engaged in loading or unloading — refer to Figure a

service vehicle: a vehicle used to supply or remove goods or services to or from a development or used by a tradesperson

sight distance: the distance over which visibility occurs between a driver and an object or between

two drivers, at specified heights above the ground

sightline: a straight line of clear view between two objects over which sight distance is measured

transport network: the network including minor and major roads, pedestrian and cycle paths and public transport routes and facilities

veloway: a wide, high-speed commuter bicycle pathway along a major corridor

2 Transport impact assessment

2.1 Guideline for a transport impact assessment report

1. A development capable of having a significant adverse impact on the external transport system or the adjacent community, including land uses with high trip-end densities should be accompanied by a report addressing the transport impacts of the development which is prepared by an experienced traffic engineer who is a Registered Professional Engineer Queensland.
2. Uses with high trip-end densities include, but are not limited to:
   a. backpacker hostels (defined as short-term accommodation);
   b. office buildings and office parks;
   c. transit centres;
   d. educational establishments;
   e. hospitals;
   f. hotels/motels;
   g. major indoor and outdoor sport and recreation facilities;
   h. higher density residential development;
   i. transit oriented development;
   j. places of worship;
   k. industrial developments;
   l. restaurants;
   m. retirement villages;
   n. shopping centres;
   o. convention centres.
3. A transport impact assessment report is required if reconfiguring a lot where:
   a. the site is more than 1ha in the Emerging communities zone; or
   b. the site is more than 7,000m^2 in the Low density residential zone; or
   c. the number of lots is 20 or more.

2.2 Purpose and content of transport impact assessment report

1. The primary objective of the transport impact assessment report is to demonstrate compliance with all relevant codes.
2. A transport impact assessment report includes the following information for the site and the adjacent transport network (streets and intersections) within the sphere of impact of the development:
   a. An assessment of present traffic operations and safety without the development.

b. An assessment of traffic operations and safety for the following scenarios:
    i. at completion of the development, and if the development is staged, also at each significant stage prior, including a comparison between current traffic arrangements and proposed traffic arrangements and an outline of the works proposed to offset anticipated traffic impacts;
    ii. without the development on a 10 year planning horizon from completion of the development;
    iii. with the proposed and any additional upgrading works proposed in conjunction with the development on a 10 year planning horizon from completion of the project.

Note—Council should be consulted regarding the expected traffic growth rates for assessing the future scenarios.

c. A statement describing how the development will provide for safe and convenient movement to, from and within the site.
d. A statement describing how the development will facilitate walking and cycling and greater use of public transport in preference to using private motor vehicles for trips to and from the development.
e. A statement describing how public transport services and infrastructure will be improved as a result of the development, particularly where relating to indented bus bays and bus shelters.
f. A statement describing the measures used to ensure maximum accessibility from the site to public transport, including where future public transport services are envisaged.
g. A statement describing the measures used to ensure that through traffic is not introduced into local street systems.
h. An assessment of existing parking supply and demand in the vicinity of the development for both on- and off-street parking, and an assessment of the impact of the development on this parking supply and demand.
i. A statement describing the appropriate provision for parking in the development based on land use and the potential for trip-making by public transport, or by walking and cycling.
j. A statement describing the appropriate provision for on-site bicycle parking facilities.
k. A statement describing whether the proposed means of ingress to or egress from the development are adequate and located appropriately according to the road hierarchy.
l. An assessment of the provisions made for the loading, unloading, manoeuvring and parking of service vehicles within the development and on the subject site.
m. An assessment of refuse storage area/s and demonstration of safe vehicle access for the removal of refuse.
n. An assessment of the proposed routes within the development used by service vehicles associated with the development, and the impacts of heavy vehicle movements on these routes.
o. An assessment of the potential for integration of access with adjacent development through sharing of common ingress and egress arrangements.
p. An assessment of the impacts on public transport, traffic operations and parking as a result of any temporary works required during construction.
q. A record of any comments made by the Department of Transport and Main Roads, Translink or any other State planning authority that comply with the rights and powers of these agencies.
r. An assessment of the existing and likely future amenity of the surrounding area, and of the potential impacts of the development on that amenity.

s. A statement describing all of the assumptions made in the preparation of the report and the design parameters adopted in the technical analysis.
t. A statement describing how traffic generation and parking proposed rates (based on gross floor area) are supported by reference to publicly available documents or attaching actual traffic survey data for a similar activity.
u. A statement describing how the layout of the development provides for the safe movement of pedestrians and cyclists within the development and to/from the core of the development and the frontage streets, taking into account the location of public transport and pedestrian facilities.
v. An assessment of the operation of any security boom gate or card reader and its impact on vehicle queuing on the frontage roads.
w. An assessment of traffic signals operation based on existing signal phasing, including impact on adjacent intersections.

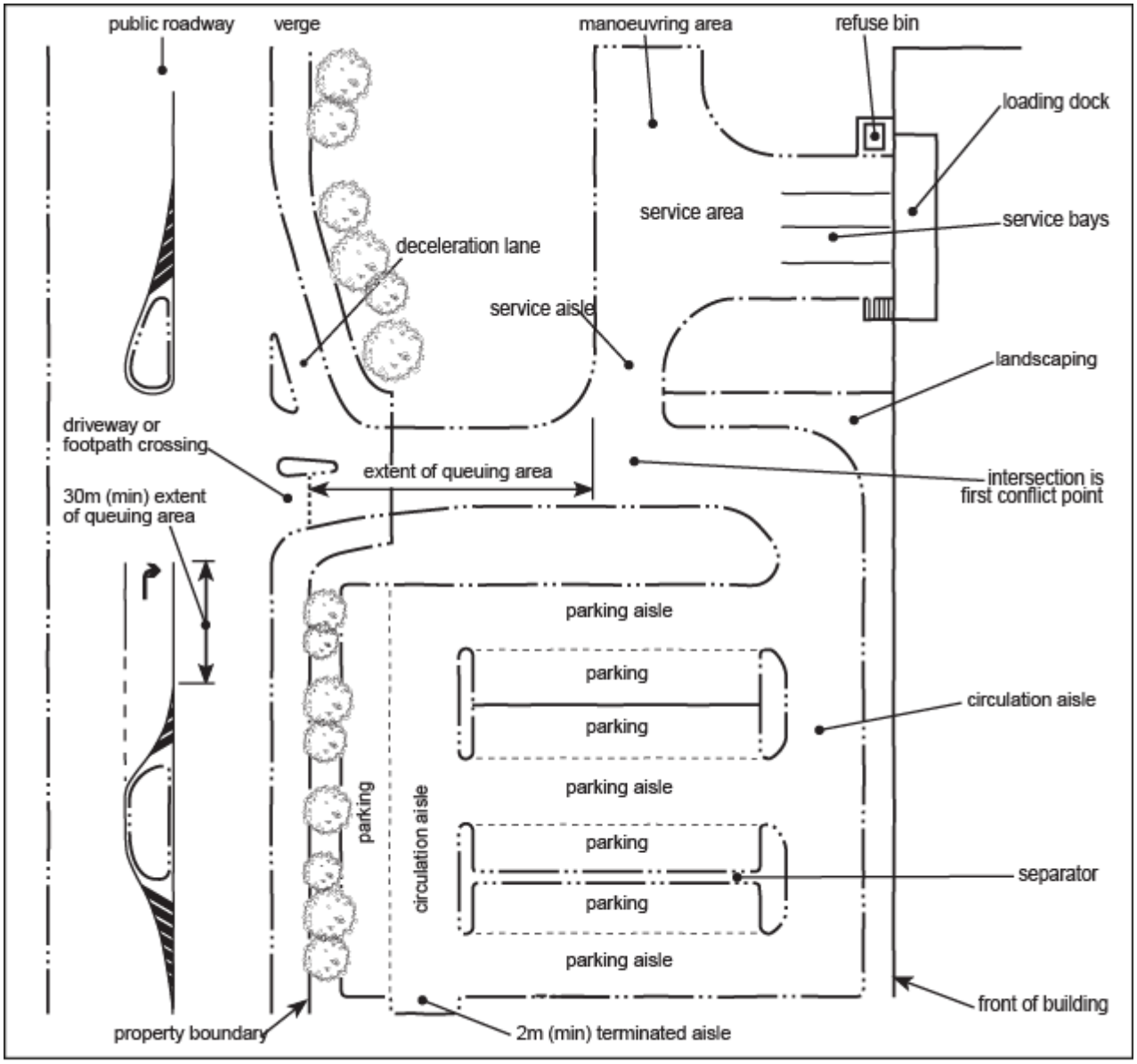


Figure a—Illustration of definitions

View the high resolution of Figure a—Illustration of definitions

3 Design service vehicle standards

3.1 Design service vehicle selection

1. Internal parking bays and road layouts are designed to accommodate the largest service vehicle likely to regularly access the site.
2. The standard design service vehicle types are nominated in Table 1 (columns 2, 3 and 4) for each development type.
3. The design service vehicle nominated in Column 2 is used for access driveway design, and

design of an adequate on-site standing area as described in section 3.2.

4. The design service vehicle nominated in columns 3 and 4 is used for design of on-site servicing facilities as described in section 3.2.
5. Provision for a service vehicle may be varied from that specified in Table 1, for a development involving multiple uses or activities or for the unique characteristics of a purpose built development.
6. Section 7 describes the standards for the design service vehicle types and turning templates to which reference is made in this planning scheme policy.

3.2 Selection requirements for the type of service vehicle required

3.2.1 Occasional access for service vehicle — Table 1 Column 2

1. Site access is provided for vehicles that occasionally service a site as part of its normal operation. Examples of this type of servicing are an LRV furniture removal truck at a multi-unit dwelling or an office development. Servicing from this type of vehicle may occur outside of normal operating hours of the facility.
2. Provision for servicing by the vehicle type nominated in Column 2 of Table 1 is to ensure that:
   a. the vehicle can stand wholly contained within the Site (clear of the verge);
   b. occasional reverse manoeuvres by the vehicle are limited to one only, either to or from the Site if safe operation can be demonstrated;
   c. the swept path of the vehicle does not have a greater overall width than the access driveway.

3.2.2 Major road access for service vehicles — Table 1 Column 3

If site access is via a major road, including access via a minor road adjacent to an intersection with a major road, provision is made for servicing by the design vehicle nominated in Column 3 of Table 1 to ensure that:

a. the vehicle can enter and leave the site safely in a forward direction. The only exception to this is a refuse collection vehicle servicing a multiple dwelling development on roads other than arterial roads;
b. the vehicle can traverse the site on circulation roads and aisles to access service areas;
c. the vehicle can manoeuvre on site to allow parking and loading or unloading in a designated service area or bay;
d. the Column 2 design vehicle can stand wholly within the site without occupying any designated queue areas or blocking access to more than 50% of car parking spaces;
e. the swept path of the Column 2 design service vehicle may cover the overall width of a two-way undivided driveway.

3.2.3 Minor road access for service vehicles — Table 1 Column 4

If site access is via a minor road, on-site manoeuvring and full loading bay provision for the largest design service vehicle is not essential. Therefore, the design service vehicle nominated in Column 4 of Table 1 is used for the design of on-site servicing provisions, in accordance with section 3.2.2, subject to the following:

a. the Column 2 design service vehicle can stand wholly contained within the site without

occupying any designated queue areas, or blocking access to more than 50% of car parking spaces;

b. any on-street manoeuvring by the Column 2 design service vehicle can be limited to safe reversing onto the site in one movement only;
c. the swept path of the Column 2 design service vehicle may cover the overall width of a two-way undivided driveway.

Table 1—Development type — Minimum standard design service vehicle

Column 1 — Development type	**Design vehicle (Refer Table 20)**		
	Column 2 — Access design (occasional access)	**Column 3 — Internal design (regular access) — major road**	**Column 4 — Internal design (regular access) — minor road**
Adult store	VAN	VAN	VAN
Agricultural supplies store	LRV	LRV	LRV
Animal keeping where stables	LRV	LRV	LRV
Animal keeping in all other cases	RCV	VAN	VAN
Bar	RCV	RCV	RCV
Brothel	VAN	VAN	VAN
Bulk landscape supplies	AV	MRV	MRV
Car wash	RCV	SRV	SRV
Cemetery	RCV	RCV	RCV
Childcare centre	RCV	VAN	VAN
Club where licensed and equal to or greater than 1,500m^2	AV	RCV	RCV
Club in all other cases	RCV	VAN	VAN
Community care centre	RCV	RCV	RCV
Community residence	RCV	VAN	VAN
Community use	AV	RCV	RCV
Crematorium	RCV	RCV	RCV
Educational establishment where college, university or technical institute	AV	RCV	RCV
Educational establishment in all other cases	COACH	RCV	RCV

Extractive industry	AV	AV	AV
Food and drink outlet	RCV	Refer to Table 3	Refer to Table 3
Function facility	AV	RCV	RCV
Funeral parlour	RCV	RCV	RCV
Garden centre	AV	AV	AV
Hardware and trade supplies	AV	AV	AV
Health care service	RCV	VAN	VAN
High impact industry	AV	AV	AV
Hospital	AV	RCV	RCV
Hotel	AV	LRV	LRV
Indoor sport and recreation	RCV	RCV	RCV
Low impact industry	AV	AV	AV
Major sport, recreation and entertainment facility	AV	AV	AV
Marine industry	AV	AV	AV
Market	RCV	SRV	SRV
Medium impact industry	AV	AV	AV
Motor sport facility	AV	AV	AV
Multiple dwelling	LRV	RCV	RCV
Nightclub entertainment facility	RCV	RCV	RCV
Office	RCV	Refer to Table 2	Refer to Table 2
Outdoor sales	AV	AV	AV
Outdoor sport and recreation	RCV	RCV	RCV
Park where in a District zone precinct or where a district park, and where in a Metropolitan zone precinct or where a metropolitan park	COACH	RCV	RCV
Parking station	MRV	SRV	SRV
Place of worship	AV	LRV	LRV
Port service where marina	AV	AV	AV
Port service where ferry terminal	AV	COACH	COACH

Relocatable home park	AV	LRV	LRV
Residential care facility	LRV	LRV	LRV
Retirement facility	LRV	LRV	LRV
Rooming accommodation	RCV	VAN	VAN
Service industry	RCV	Refer to Table 3	Refer to Table 3
Service station	AV	AV	AV
Shop where liquor store, department store or supermarket	AV	Refer to Table 3	Refer to Table 3
Shop where discount department store or discount variety stores	LRV		
Shop in all other cases	RCV		
Shopping centre	AV	Refer to Table 3	Refer to Table 3
Short-term accommodation where motel	RCV	Refer to Table 4	Refer to Table 4
Short-term accommodation where accommodation hotel	AV		
Short-term accommodation in all other circumstances	RCV	SRV	SRV
Showroom	AV	AV	AV
Special industry	AV	AV	AV
Theatre where concert hall or dance hall	AV	RCV	RCV
Theatre where film studio	AV	LRV	LRV
Theatre in all other circumstances	AV	VAN	VAN
Tourist attraction	COACH	COACH	COACH
Tourist park	COACH	LRV	LRV
Transport depot	AV	AV	AV
Utility installation	LRV	LRV	LRV
Veterinary service	RCV	VAN	VAN
Warehouse where self storage	RCV	RCV	RCV
Warehouse in other circumstances	AV	AV	AV

Wholesale nursery	AV	AV	AV

Note—All large residential developments involving more than 10 units should provide separate service bays or areas.

Note—Areas provided for manoeuvring may include areas nominated as car parking spaces provided it can reasonably be expected that car parking spaces will not be in use at the time of the service vehicle visit. Exceptions to design vehicle requirements may be considered if accompanied with a sound performance-based solution.

Note—Where a use or activity is not described in the above table, requirements are discussed with Council.

3.3 Standard number of service bays required

1. The minimum number of on-site service bays provided for office, shop, food and drink outlet and short-term accommodation is shown in Table 2, Table 3 and Table 4.
2. A minimum of 1 service bay is provided for the vehicle in columns 3 or 4 for regular access and for the road type in Table 1 for any other use.
3. The total number of bays for multi-use developments is determined by the addition of the standard number of bays for the individual development components.
4. Large multi-use developments with centralised service vehicle areas may require fewer service bays than the sum of the individual component requirements.
5. If fewer service vehicles are proposed, satisfactory operation of the service area is to be demonstrated and supported by a Registered Professional Engineer Queensland.

3.3.1 Office

1. Most service vehicles accessing office developments are vans. Provision for vans is positioned near main building entrances and can be in the form of a short-stay layby area. A bay provided for a van is clearly visible from an access driveway or a frontage road and outside a secured area.
2. A drop-off and pick-up area is located in the site near to a building entrance. A suitable taxi area is provided in the form of a short-stay layby area. Layby taxi parking spaces are included in the visitor parking calculation.
3. If the development incorporates emergency power generating facilities, provision for a LRV fuel delivery vehicle is required.
4. Developments exceeding a gross floor area of 1,000m^2 provide for access and on-site standing of an LRV such as a furniture removal van. A dedicated service bay is not required for this vehicle.

Table 2—Service bays required for office

Gross floor area (m^2)	**Service bays required**			
	VAN	**SRV**	**MRV**	**LRV**
0—999	-	1	-	-
1,000—2,4999	1	-	1	-

2,500—3,999	2	1	1	-
4,000—5,999	3	1	1	-
6,000—7,999	4	1	1	-
8,000—9,999	4	2	1	-
10,000—14,999	4	2	1	-
15,000—19,999	5	2	1	-
20,000—34,999	5	2	2	-
35,000—49,999	5	2	2	1
50,000—64,999	6	2	2	1
65,000 and over	6	2	3	1

3.3.2 Shopping centre

1. The following requirements apply to shopping centres:
   a. Table 3 applies for each individual shop segment comprising the development with a gross floor area more than 200m^2, if each segment is separately serviced via an access driveway on a public road.
   b. The service bays for each segment where practical, are located immediately adjacent to that segment.
   c. Specialty shops in a shopping centre with a gross floor area less than 200m^2 will be grouped together and the gross floor area summed. This total area is treated as a single shop segment for the purposes of applying Table 3 to the extent that such groupings share a common service facility. For this purpose, MRV class vehicles will be provided for in lieu of LRV and AV class vehicles.
2. For a shopping centre in the City centre zone precinct of the Principal centre, LRV class vehicle can be substituted for an AV class vehicle as a design vehicle.

Table 3—Service bays required for shop, food and drink outlet or service industry

Gross floor area (m^2)	**Service bays required**				
	VAN	**SRV**	**MRV**	**LRV**	**AV**
0—199	-	1	-	-	-
200—599	1	-	1	-	-
600—999	1	1	1	-	-
1,000—1,499	2	1	1	-	-
1,500—1,999	2	2	1	-	-
2,000—2,799	2	2	2	-	-

2,800—3,599	2	2	2	1	-
3,600—4,399	3	2	2	1	1
4,400—6,499	3	2	2	1	1
6,500—8,499	4	2	2	1	1
8,500—11,499	4	3	2	1	1
11,500—14,749	5	3	3	1	1
14,750—17,999	5	3	3	1	1
18,000—20,999	6	3	3	1	1
21,000—23,999	6	3	3	2	1
24,000—26,999	6	3	3	2	2
27,000—29,999	6	3	3	3	2
30,000—32,999	7	3	3	3	2
33,000—35,999	7	3	4	3	2
36,000—38,999	8	3	4	3	2
39,000—41,999	9	3	4	3	2
42,000 and over	10	3	4	3	2

3.3.3 Short-term accommodation where accommodation hotel or motel

The following applies to short-term accommodation if an accommodation hotel or motel:

a. The following provision is made for public areas such as bar, tavern, restaurant, meeting rooms and convention rooms:
   i. 1 MRV per 6,000m^2;
   ii. 1 van per 1,000m^2.
b. A short-stay layby area is provided for tourist coaches, passenger set down, couriers (vans) and taxis near main building entrances, and is clearly visible from an access driveway or frontage road, and are outside a secured area.
c. An accommodation hotel with a large public function area is to consider provision of a site area for the standing of a television relay vehicle.

Table 4—Service bays required for accommodation hotel or motel

No. of rooms	**Service bays required**			
	VAN	**SRV**	**MRV**	**LRV**
0—199	1	-	1	-
200—399	1	-	1	1

400—599	1	1	1	1
600 and over	1	2	1	1

4 Site access design standards

4.1 General

1. The configuration of an intersection created by an access driveway satisfies the basic traffic design criteria for all intersections with regard to driver behaviour, safety of pedestrians and vehicle characteristics.
2. Treatment of an access is to vary according to its scale and nature such as a minor concrete crossover to a major signalised intersection.
3. The number of access driveways for a site is kept to the minimum necessary to allow satisfactory traffic operation for the site.
4. One access point (entrance and exit) will be approved for any particular development, except where it can be demonstrated that safety and the traffic operation of the external road system is improved, including pedestrian and cyclist safety, by a design with more than 1 access driveway.
5. An access driveway functions to provide access to car parking areas and servicing areas and is located and designed to optimise public safety and convenience.
6. A service vehicle is not permitted to manoeuvre within a circulating aisle and is not to create a conflict with other internal traffic. Separating car and service vehicle access may be appropriate, particularly when the volume of service vehicles is significant.
7. Development is designed and constructed with all internal traffic circulation on the site. The public road system is not to be used for movements between car parking or servicing areas.
8. Development with access from a signalised intersection or roundabout is to dedicate land on the intersection approach for public road to ensure lawful priority of traffic movements under the *Transport Operations (Road Use Management) Act 1995* . The amount of land required for road purpose is to be determined by the intersection design and confirmed by the Council.
9. If a site has more than 1 road frontage, the primary access must be from the lowest order road, except where the traffic generated by the development would significantly compromise the amenity of a minor road. In some cases, ameliorative works may be required in a minor road to alleviate possible amenity impacts.

4.2 Location

1. When determining the location of an access driveway, the following standard design constraints are taken into consideration:
   a. the characteristics of frontage road (type, traffic volumes, and vertical and horizontal geometry);
   b. the sight distance requirements;
   c. the location of intersections, median openings, other driveways, interruption to pedestrian movement on the walkway or bikeway;
   d. the queue and turn lane lengths at signalised and unsignalised intersections;
   e. the location of existing above- and below-ground services, bus stops, taxi ranks, loading

zones, traffic control devices and significant trees;
f. pedestrian and cyclist requirements;
g. other Council planning scheme policy requirements, such as landscaping;
h. requirements of State transport authorities (if relevant).

2. Access to a development is not permitted through bus stops, taxi ranks, pedestrian crossings, pedestrian refuges or traffic control devices.
3. An access driveway and its splay is not to protrude across property boundaries, or the projection of such a boundary line to the carriageway, except where joint property access is proposed.
4. An access driveway is located as far as possible from an intersection, and other driveways and median openings, except if in a restricted area where it can be demonstrated that safety and operational performance of the transport system are not compromised.
5. The minimum distance of an access driveway from an intersection or other feature is specified in Table 5, and is measured from the point at which the frontage property boundaries intersect, disregarding any existing or proposed truncations.

Table 5—Standard driveway location

Type of frontage road for access	Adjacent feature	Minimum separation of minor driveway from adjacent feature
Minor	minor road intersection	10m from the property boundary of an intersecting road
	major road intersection	20m from the property boundary of an intersecting road
	Median break	10m from the median nose
	Adjacent driveway	3m along the kerb to the edge of driveway
	Traffic signals	Clear of the queue areas and turning lanes
Major	minor road intersection	20m from the property boundary of the intersecting road
	major road intersection	30m from the property boundary of the intersecting road
	Median break	15m from the median nose
	Adjacent driveway	15m along the kerb
	Traffic signals	Clear of the queue areas and turning lanes

4.3 Access driveway grades

The grades of access driveways are to comply with the grades shown on BSD-2021, BSD-2024, BSD-2025 and BSD-2026.

4.4 External considerations

1. If access can satisfactorily be provided from a minor road, access is not provided from a major road.
2. Access from a major road, where permitted, is restricted to left-in/left-out traffic movements by the construction of a central median which ensures right turns in/out of the site are not possible.
3. If all road frontages are of equal classification then the Council is to be consulted in respect of an approved access location option.
4. Road widening and resultant land dedication may be necessary for the introduction of a median, deceleration lane, left turn lane or right turn lane for access to a development.
5. Median breaks are not provided on major roads to provide ingress to or egress from development sites, unless it is demonstrated that the operation of the road network would not be compromised.
6. If it is demonstrated that the operation of the road network would not be compromised by a median break, single median breaks may be used to provide access to more than one contiguous development, by positioning the break opposite a driveway on a common boundary, or via internal access easements.
7. If a median break is provided, it is accompanied by an indented right turn lane long enough to accommodate the design 95th percentile queue based on the 10 year design horizon from the opening date.
8. A median break is to be considered for a major development where:
    a. The entrance/exit is such that it can function as a public street with respect to priority controls. Land dedication as road will often be necessary to achieve this.
    b. The spacing of the major intersections demonstrates safe current and future operations and does not prejudice plans for future major traffic control.
    c. The disruption to through traffic would be greater without the median break than if no break was provided.
    d. It can be demonstrated that shared access serving adjoining premises can be provided.
9. If a major road does not have a central median, and it is appropriate to permit right turn access, it will be necessary to provide turn lane treatments for both left and right turns into the site, which may require road widening and land dedication. A transport impact assessment and traffic analysis will be required to determine the length of turning lanes. For left or right turn lanes, a minimum length of 60m, consisting of a 30m lane and 30m taper is expected. Refer to BSD-3003.

Note—Notwithstanding any development approval, the Council always maintains the right to construct central medians or close any median break, if it is considered necessary to improve traffic operating conditions on a public road at any time in the future.

4.5 Sight distance

1. Safe operation of traffic systems depends critically on adequate visibility (sight distances).
2. If a driveway at a major development is configured as an intersection, it is to have sight distances which comply with the requirements of the Safe Intersection Sight Distance in Austroads Guide to Road Design Part 4.
3. The minimum sight distance for a driveway is specified in Table 6, and is measured from a point 5m outside the edge of the through carriageway, as shown in Figure b, with an eye

height of 1.05m and an object height of 0.60m.

4. If design modification such as driveway location and design, or changes to the configuration or level of the external road can be made to allow the minimum sight distance in Table 6, no lesser standard will be considered satisfactory.
5. If design modifications cannot provide the sight distances set out in Table 6, lesser sight distances may be considered by the Council, particularly in circumstances of low traffic volumes and familiar users with low potential for distractions, where it can be demonstrated that public safety would not be unreasonably compromised.
6. Absolute minimum sight distance standards are specified in Table 7 (eye height of 1.05m and object height of 0.60m), and these are used only where design modification cannot provide greater sight distance.
7. If driveways are in locations and situations where it cannot be reasonably assumed that vehicles will stop before attempting to cross or enter the external traffic stream, the minimum dimensions clear of the through carriageway from which sight distances are measured (3m and 4m respectively) is to be increased to 5m.
8. To ensure adequate visibility between vehicles on a driveway and pedestrians on the footpath, sight splays are provided at the property boundary as shown in Figure c. This requirement is critical where an obstruction such as a fence or landscaping is likely to obstruct the movement of pedestrians on walkways or cyclists on a bikeway.

Table 6—Standard minimum sight distance for access driveways

Speed environment (kph)	Sight distance (metres)
50	90
60	110
70	125
80	145

Table 7—Absolute minimum standards for sight distance for access driveways

Access driveway	Speed environment (kph)			
	50	**60**	**70**	**80**
Distance for driveways with design two-way peak traffic generations less than 10 per hour, on a minor road, measured from a point 3.5m out from the through carriageway	50	65	85	105
Distance for driveways with design two-way peak traffic generations less than 100 per hour, measured from a point 5m out from the through carriageway	70	85	100	115

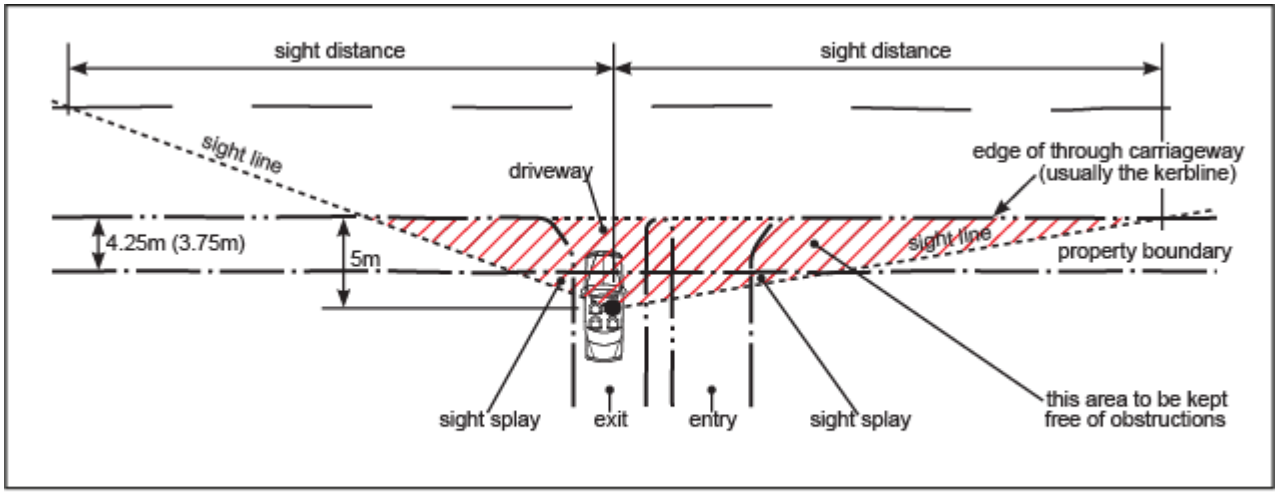


Figure b—Location of sight line

View the high resolution of Figure b—Location of sight line

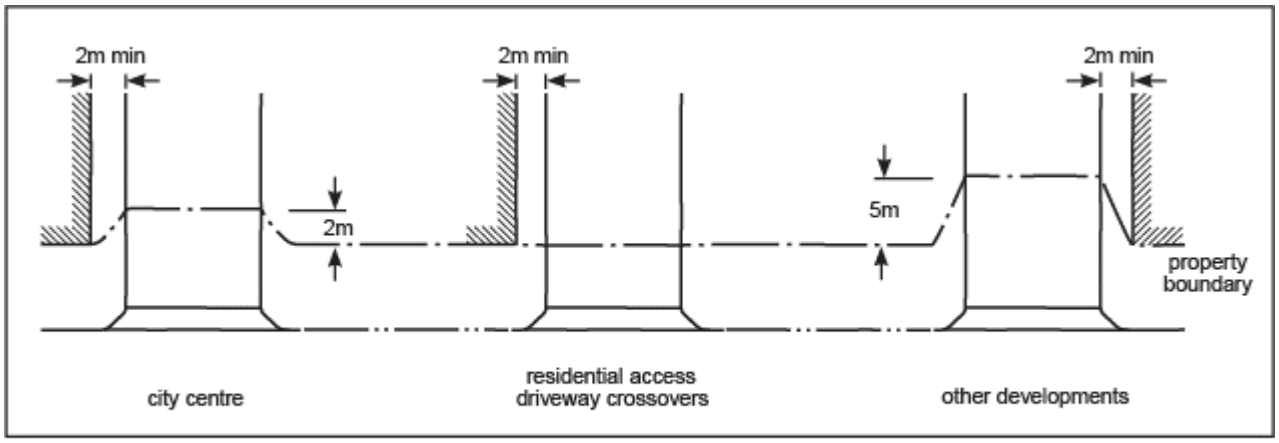


Figure c—Minimum pedestrian sight splays

View the high resolution of Figure c—Minimum pedestrian sight splays

4.6 Driveway type

4.6.1 General

1. The type and width of driveway appropriate for a development depends on:
   a. the volume of traffic generated at that driveway by the development;
   b. the type of road from which access is sought;
   c. the existing and predicted future opening day traffic volumes of the road from which access is sought;
   d. the number of car parking spaces served by the driveway;
   e. the size and type of the largest vehicle likely to use the driveway on a regular basis (service design vehicle);

f. the number of service bays served by the driveway.

2. Driveways are constructed in accordance with BSD-2021.
3. For a State controlled road, separate design standards are required.

4.6.2 Standard driveway selection

1. The driveway type is selected using the following:
   a. cars only, use Table 8;
   b. service vehicles only, use Table 9;
   c. service vehicles and cars, use Table 9.
2. Standard driveways are shown in BSD-2021.
3. Access for a development that generates significant volumes of traffic and which may cause unacceptable delays and unsafe operating conditions is designed as a channelised intersection controlled by traffic signals or a roundabout in accordance with traffic engineering design standards.

4.6.3 Driveways for use by cars only

1. The appropriate driveway for cars only is selected from Table 8.
2. Each driveway of a car parking area that has multiple points of access is designed on the basis of the number of spaces effectively served by that driveway. The driveway type is to then to be selected from Table 8.
3. Access driveway design is shown on BSD-2021 and BSD-2022 (for a dwelling house).

Table 8—Driveway selection for cars only

Turnover rate of car parking area(1)	**Type of road accessed**	**Type of driveway Number of spaces in car parking area**			
		1—25	**26—250**	**251—500**	**over 500(2)**
Low/med	Minor	B1 (3)	B2	C1	C3
Low/med	Major	B1 (6m)	C1	C2	C3
High	Minor	B1 (7m)	C1	C2	C3
High	Major	B1 (7m)	C2	C3	C3

Note 1—Low to medium parking turnover rates are likely to be generated by residential, industrial and office developments. High parking turnover rates are likely to be generated by entertainment, public transport, shop, and fast food developments.

Note 2—Car parking areas containing over 500 spaces or generating more than 1,000vpd are assessed for the need of an appropriately designed channelised access intersection, without a driveway crossover.

Note 3—On a minor road, residential (Type A pavement classification) driveways less than the 6m wide are acceptable for streetscape enhancement, provided normal manoeuvring and queuing requirements are satisfied where there are less than 6 car parking spaces, the access driveway

may be a type A.

4.6.4 Driveways for service vehicles

1. Driveway types for service vehicles are determined according to the turning path requirements of the relevant design vehicle nominated in Column 2 of Table 1. The appropriate driveway is to be selected from Table 9.
2. The following also apply to driveway selection for service vehicles:
   a. if traffic is restricted to left in/left out movements, a Type 2 driveway centre island is used;
   b. for left turn entry or exit only driveways, the relevant half of a Type C standard driveway is used;
   c. if the volume of traffic generated by a development contains a substantial proportion of service vehicles and exceeds 500vpd, then a channelised access intersection may be required in place of a standard driveway in accordance with normal traffic engineering guidelines for intersections.

Table 9—Standard driveway selection for service vehicles

Type of driveway			
Frontage road	**Minor road**	**Major road**	**Major road**
Generated traffic	N/A	<100vpd	N/A
Nominated design(1)	Driveway type(2)		Driveway type(2)
VAN	A (6m)		C1
C&T	A (6m)		C1
SRV	B1 or B2 (6m)		C2
MRV	B2 (7m)		C2
LRV	B2 (7m)		C2
RCV	B2 (6.5m)		C2
COACH	B2 (9m)		C4
AV	B2 (9m)		C4

Notes—
(1) For explanation of design vehicle types, see Table 20.
(2) For explanation of driveway type refer to BSD-2021.

4.7 Surface finish to access driveways

1. If pedestrians are to use part of the access driveway to travel along the verge, the surface is to have an acceptable slip and skid resistance standard in accordance with Reference Specification S150 Roadworks.
2. Broom-finished concrete, segmental pavers and stencilled concrete surfaces provide a good

textured finish and are preferred.

3. Exposed aggregate, stamped concrete and similar surfaces are generally not permitted.
4. Asphalt surfacing is not permitted except in non-urban areas.

4.8 Provision for queues

1. An entry and exit driveway provides for queues of vehicles so that queues do not disrupt traffic operations on a frontage road.
2. Queue provisions are measured inside the frontage property boundary of the subject development.
3. No reversing of vehicles, particularly service vehicles, is to occur in an area of high pedestrian activity or in an area where the drivers of service vehicles are not able to see approaching or following vehicles.
4. No internal intersections or parking manoeuvres are provided for in the defined queue area.
5. Entry queues are of primary importance as they have the greatest impact on traffic on the external transport network.
6. An exit queue can disrupt internal circulating traffic and consequently block entry lanes.
7. Design does not provide for any service vehicle manoeuvring or an intersection of an internal road to occur within the defined queuing area.
8. The extent of the design queuing area is a function of a number of factors including:
   a. the size of the car parking area and the design turnover rates;
   b. the type and capacity of any access control facility;
   c. the classification of the frontage road;
   d. the design of the car parking area beyond the queuing area.
9. If there is an entrance control, the boom gate or card reader is to be set back within the site to prevent queuing on to the road. The vehicle queue length is to be a function of the vehicle arrival rate and service rate of the boom gate/card reader.
10. Traffic control devices such as raised platforms and speed humps are not installed at the entrance to a development or within the queuing length specified in section 7.4.8.
11. The queue requirements shown in Table 10 are used as a guide for driveways without control devices such as boom gates, card readers, roller shutters or pay facilities.
12. The minimum standard queue provision for any car parking area is 1 vehicle and a vehicle is assumed to be 6m in length.
13. If more than one access is approved to a site, the required queuing distance is distributed among the various accesses according to the expected traffic distribution characteristics of the site.
14. The queuing area in car parks using attendant parking that is an accommodation hotel, is at least twice the length of control as that given in Table 10.
15. In instances where gates, security gates and security checks are provided at the entrance to a development, the required queuing length is provided between the property boundary and the gate system.
16. In addition to the queuing area, sufficient space to enable a car to manoeuvre to turn around and enter the road system in a forward gear is provided in front of any security gates.

17. Treatment standards for queuing areas are provided in section 7.4.8.

Table 10—Minimum standard queuing provisions

Car parking area capacity (spaces)	Number of vehicles in entry/exit queue
1—25	1
26—50	2
51—75	3
76—100	4
101—150	5
151—200	6
201—250	7
Over 250	7 plus 1% of capacity over 250 spaces (rounded upwards)
Takeaway facility/fast food	10
Drive-in bottle shop	12

4.9 Standards for traffic signs and lines

1. Direction, regulatory, warning and information signs are erected on site to control traffic movements and driver behaviour and to warn of any potential safety hazards.
2. Council's BSD drawings are used to design all traffic signs and pavement markings, whether in a public roadway or on private property.
3. For traffic signs and pavement markings not contained in Council's BSD drawings, using the Queensland Department of Transport and Main Roads Manual of Uniform Traffic Control Devices is recommended.
4. If parking spaces have been specially provided for a designated vehicle class or category of user, they are clearly signed to indicate the specific vehicle class or user such as visitor parking, parking for disabled persons, car share space, taxis, service area, motorcycles or bicycles. Standard symbolic messages are preferred.
5. Advisory parking directional signs are provided to clearly indicate the existence and location of entry and exit points to car parking areas where:
   a. parking areas are located at the rear of a development;
   b. access to the car parking area is not from the main frontage road;
   c. multiple access points serve different car parking areas;
   d. visitor parking is provided for multi-unit residential developments and is not visible from the frontage road or access driveway;
   e. ingress or egress is via one-way driveways.

4.10 Special standards in the City core and City frame

1. In the City core and City frame, intense office activities call for differing design criteria from those normally required for a suburban development. These environments are typified by the following conditions:
   a. high pedestrian volumes;
   b. high use of kerbside space, such as bus stops, taxi ranks, parking and loading zones;
   c. high level of intersection signalisation, typically at most intersections;
   d. platooned traffic flows or queue-back from signals;
   e. higher level of driver alertness;
   f. lower vehicle speeds.
2. Normal design criteria for site access may not be relevant to these conditions and appropriate design standards may reflect the lower vehicle speeds and greater driver alertness.
3. Access driveways are not provided within 30m of any signalised intersection and are located in consultation with the Council.
4. Shared access arrangements or the amalgamation of smaller lots is preferred to provide acceptable access for new developments and minimal conflicts with pedestrians and cyclists.
5. An access for development addresses the vehicle and pedestrian conflict movements and attempts to minimise conflicts and improve safety and priority for pedestrians and cyclists.
6. The design of vehicle crossings may consider the grade separation of the driveway to resolve the pedestrian, cyclists and vehicle conflicts.
7. A driveway across a walkway or bikeway carrying more than 300 pedestrians or cyclists during the busiest hour of a normal weekday is only provided if it can be satisfactorily demonstrated that pedestrian and cyclist priority and safety will not be threatened.
8. The sight distance for an access driveway is in accordance with Figure b and Figure c measured from a point 3m from the edge of the through carriageway.
9. Control facilities for car parking areas, such as card readers and ticket machines and associated queuing requirements, must be considered early in the design of the car parking areas, as they are difficult to incorporate once the car parking area is constructed.

4.11 Special standards for centres

1. Centres are located throughout Brisbane. A centre may function as a shopping centre, a commercial centre, or a combination of both and other activities. Many centres also include residential development. Centres are typified by the following conditions:
   a. high pedestrian volumes within the centre and along the external road network;
   b. external road kerbside space is not generally available for centre car parking or service vehicles;
   c. multiple accesses are required to accommodate increased traffic volumes;
   d. development accesses are treated as significant intersections typically requiring dedicated turn lanes and traffic signals based on traffic engineering analysis and design;
   e. internal traffic speeds are low but congestion levels are high, necessitating elevated driver alertness;
   f. external traffic speeds are not to compromise the integrity of the road network;
   g. a centre is to have a high level of bus public transport accessibility provided by on-street bus stops, an on-site or adjacent interchange or a combination of both;
   h. if a public transport (bus, rail or ferry) interchange is in close proximity to a centre, strong

pedestrian and cycling linkages are to be provided;
i. kerbside bus stops on a major road are to be indented;
j. typically taxi ranks are required on site and near to all major building access points;
k. end-of-trip cyclist facilities are provided for staff and convenient cyclist parking is provided for visitors.

2. Driveways are separated from adjacent intersections as far as possible, taking into account the length of queues from adjacent intersections.
3. A single access point is to be provided for both visitor and service vehicles.
4. Separate access points for visitor and service vehicles may be considered if the volume of service vehicles is significant and it can be demonstrated that more than 1 access is required.
5. If there is no separate service access, the service area is not located adjacent to the entry point or in a location where manoeuvring will interfere with traffic movements on and off the site.
6. Service vehicles, particularly for reversing movements, do not use an internal circulating aisle for visitor or customer vehicles.
7. Internal parking areas minimise conflicts with pedestrian and cyclist movements and prioritise pedestrian movements.

4.12 Rear lot internal access

4.12.1 Residential areas

1. A rear lot access way for residential development excluding the access driveway on the verge, is to comply with the requirements of Table 11.
2. The specified pavement standard does not apply to poor subgrade where the soaked California bearing ratio value is less than 5.
3. Alternative asphalt pavement may be suitable in a non-urban area under one or more of the following circumstances:
   a. the concrete construction is visually intrusive; or
   b. the cost of concrete construction is prohibitive for the length of driveway under consideration.

Table 11—Internal access requirements for rear residential lots

No of dwelling units	Distance from dedicated road	Easement width	Minimum requirements
1—3	≤40m	3.5m	Grade N25 concrete driveway: 2.5m wide, 125mm thick, F72 reinforcing mesh
4—5	≤40m	4.0m	Grade N25 concrete driveway: 3.1m wide, 125mm thick, F72 reinforcing mesh
≥6	≤40m	6.5m	Grade N25 concrete driveway: 5.5m wide, 160mm

			thick, F82 reinforcing mesh
1—5	>40m	6.0m	Grade N25 concrete driveway: 3.1m wide, 125mm thick, F72 reinforcing mesh Grade N25 concrete passing lanes: 2.0m wide x 6.0m length, 1 in 2 taper at 60m centres (1) Alternative asphalt driveway: 3.1m wide, nominal traffic loading 1.5 x 104 ESA (1) Alternative asphalt passing lane: 2.0m wide x 6.0m length, 1 in 2 taper at 60m centres
≥6	>40m	6.5m	Grade N25 concrete driveway: 5.5m wide, 160mm thick, F82 reinforcing mesh (1) Alternative asphalt driveway: 5.5m wide, nominal traffic loading 1.5 x 104 ESA

Note—
If approved by Council, alternative asphalt pavement may be permitted in non-urban areas.

4. Provision is to be made for the services of a future dwelling on a rear lot.
5. Services for a future dwelling on a rear lot can be provided by:
   a. an easement wide enough (minimum width of 3.5m) for the services to be placed alongside the driveway, including a single chord truncation at the property alignment; or
   b. laying conduits under the concrete at the time of construction of the driveway for the services to be threaded through in the future.
6. A vehicle crossing from the back of the kerb and channel to the property alignment is to comply with BSD-2021, BSD-2024 and BSD-2025 for multi-unit dwellings and group title access ways.
7. A vehicle crossing if there is no kerb and channel, such as in a rural area, is to comply with BSD-2026.
8. If an access driveway is trafficked by refuse vehicles, the driveway width is not to be less than 6.5m and is to be constructed to carry a nominal traffic loading of 1.5 x 104 ESA.

4.12.2 Non-residential areas

1. A rear lot access way for non-residential development, excluding the access driveway on the verge, is to be provided as an easement with a width of at least an 8m and include a single chord truncation at the property alignment.
2. A driveway with a minimum width of 7m is to be provided.

5 Service area design standards

5.1 General

1. Facilities for servicing developments are provided on site to ensure loading and unloading activities do not occur on the street where they could compromise the safety and capacity of the public road system.
2. The design of service areas is to provide for the operational standards of a service vehicle,

including the dimensions and vehicle turning paths in section 8.2.

5.2 Location

1. Service areas are located close to service entrances or other building entrances to ensure they are convenient and discourage the use of other areas for loading and unloading.
2. Service areas are separated from areas of passenger vehicle or pedestrian and cyclist movement.
3. If a service area is located adjacent to a residential use, it is acoustically screened to minimise visibility and noise intrusion.

5.3 Service aisles

1. Service aisles are roadways connecting service areas with driveways and form part of the internal circulation road system.
2. Standard widths for straight sections of service aisles are to comply with those given in Table 12.
3. The width of a curved section is determined by the swept path of the relevant design vehicle and is specified in Table 12.

5.4 Service areas

1. The size of a service area is determined by the addition of its components: manoeuvring areas, service bays, loading docks and refuse collection zones.
2. Figure d shows the standards necessary for manoeuvring into and out of a loading bay and is suitable for preliminary design purposes.
3. Detailed design is to use the turning templates.
4. The areas shown in are required unless drive-through servicing facilities are provided.
5. If the volume of service vehicle traffic is significant, manoeuvring areas larger than the minimum are to be provided in order to promote easier and more efficient vehicle movements.
6. Manoeuvring into a service bay is possible when all other bays are occupied.
7. Service and manoeuvring areas are clearly marked with signs and painted pavement markings to encourage correct use and discourage or restrict the parking of non-service vehicles within their boundaries.
8. The configuration of the manoeuvring area is to allow the design vehicle to dock or park in a service bay with only one reverse movement.
9. If a service vehicle is required to reverse into a loading dock, the design is to maintain the truck driver on the inside of the turning movement as shown in Figure e. This ensures that the truck driver's view of the loading bay is not obscured by parts of the vehicle or the truck load.
10. A service area that necessitates turns through angles greater than 120° at a minimum radii by an articulated or large rigid vehicle can cause tyre, pavement or vehicle structural damage and therefore is to be avoided.

5.5 Service bays

1. The service bay dimensions relevant to each design vehicle are specified in Table 12.
2. The width dimensions in Table 12 provide approximately 0.5m clearance for each side of a vehicle to allow for cabin door opening, clearance for mirrors and access to load restraints.
3. The bay length dimensions in Table 12 provide clearances for access to loads and variations in the overall vehicle size.

5.6 Fuel deliveries

Provision for fuel deliveries for any purpose such as an emergency power plant is to comply with Industry Guidelines for Fuel Systems: Diesel-Powered Emergency Generator Installations (Qld), Petroleum Industry Contractors Association (2004) and AS 1940-2004 The storage and handling of flammable and combustible liquids.

1. If a development is designed to accommodate a fuel delivery vehicle on site and the delivery occurs outside building operating times, use of an internal aisle or roadway for parking purposes may be acceptable.
2. If a development is designed to accommodate a fuel delivery vehicle on site and the delivery occurs during the operating times of the business, a separate parking bay that can be part of a multi-use area such as a forecourt or public space may be provided.
3. A fuel delivery vehicle may be a B-double, a 19m AV or a LRV.

5.7 Standard provisions for queues

1. A service vehicle entering a site is not to queue across a walkway or a bikeway or on to a public road.
2. Queuing of traffic exiting a site is to be accommodated on the site (minimum requirement: 1 design vehicle).
3. Development is designed to prevent manoeuvring and intersections of internal roads within the defined queuing area.
4. Internal roads or aisles shared by service vehicles and cars are designed to cater for the queuing requirements of a service vehicle away from any intersection.

5.8 Sight distance

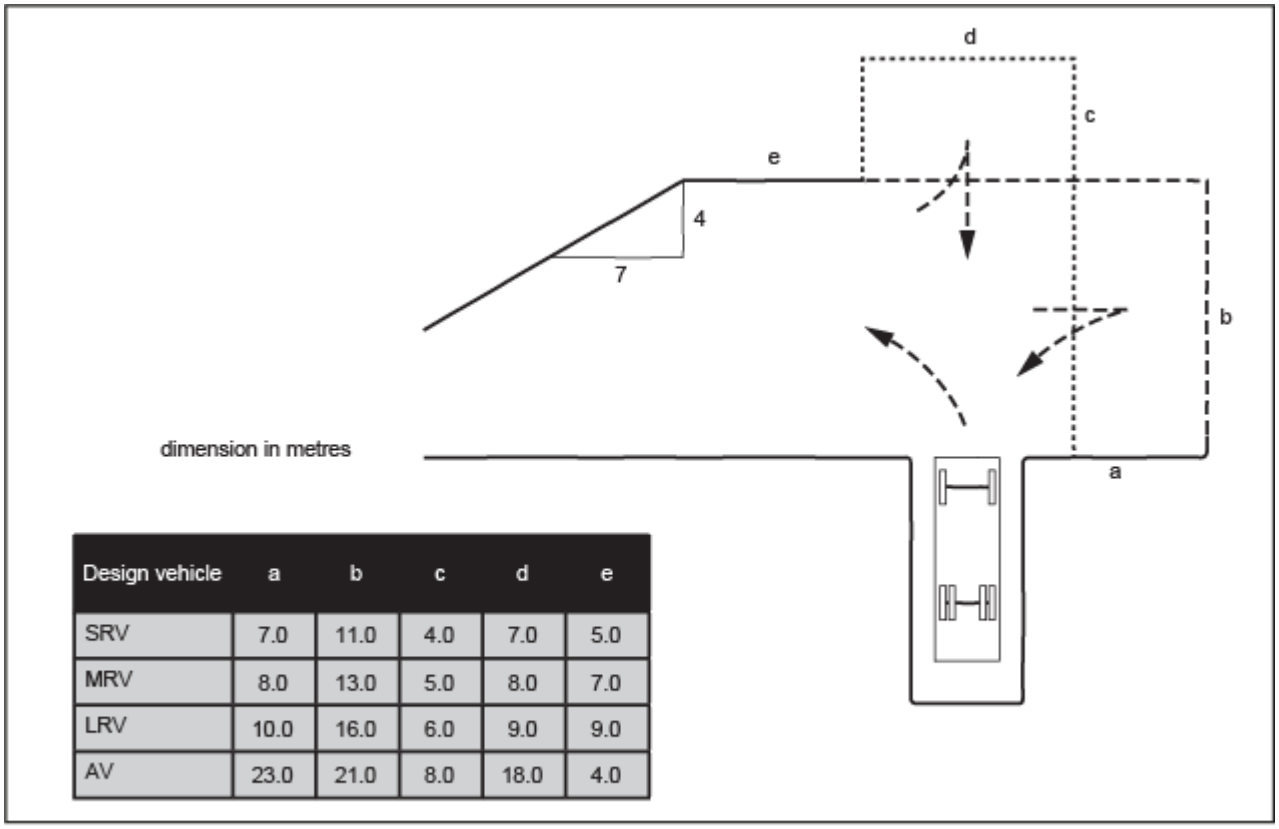
Sight distances for a service vehicle are to comply with the standards in section 4.5, except that the driver's height of eye is to be greater, depending on the design service vehicle, to a maximum of 2.40m.

5.9 Gradients

1. The maximum permissible driveway gradient is determined by the class of vehicle, including cyclists, intended to use the ramp for access in Table 12.
2. Changes of surface gradient without a transition are not to exceed an algebraic change of more than 5%.
3. If the change of grade is greater than 5%, a grade transition is provided. This is to prevent scraping the underside of a vehicle or structural damage to an articulated vehicle towing

connection (refer to Figure f).

4. A method of designing a grade transition assumes that the grade change does not exceed 5% (1:20) over a minimum horizontal distance equal to the length of the longest vehicle expected to traverse the site. For example:
   a. Algebraic change of gradient = 1:8 - 1:20 = 12.5% - 5.0% = 7.5% where >5%. Therefore, adopt intermediate gradient = 7.5% 2 + 5% = 8.75%, or approximately 1:11 over a 6.4m horizontal projection (assuming vehicle length = 6.4m) (refer to Figure g).
5. Pavements with transverse gradients exceeding 5% are avoided. While small grades typically up to 5% can be tolerated in service vehicle manoeuvre areas, changes of grade, particularly warping of slabs, are to be carefully considered to avoid unacceptable flexing of vehicles, particularly affecting articulated vehicle couplings.
6. The maximum change of grade traversed by car-carrier types of AV is in the order of 2% due to a lower than normal under-carriage clearance.



Design vehicle	a	b	c	d	e
SRV	7.0	11.0	4.0	7.0	5.0
MRV	8.0	13.0	5.0	8.0	7.0
LRV	10.0	16.0	6.0	9.0	9.0
AV	23.0	21.0	8.0	18.0	4.0

Figure d—Manoeuvring area: preliminary design

View the high resolution of Figure d—Manoeuvring area: preliminary design

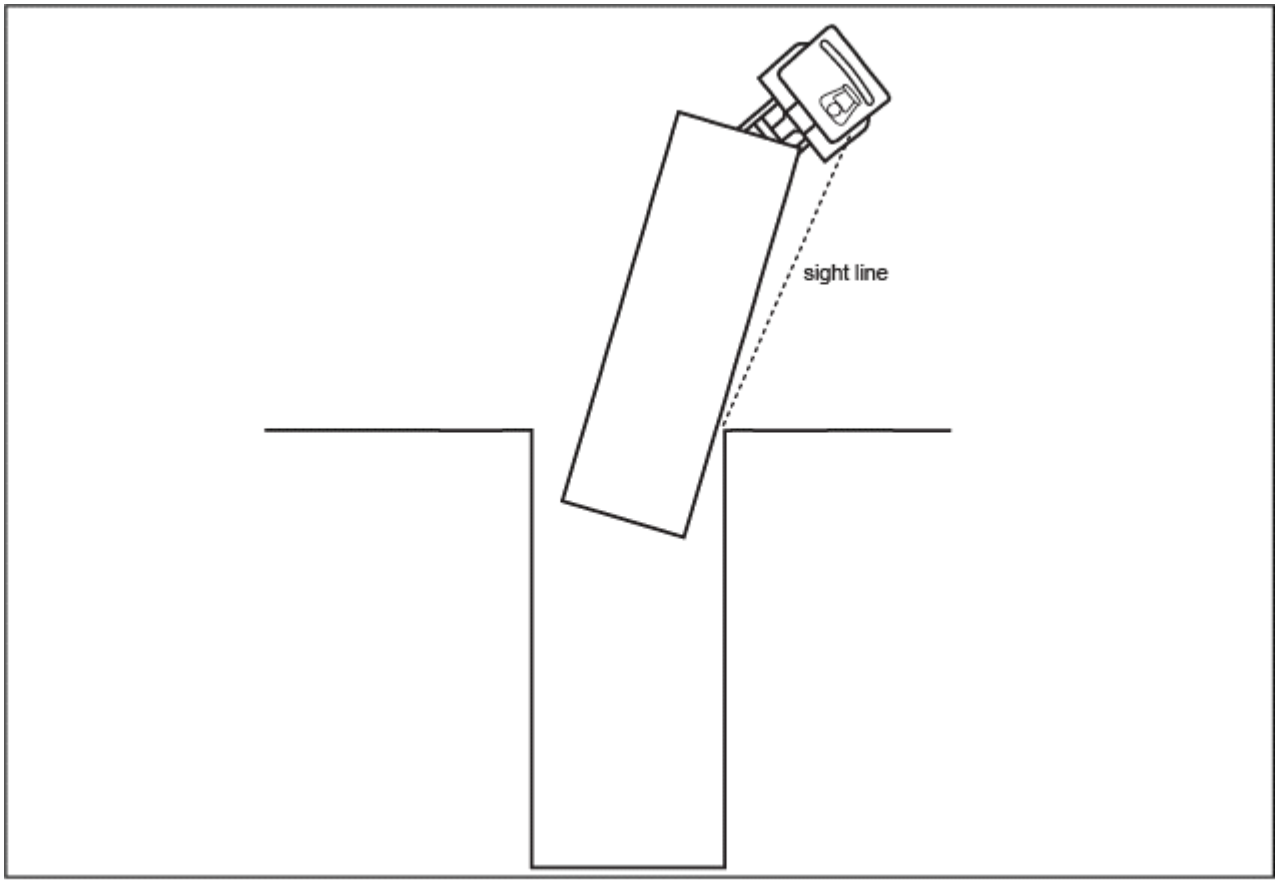


Figure e—Preferred approach to service bays

View the high resolution of Figure e—Preferred approach to service bays

5.10 Height clearance

1. The minimum height clearance required for each design vehicle is to comply with the standards in Table 12. The minimum height is appropriately and clearly signed and measured from the floor to the lowest appurtenance on the ceiling such as fire sprinklers, services, lighting fixtures or signs.
2. Care is exercised in building design to ensure adequate clearance is retained throughout any grade transition (refer to Figure h). The required height clearance cannot always be simply measured from the floor to the lowest object on the ceiling. The most critical location is where there is a gradient transition at a crest or sag (refer to Figure f, Figure g, Figure h).
3. An area of a site where there is a height clearance change is to be clearly signed. Any facility to divert over-height vehicles is clearly signed.
4. In some circumstances, streetscape design is to necessitate clear heights less than those specified in Table 12. The Council should be consulted if it appears likely that such circumstances may arise.

Table 12—Standard design dimensions for service aisles and bays

	Design vehicle[1]								
	M/cycle	**VAN**	**C&T[8]**	**SRV**	**MRV**	**LRV**	**RCV**	**COACH**	**AV**
Minimum service aisle width (m)									
- one way		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
- two way		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Minimum vertical clearance (m)[2]		2.3	2.3[3]	3.5	4.5	4.5	4	4.5	4.5
Minimum bay width (m) loading/standing	1.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Minimum bay length (m) loading/standing	2.5	5.4	14.5	7.0	9.0	11.0	10.5[5]	13.0	19
Platform height (m)[6]		-	-	0.75—0.9	0.95—1.1	1.1—1.4	-	-	1.1—1.4
Maximum gradient									
- general surface, manoeuvring, aisles, loading bays	1:20 5%	1:20 5%	1:20 5%	1:20 5%	1:25 4%	1:25 4%	1:20 5%	1:25 4%	1:25 4%
Ramps									
- straight		1:6	1:6	1:8	1:10	1:10	1:10	1:10	1:10
- curved[7]		1:6	1:6	1:8	1:10	1:10	1:10	1:10	1:10

- queuing area		1:10	1:10	1:10	1:25	1:25	1:20	1:25	1:25
- traffic control point		1:20	1:20	1:20					

Notes—
(1) For an explanation of design vehicle types, see Table 20.
(2) At changes in grade, the required clearance height is maintained at all points (refer to Figure h).
(3) Special trailers, such as horse-floats and caravans, may require greater clearance height.
(4) Operating clearances for refuse trucks are in accordance with Table 3 of the Refuse planning scheme policy.
(5) Dimension is exclusive of bin storage area and loading areas.
(6) Applicable only where the loading dock is provided.
(7) Measured at inside of constructed curve.
(8) C&T = car and trailer (maximum dimensions)

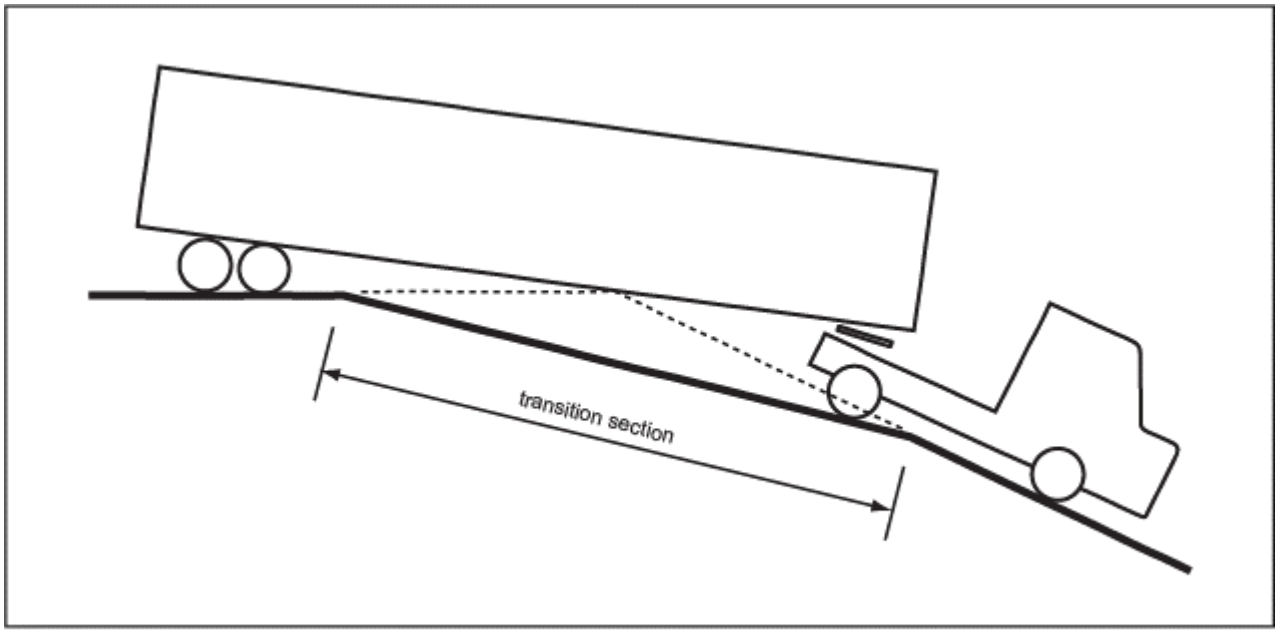


Figure f—Grade transition

View the high resolution of Figure f—Grade transition

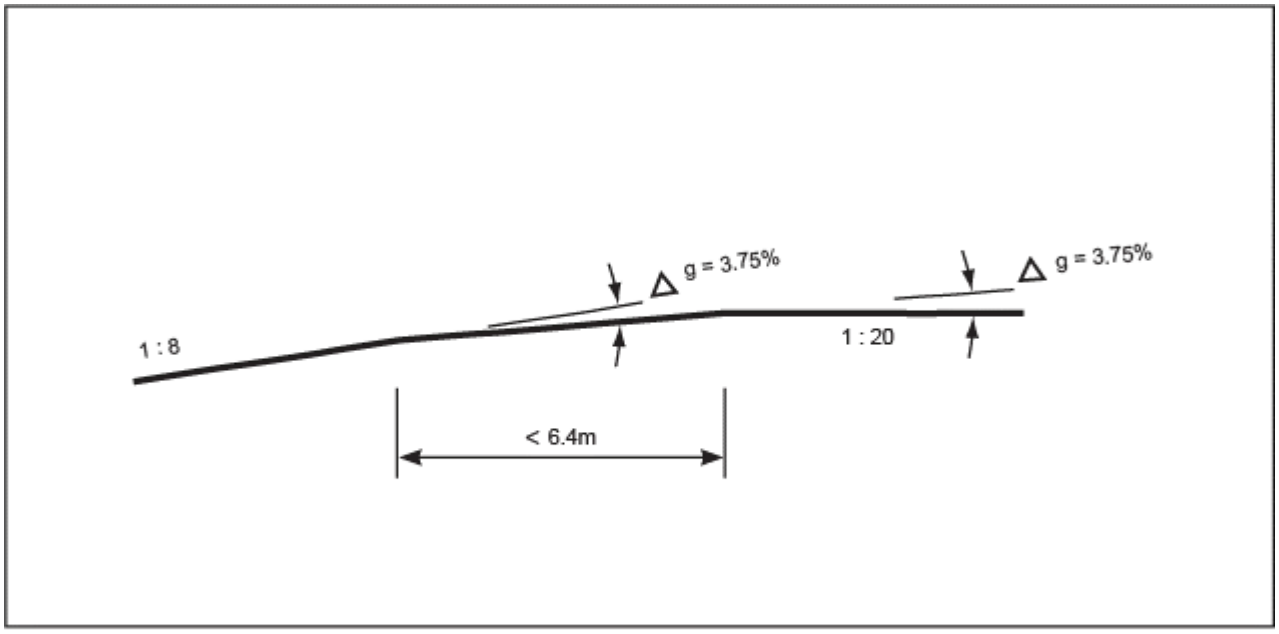


Figure g—Grade transition design example

View the high resolution of Figure g—Grade transition design example

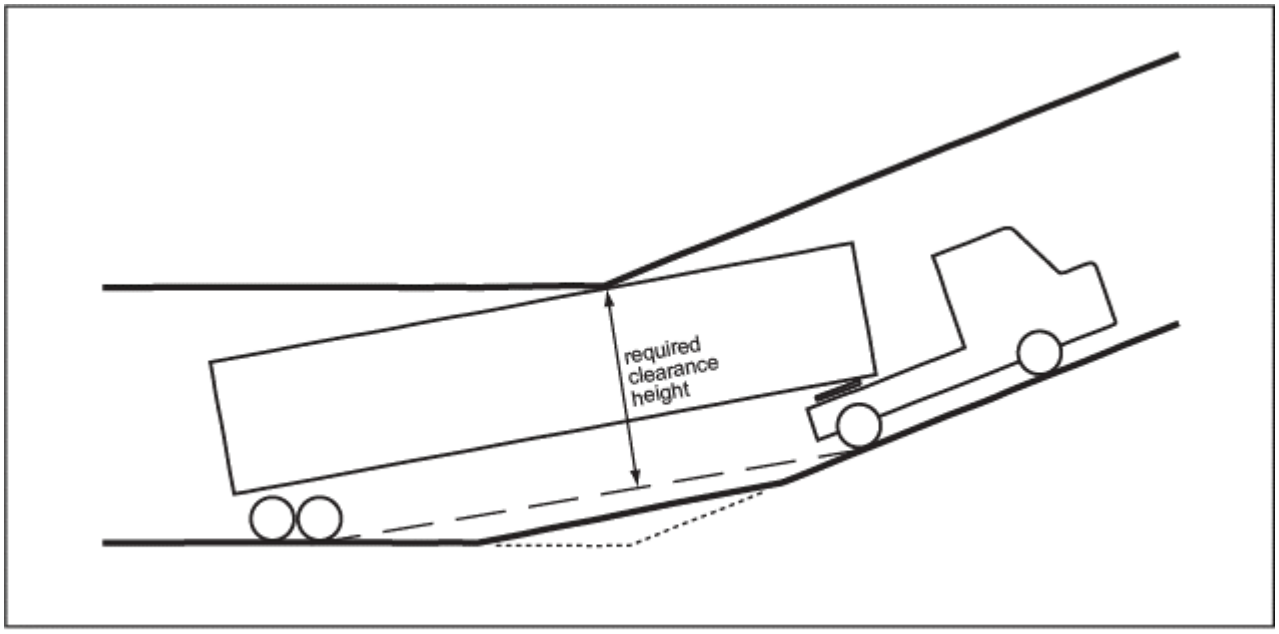


Figure h—Clearance height past grade change

View the high resolution of Figure h—Clearance height past grade change

5.11 Provision for construction

1. During construction, all construction activities including loading, unloading and storage of materials and equipment are provided for on-site.
2. Construction activities are not to impact upon the safe movement of pedestrians and traffic adjacent to the work site.
3. If it is not possible to comply with these requirement for major developments and if the site has frontage only to a road with significant pedestrian and traffic movements, a traffic construction management plan is to be prepared in accordance with the Management plans planning scheme policy.

Note—If a footpath or road closure is proposed during the construction stage of a development, a separate application for a 'Footpath closure permit', 'Road closure permit' or 'Work zone' is to be lodged with Council.

6 Car parking space standards

Standards for the provision of car parking for common uses are shown in Table 13 and Table 14. For the purposes of these standards:

a. Table 13 is to be read before Table 14;
b. the term car space means adequate space for the parking of a medium car, together with provision for access to such space;
c. the number shown in Table 13 or Table 14 is the minimum provision unless indicated otherwise in the table;
d. if the number of parking spaces calculated in accordance with Table 13 or Table 14 is not a whole number, then the number of spaces provided is the whole number next above the

calculated number. Visitor spaces are calculated and rounded up separately;

e. if a rate of car parking is not defined in Table 13 or Table 14, the applicant is responsible for providing evidence in support of the amount of car parking proposed;
f. in car parks with more than 50 spaces, 2% of the number of spaces required to comply with the requirements of Table 13 and Table 14 are provided as marked and signed spaces for motorcycles, each measuring 2.5m by 1.35m, located immediately adjacent to major pedestrian access points;
g. parking spaces for vehicle occupants with a disability are provided at a rate of 1 space per 50 ordinary parking spaces and a minimum provision of 1 space is required;
h. for accepted development subject to compliance with identified requirements, if no parking standard is provided in Table 13 or Table 14, no additional parking is required.

Table 13—Car parking standards in specific cases

Use and specific location	**Parking standard**
Where in the City core identified in Figure a in the Transport access parking and servicing code	
Uses other than multiple dwelling, rooming accommodation and short term accommodation	Maximum 1 space per 200m^2 gross floor area
Multiple dwelling Note—Multiple dwellings described as affordable housing, anticipated to accommodate students, accessed through a dual key arrangement, or resulting from conversion from another use (including short term accommodation) still require parking spaces in compliance with these rates for each room that is capable of being used as a dwelling. Note—Where car share spaces are provided they will not be included in the maximum car parking calculation for the use.	Maximum 0.5 space per 1 bedroom dwelling Maximum 1 space per 2 bedroom dwelling Maximum 1.5 spaces per 3 bedroom dwelling Maximum 2 spaces per 4 and above bedroom dwelling 1 visitor space for every 20 dwelling units Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling. At least 50% of visitor parking is provided in communal areas, and not in tandem with resident parking.
Rooming accommodation, if for a dwelling (other than for on-site management or staff accommodation) Note—Any part of rooming accommodation that can be defined as a dwelling requires car parking at a rate equivalent to a multiple dwelling Note—Where car share spaces are provided they will not be included in the maximum car parking calculation for the use.	Maximum 0.5 space per 1 bedroom dwelling Maximum 1 space per 2 bedroom dwelling Maximum 1.5 spaces per 3 bedroom dwelling Maximum 2 spaces per 4 and above bedroom dwelling 1 visitor space for every 20

	dwelling units Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling. At least 50% of visitor parking is provided in communal areas, and not in tandem with resident parking.
Rooming accommodation, in all other cases Note—Where car share spaces are provided they will not be included in the maximum car parking calculation for the use.	Maximum 0.25 spaces per room
Short term accommodation	Maximum 0.25 spaces per room, unit or cabin
Where in the City frame identified in Figure a in the Transport access parking and servicing code	
Uses other than multiple dwelling, rooming accommodation and short term accommodation	Maximum 1 space per 100m^2 gross floor area
Multiple dwelling Note—Multiple dwellings described as affordable housing, anticipated to accommodate students, accessed through a dual key arrangement, or resulting from conversion from another use (including short term accommodation) still require parking spaces in compliance with these rates for each room that is capable of being used as a dwelling. Note—Where car share spaces are provided they will be included in the minimum car parking requirement.	Minimum 0.9 spaces per 1 bedroom dwelling Minimum 1.1 spaces per 2 bedroom dwelling Minimum 1.3 spaces per 3 or above bedroom dwelling Minimum 0.15 spaces per dwelling for visitor parking Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling. At least 50% of visitor parking is provided in communal areas, and not in tandem with resident parking.
Rooming accommodation, if for a dwelling (other than for on-site management or staff accommodation) Note—Any part of rooming accommodation that can be defined as a dwelling requires car parking at a rate equivalent to a multiple dwelling Note—Where car share spaces are provided they will be included in the minimum car parking requirement.	Minimum 0.9 spaces per 1 bedroom dwelling Minimum 1.1 spaces per 2 bedroom dwelling Minimum 1.3 spaces per 3 or above bedroom dwelling Minimum 0.15 spaces per dwelling for visitor parking Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling.

	At least 50% of visitor parking is provided in communal areas, and not in tandem with resident parking.
Rooming accommodation, in all other cases Note—Where car share spaces are provided they will be included in the minimum car parking requirement.	Minimum 0.4 spaces per room
Short term accommodation	Minimum 0.5 spaces per room, unit or cabin
Where within 400m walking distance of a dedicated public pedestrian access point of a major public transport interchange, other than where in the City core or City frame identified in Figure a in the Transport access parking and servicing code	
Centre activities activity group where in a Principal centre zone, Major centre zone, District centre zone, Neighbourhood centre zone or Mixed use zone	Maximum 5 spaces per 100m^2 gross floor area on all levels accessible at-grade from a public street or an on-site car parking area, plus maximum 2 spaces per 100m^2 gross floor area on other levels
Rooming accommodation, if for a dwelling (other than for on-site management or staff accommodation) Note—Any part of rooming accommodation that can be defined as a dwelling requires car parking at a rate equivalent to a multiple dwelling Note—Where car share spaces are provided they will be included in the minimum car parking requirement.	Minimum 0.9 spaces per 1 bedroom dwelling Minimum 1.1 spaces per 2 bedroom dwelling Minimum 1.3 spaces per 3 or above dwelling Minimum 0.15 spaces per dwelling for visitor parking Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling. At least 50% of visitor parking is provided in communal areas, and not in tandem with resident parking.
Rooming accommodation, in all other cases Note—Where car share spaces are provided they will be included in the minimum car parking requirement.	Minimum 0.25 spaces per room
Short term accommodation	Minimum 0.25 spaces per room, unit or cabin plus 1 space for staff per 20 rooms, units or cabins
Other	

Centre activities activity group where in a Principal centre zone, Major centre zone, District centre zone, Neighbourhood centre zone or Mixed use zone	Minimum 5 spaces per 100m^2 gross floor area on all levels accessible at-grade from a public street or an on-site car parking area, plus 3 spaces per 100m^2 gross floor area on other levels
Large format retail activity group, where on land included in the Large format retail zone precinct of the Specialised centre zone	Minimum 3 spaces per 100m^2 gross floor area and outdoor display area

Table 14—Car parking standards in all other cases

Use	**Parking standard**
Adult store	5 spaces per 100m^2 gross floor area
Agricultural supplies store	3 spaces per 100m^2 gross floor area and outdoor display area
Bar	6 spaces per 100m^2 gross floor area
Brothel	2 spaces per bedroom
Bulk landscape supplies	1 space per 100m^2 gross floor area and outdoor display area
Caretaker's accommodation	1 space per dwelling
Childcare centre	1 space per 5 children 60% of these spaces are for staff and can be provided in tandem
Club, if licensed and less than 1,500m^2 gross floor area	6 spaces per 100m^2 gross floor area
Club, if licensed and equal to or greater than 1,500m^2 gross floor area	40 spaces plus 4 spaces per 100m^2 gross floor area
Club, if not licensed	3 spaces per 100m^2 gross floor area
Community care centre	14 spaces plus 5 spaces per 100m^2 gross floor area
Community residence	1 space per staff
Community use, if a community centre or community hall	10 spaces per 100 m^2 gross floor area
Community use in all other cases	3 spaces per 100m^2 gross floor area
Crematorium	10 spaces per 100m^2 gross floor area
Dual occupancy	1 space per 1 or 2 bedroom dwelling 2 spaces per 3 or more bedroom

	dwelling Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling
Dwelling house	1 space plus 1 space for a secondary dwelling
Dwelling unit	Use standard for multiple dwelling
Educational establishment, if a pre-preparatory, preparatory and primary school, secondary school or special education	1 space per staff plus 0.1 space per staff for visitors
Educational establishment, if a college, university or technical institute	1 space per staff plus 0.1 space per staff for visitors 1 space per 10 students
Environment facility, where not in the Open space zone, Sport and recreation zone or Conservation zone	1 space per staff plus 0.1 space per staff for visitors
Environment facility, where in the Open space zone, Sport and recreation zone or Conservation zone	1 space per staff plus 0.1 space per staff for visitors where no parking is provided already in that zone or within 200m walking distance of the facility
Food and drink outlet, if less than 400m^2 gross floor area, where not in the Open space zone, Sport and recreation zone or Conservation zone	12 spaces per 100m^2 gross floor area and outdoor dining area
Food and drink outlet, where in the Open space zone, Sport and recreation zone or Conservation zone	6 spaces per 100m^2 gross floor area where no parking is provided already in that zone or within 200m walking distance of the outlet
Food and drink outlet, if 400m^2 or greater gross floor area	30 spaces plus 5 spaces per 100m^2 gross floor area and outdoor dining area
Function facility	10 spaces per 100m^2 gross floor area
Funeral parlour	10 spaces per 100m^2 gross floor area
Garden centre	5 spaces per 100m^2 gross floor area and outdoor display area
Hardware and trade supplies	5 spaces per 100m^2 gross floor area
Health care service, if less than 200m^2 gross floor area	6 spaces per 100m^2 gross floor area
Health care service, if 200m^2 or greater gross floor area	14 spaces plus 5 spaces per 100m^2 gross floor area

High impact industry	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Hospital	0.5 spaces per bed plus 0.8 spaces per staff
Hotel	6 spaces per 100m^2 gross floor area plus 1 space per short term accommodation room
Indoor sport and recreation, if a gymnasium	10 spaces per 100m^2 gross floor area
Indoor sport and recreation, if squash courts or enclosed tennis courts	6 spaces per court
Indoor sport and recreation, if indoor cricket or other court game	20 spaces per court
Indoor sport and recreation, if swimming pool	15 spaces plus 1 space per 100m^2 gross floor area
Indoor sport and recreation, in all other cases	3 spaces per court or similar or 5 spaces per 100m^2 gross floor area
Low impact industry	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Major sport, recreation and entertainment facility	1 space per 5 persons to be seated plus 20 spaces per 100m^2 other area
Marine industry	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Market	6 spaces per 100m^2 site area (stalls plus pedestrian circulation)
Medium impact industry	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Motor sport facility	1 space per 5 persons to be seated plus 20 spaces per 100m^2 other area
Multiple dwelling in all other cases Note—Multiple dwellings described as affordable housing, anticipated to accommodate students, accessed through a dual key arrangement, or resulting from conversion from another use (including short term accommodation) still require parking spaces in compliance with these rates for each room that is capable of being used as a dwelling.	1 space per 1 bedroom dwelling 2 spaces per 2 bedroom dwelling 2 spaces per 3 bedroom dwelling 2.5 spaces per 4 bedroom dwelling 0.25 spaces per dwelling for visitor parking Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling. At least 50% of visitor parking is

	provided in communal areas, and not in tandem with resident parking. Note—Where car share spaces are provided they will be included in the minimum car parking requirement.
Nightclub entertainment facility	6 spaces per 100m^2 gross floor area
Office	3 spaces per 100m^2 gross floor area
Outdoor sales	2 spaces per 100m^2 gross floor area and outdoor display area
Outdoor sport and recreation, if a swimming pool or other aquatic sport and recreation	15 spaces plus 1 space per 100m^2 site area
Outdoor sport and recreation, if a tennis court	6 spaces per court
Outdoor sport and recreation, if a ground, such as football, cricket or hockey	50 spaces per field
Outdoor sport and recreation, if a lawn bowls	30 spaces per green
Outdoor sport and recreation, if a court game other than tennis	20 spaces per court
Park, if in the Local zone precinct or a local park	Nil
Park, if in the District zone precinct or a district park, where for informal recreation purposes such as picnic nodes and off-leash areas	10—20 spaces
Park, if in the District zone precinct or a district park, where for high use purposes such as a district playground	20—30 spaces plus 2 spaces for minibuses
Park, if in the Metropolitan zone precinct or where a metropolitan park, where for informal recreation purposes	30—50 spaces plus 2 spaces for buses/coaches
Park, if in the District or Metropolitan zone precinct or a district or metropolitan park, where for sporting purposes	Use standard for outdoor sport and recreation
Park, if not in the Metropolitan, District or Local zone precinct	Maximum 10 spaces unless prescribed in an approved natural area management plan
Place of worship, if fronting a declared public road or including a hall	10 spaces per 100m^2 auditorium and seating area
Place of worship in all other cases	8 spaces per 100m^2 auditorium and seating area
Relocatable home park	11 spaces per 10 sites plus 1 space per 10 sites for visitors

Research and technology industry	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Residential care facility	1 space per 6 beds
Retirement facility	0.7 spaces per dwelling plus 0.3 spaces per dwelling for visitors and staff
Rooming accommodation, if a boarding house	1 space per 5 beds plus 1 space for staff Note—Where car share spaces are provided they will be included in the minimum car parking requirement.
Rooming accommodation, if for a dwelling (other than for on-site management or staff accommodation) Note—Any part of rooming accommodation that can be defined as a dwelling requires car parking at a rate equivalent to a multiple dwelling	1 space per 1 bedroom dwelling 1.25 spaces per 2 bedroom dwelling 1.5 spaces per 3 or more bedroom dwelling 0.15 spaces per dwelling for visitor parking Parking may be provided in tandem spaces where 2 spaces are provided for 1 dwelling. At least 50% of visitor parking is provided in communal areas, and not in tandem with resident parking. Note—Where car share spaces are provided they will be included in the minimum car parking requirement.
Rooming accommodation, in all other cases	0.6 spaces per room Note—Where car share spaces are provided they will be included in the minimum car parking requirement.
Sales office	3 spaces per 100m^2 gross floor area
Service industry	5 spaces per 100m^2 gross floor area
Service station	6 spaces per 100m^2 gross floor area
Shop	5 spaces per 100m^2 gross floor area
Shopping centre	5 spaces per 100m^2 gross floor area
Short-term accommodation, if dormitory type accommodation e.g. a backpackers	1 space per 100m^2 gross floor area plus 1 space for a minibus
Short term accommodation, in all other cases	0.5 spaces per room, unit or cabin plus

	0.5 spaces per staff
Showroom	3 spaces per 100m^2 gross floor area
Special industry	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Theatre	10 spaces per 100m^2 gross floor area
Tourist park	1 space per 1 site or cabin plus 1 space per 10 sites for visitors plus 0.5 spaces per staff
Transport depot	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Utility installation	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area
Veterinary service	4 spaces per 100m^2 gross floor area
Warehouse	2 spaces per tenancy or lot plus 1 space per 100m^2 gross floor area

7 On-site car parking design standards

7.1 General

1. On-site car parking areas are designed to be safe and convenient to use to encourage their use in preference to on-street parking.
2. Mandatory design standards (section 7.2.1) satisfy the primary objectives of vehicular and pedestrian safety and are incorporated in all car parking areas.
3. Desirable design standards (section 7.2.2) are desirable standards which produce safe and convenient car parking layouts.
4. Typical layouts of car parking areas are shown in section 7.10.
5. If existing older buildings are being redeveloped, it is recognised that it may not be possible to fully comply with these principles. Any solution proposed is to demonstrate a safe and workable car park layout.
6. Motorcycle parking is provided as marked and signed spaces for motorcycles with each measuring 2.5m by 1.35m and is located immediately adjacent to major pedestrian access points.

7.2 Design principles

7.2.1 Mandatory design standards

The following are the mandatory design standards for car park layouts:

a. Restrict vehicles to low speeds in the vicinity of pedestrian activity. This is achieved using appropriate road geometry or physical devices designed to limit speed.

b. Provide sight distances appropriate for operating speeds in all areas of potential pedestrian and vehicle conflict. In particular, sight distances of at least 2.5 seconds of travel time at the likely prevailing speed are to be provided at all conflict points. This requires splayed corners on structures and the careful treatment of landscaping and sign placement in an area of potential conflict.
c. No reversing of vehicles, particularly service vehicles, in areas of high pedestrian, cyclist and vehicle activity.
d. On-site traffic congestion does not impact on the external transport system.
e. If walls are provided on a circulating ramp, a 3m by 1 chord truncation is required to improve visibility for motorists on the ramp (refer to Figure k)

7.2.2 Desirable design standards

The following are desirable design standards for car park layouts:

a. Design for a progressive reduction in speed environment in moving between the road and a parking space.
b. Avoid dead-end aisles used by visitors or customers and design for efficient and simple space search patterns.
c. Avoid cross-aisle intersections.
d. Design for aisles to intersect circulation roads and circulation aisles as near to right angles as possible, as the intersection geometry is unlikely to be satisfactory at angles less than 75°.
e. Provide a clearly defined pedestrian network which:
    i. closely follows demand lines;
    ii. provides for pedestrian movements through car parking areas along aisles rather than across them;
    iii. minimises the potential for vehicular and pedestrian conflict;
    iv. minimises likely vehicle operating speeds and congestion levels at conflict points;
    v. provides for pedestrian and vehicular queues at conflict points.
f. Avoid long straights (longer than 80m) on circulation roadways, and large areas of open car parking which encourage high operating speeds and shortcutting when the car parking area is not full. Separators between parking rows are necessary.
g. Restrict the maximum length of parking aisles to 80m, unless additional measures are adopted to ensure vehicle speeds are kept low.
h. Within large developments, provide for uncongested public transport and service vehicle movement through the site, without using parking aisles.
i. Provide adequate site lighting, and avoid abrupt changes in lighting levels during both day and night operation.
j. Provide adequate queuing areas for drive-through facilities that will not block the primary circulation roadways or site access driveways. Occasional queuing in parking aisles is normally of little consequence.
k. On-site traffic congestion is not to hinder satisfactory operation of the car parking facility.
l. Design of all storage areas, fire escapes, loading areas and refuse collection areas, complies with the requirements of the overall project design.
m. Speed humps are not necessary in a well-designed car parking area if speeds are controlled by circulation road and aisle geometry. If speed humps are provided, their profile should be as described in BSD-3216. Speed humps are not located in entry and exit queuing areas, intersection areas, or on curved roadways.

n. Where at-grade (footpath level) parking areas are necessary or unavoidable, they are adequately shaded by trees which are selected, planted and maintained to achieve shade coverage of the car park within 10 years of their establishment. Refer to the Planting species planning scheme policy for details of complying species. Shade trees are provided at the ratio of 1 tree for every 6 car parking spaces. One-third of these trees are accommodated in larger unsealed areas rather than planting areas at the corners of car parking spaces.

7.3 Location of car parking areas

1. Car parking spaces are located so that they are more convenient for use than alternatives on-street spaces.
2. Providing shelter or improved security can increase the attractiveness of on-site parking.
3. Access to parking is clearly signed at the street frontage.
4. Customer and visitor parking spaces are located closest to building entrances, while employee parking can be relatively more remote.
5. Customer and visitor and service vehicle parking spaces are not located inside security fences, behind security doors, in likely outdoor storage areas, in areas used for heavy vehicle manoeuvring, particularly opposite and adjacent to loading doors, or out of sight at the rear of the buildings.

7.4 Circulation standards within car parking areas

7.4.1 General

1. Car parking areas are designed based on a hierarchy of internal roadways that range from those primarily providing for vehicle movement, to those primarily providing for access to parking spaces.
2. The descending order of roadway importance is: circulation roads, circulation aisles and parking aisles as demonstrated in Figure a.

7.4.2 Circulation roads

1. The minimum width of a straight circulation road complies with Table 15.
2. Dimensions are measured to nominal kerb faces with a clearance from the nominal kerb face of not less than 0.15m to obstructions higher than 0.15m on a straight roadway. This minimum clearance is increased to 500mm on the outside of a curve or 300mm on the inside of a curve.
3. If a median is proposed, it should not be less than 0.6m wide, provided it can be clearly seen, and not less than 1.2m wide if it needs to carry a sign.
4. If a circulation road leading from a narrow driveway (less than 6m) is 30m or longer, or the sight distance from one end to the other is restricted, the driveway and circulation road are increased to a minimum of 6m width for at least the first 6m inside the property boundary.
5. Passing opportunities are provided at least every 30m on a long driveway.
6. If control facilities such as card readers or ticket machines are expected to be installed, the circulation road width is increased by 1.2m to allow for these devices on a median or similar structure.

7. Additional turning lanes are provided where necessary in a car parking layout of a high traffic-generating development.
8. The dimensions in Table 15 relate to the car access to a car parking area. Greater widths than those specified in Table 15 are provided to accommodate buses or service vehicles where required.
9. Curved circulation roads and ramps have the minimum dimensions in compliance with AS/NZS 2890.1:2004 Parking facilities—Off-street car parking — see 'Dimensions of curved roadway and ramps'.
10. Two-way curved circulation roads and ramps are separated by a median when the outer kerb radius (dimension Ro in AS/NZS 2890.1:2004 Parking facilities—Off-street car parking) is 15m or less.
11. A median is optional on a larger radii curve.

Table 15—Standard minimum widths of straight circulation roads

Type of circulation road	Width of circulation road
One-way, one-lane	3m <20m 5m if >20m long
One-way, two-lane	6m
Two-way, one-lane(1)	5m (up to 25vph) 6.2m (up to 1,000vph)
Two-way, two-lane	6.5m (101 to 300vph) 7.5m (over 300vph)

Note—
(1) Two-way usage of one-lane circulation roads is permitted in a small low turnover car parking area where it can be demonstrated that:
- the two-way one-lane section is more than 15m from the footpath crossing;
- any congestion generated will not extend onto the street;
- it will operate at a satisfactory level of safety;
- delays produced will not encourage parking in inappropriate locations elsewhere.

7.4.3 Circulation aisles standards for non-service vehicles

1. A small low-turnover car parking area typically having less than 50 spaces, two-way circulation aisles may be 6m wide, but in all other design situations they are not to be less than 6.2m wide.
2. Circulation aisles are inappropriate in parts of larger car parking areas that have high turnover rates.
3. Dimensions are measured to nominal kerb faces with a clearance from the nominal kerb face of not less than 0.15m to obstructions higher than 0.15m on a straight roadway. This minimum clearance is increased to 500mm on the outside of a curve or 300mm on the inside of a curve.

7.4.4 Parking aisle standards

1. All parking aisles provide for two-way traffic movement and have a minimum width of 6.2m. In restricted circumstances, this width may be reduced with a corresponding increase in the width of the parking bays (0.4m reduction in aisle width for each 0.1m increase in parking bay width, beyond the widths in Table 15).
2. The minimum width of a two-way parking aisle providing access to high turnover spaces is 6.2m.
3. The maximum length of a parking aisle is 80m unless provision is made to ensure speeds are minimised.
4. One-way parking aisle arrangements are only permitted if it can be satisfactorily demonstrated that a two-way parking aisle arrangement is impracticable, and appropriate design will ensure one-way aisles will only be used for one-way traffic operation.

7.4.5 Terminated aisle standards

Terminated aisles extend 2m or more beyond the last parking space in the aisle to allow for manoeuvres into and out of that parking space, or alternatively an 8m aisle is provided directly behind the last parking space (refer to Figure i).

7.4.6 Turning movement in parking aisle standards

1. Two design situations necessitate consideration of turning vehicles: curved roadways and ramps and the provision for turning movements at intersections.
2. The standard of design for turning movements depends on the frequency of the likely vehicular conflict between opposing streams of traffic.
3. The design standards appropriate for cars are in Figure j.
4. Curves and intersections are designed such that turning cars have no need to cross the centre line, whether marked or not, of a circulation road or circulation aisle, or a parking aisle providing access to more than 50 parking spaces.

7.4.7 Standards for service vehicle use of aisles

1. If a larger vehicle is expected to use curved and intersecting roadways and ramps or where higher operating speeds are proposed, an appropriate allowance is made by the provision of larger curves and appropriate widths of turning paths, based on the turning templates in section 8.2.
2. If a service vehicle is to use an internal road, the minimum aisle width is to be 6.5m and this is to be widened to 7.5m around curves.

7.4.8 Standard queuing area treatment

The following cross-section dimensions are used for a queuing area:

a. single queuing lanes are a minimum of 3m wide with at least a 300mm horizontal clearance provided on each side of the lane and an adjoining breakdown lane or strip 2m wide is to be considered on one side of a single queuing lane;
b. multiple queuing lanes are a minimum of 2.7m each with at least a 300mm horizontal

clearance provided on each side of the queuing area.

7.5 Standard sight distances

1. The minimum sight distances within a car park, at all areas of pedestrian and vehicle conflict complies with Table 16.
2. The measurement of sight distances is depicted in Figure k.

Table 16—Minimum sight distances at conflict

Location of conflict point	Minimum sight distance	
	For pedestrians	For vehicles
Circulation road	3.0m	20m
Circulation aisle	2.5m	15m
Parking aisles	2.0m	10m
At two-way right angle turns	-	10m

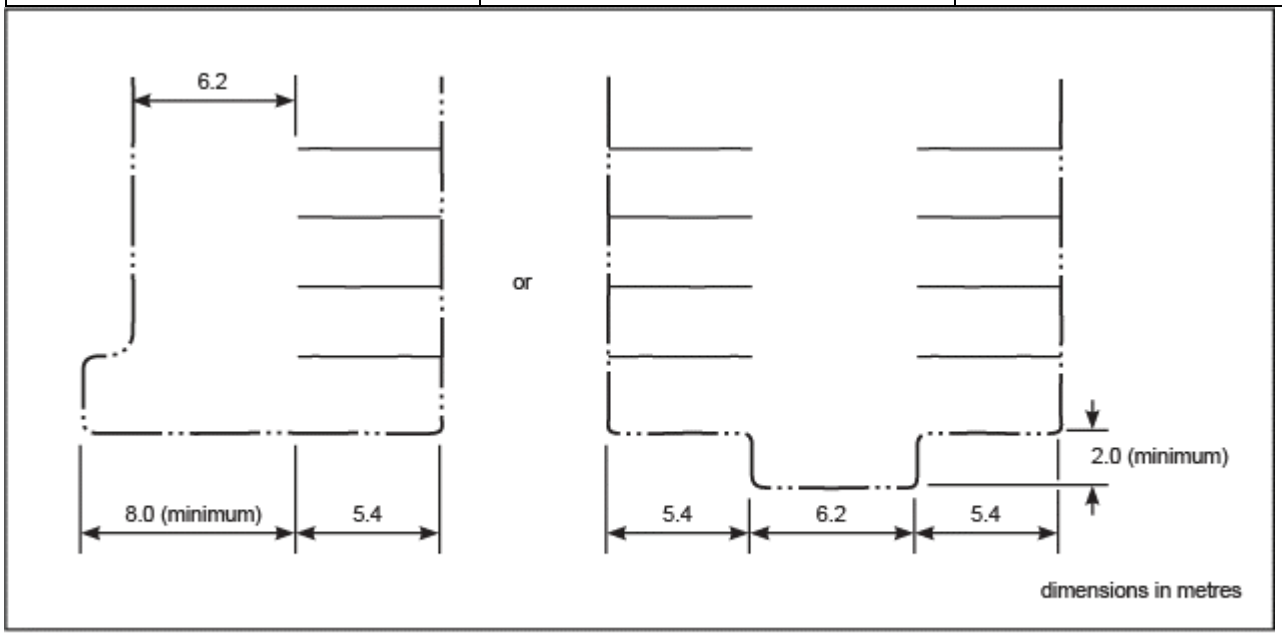


Figure i—Terminated aisle treatments

View the high resolution of Figure i—Terminated aisle treatments

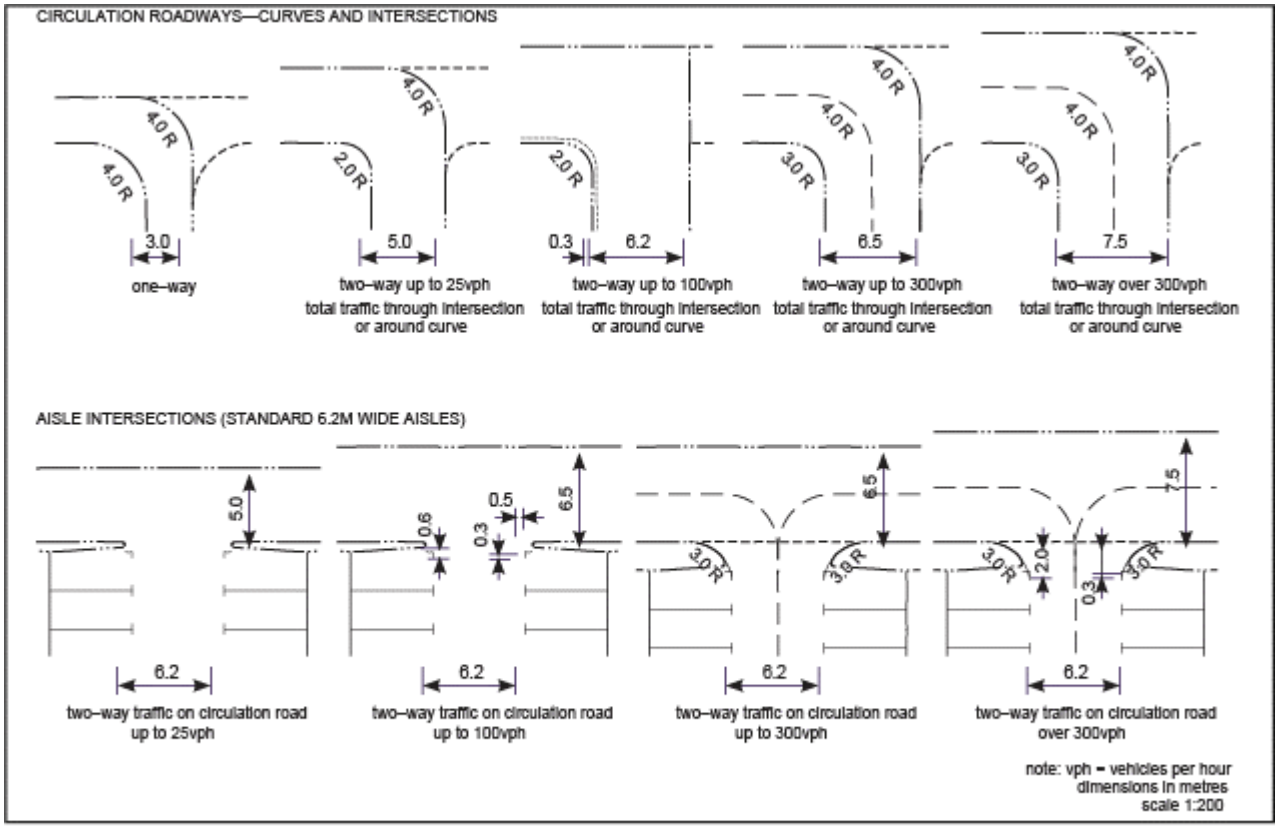


Figure j—Provisions for turning vehicles

View the high resolution of Figure j—Provisions for turning vehicles

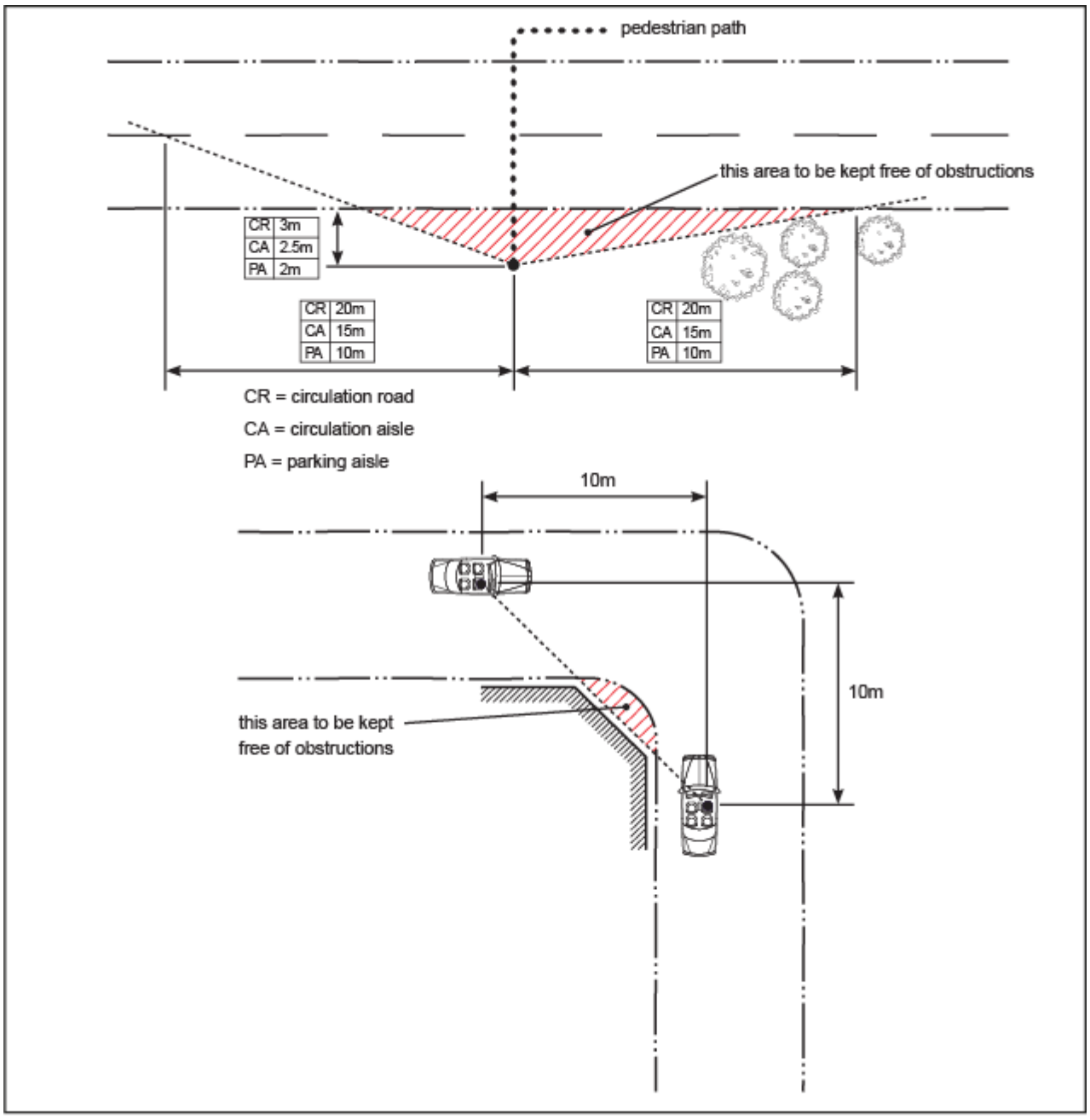


Figure k—Locations of sight lines at conflict points

View the high resolution of Figure k—Locations of sight lines at conflict points

7.6 Standard gradients

1. The minimum gradients of car parking areas are defined by drainage requirements and depend on the type of surface and its roughness (refer to AS/NZS 2890.1:2004 Parking facilities—Off-street car parking).
2. The maximum gradients are defined by consideration of vehicle performance, user comfort, likely operating speeds and the control of opening car doors and the manoeuvrability of

prams, wheelchairs and shopping trolleys.

3. The maximum entrance gradients for driveways are set out in BSD-2025 and the maximum gradients for car parking areas are shown in Table 17.
4. The gradients are defined as the maximum total gradient incorporating longitudinal and crossfall components.
5. The component of the gradient in the car parking area across parking spaces is not to exceed 1 in 20 (5%). If a gradient steeper than this is encountered, some large car doors become difficult to control and minor damage to adjacent car may result.
6. For every 5% change in transition gradient, the transition length is to be a minimum of 2m. The transition can be straight or a vertical curve; the latter providing better user comfort. At changes of grade, the required clear height is maintained at all points.
7. If transitions and change of grade do not comply with these standards, it is to be demonstrated that the B85 design vehicle (refer to template and method shown in AS/NZS 2890.1:2004 Parking facilities—Off-street car parking) can traverse the aisle or driveway without bottoming out and clear overhead obstructions.
8. A vehicle is not permitted to turn on a ramp or on a crest or sag of a crest where driver visibility is poor.

Table 17—Standard maximum gradients in a parking area

Location	Maximum gradient
Parking areas for people with disabilities AS/NZS 2890.6:2009 Parking facilities—Off-street parking for people with disabilities	1 in 40 (2.5%) both directions
Public car parking area (prams and shopping trolleys likely) consistent with AS/NZS 2890.1:2004 Parking facilities—Off-street car parking and AS 1428.1-2009 Design for access and mobility - General requirements for access—New building work	1 in 14 (7.1%)
Tenant car parking area in residential building	1 in 14 (7.1%)
Employee car parking area	1 in 10 (10%)
Straight circulation road or ramp	1 in 6 (16.7%)
Curved circulation road or ramp (at inside kerb)	1 in 6 (16.7%)
Circulation aisle	1 in 20 (5%)
Ramp or driveway within 6m of a property boundary, traffic control point or marked pedestrian crossing	1 in 20 (5%)
Uphill queue area	1 in 12 (8.3%)
Super-elevation on curved roadway or ramp camber	1 in 12 (8.3%)

Note—Terms used in this table are defined in section 1.3 Terminology and illustrated in Figure a.

7.7 Standard height clearance

7.7.1 General standards

1. To permit access for most vehicles expected to use a car parking area, the minimum clear height between the floor and any overhead obstructions is 2.3m.
2. The minimum clear height is measured to the lowest appurtenance on the ceiling such as fire sprinklers, services, lighting fixtures and signs.
3. The minimum clear height is appropriately and clearly signed.
4. If part of the car park has reduced clear heights, arrangements are made to divert higher vehicles within the car parking area.
5. The minimum headroom in that part of a car park that has reduced height clearance is no less than 2.1m.
6. Reduced height and any alternative route are clearly signed.
7. Particular attention is paid to the headroom available at the beginning or end of a ramp, due to the reduced clear height that occurs when a vehicle bridges the change of grade.

7.7.2 Height clearance for disabled user spaces

Car parking spaces reserved for vehicles displaying a disabled person parking permit have a minimum height clearance of 2.5m extending from the open end of the bay to a point not less than 2.16m from the front of the bay. Refer to AS/NZS 2890.6:2009 Parking facilities—Off-street parking for people with disabilities and AS 1428.1-2009 Design for access and mobility - General requirements for access—New building work — see 'Vertical clearance required above car space for people with disabilities '.

7.8 Standard car parking space dimensions

7.8.1 Widths of standard parking spaces

1. The standard minimum width of a car parking space is indicated in Table 18 for the identified types of car parking area users.
2. The minimum widths are based on considerations of door opening requirements and the frequency of use.
3. Parking areas that are shared by different categories of users have spaces of the greatest width required by any of the user types.
4. Different car parking areas on the site can provide for different categories of users, provided the user types are adequately and clearly separated. That is an employee car parking area may have narrower spaces than a visitor car parking area on the same site.
5. In fully reserved car parking areas, up to 20% of spaces may be small car (50th percentile) spaces, provided such spaces are no smaller than 5m long by 2.3m wide and are appropriately signed as being for small cars only.
6. Some spaces, particularly those near entry and exit driveways and where aisle widths are constrained, may need wider (up to 3.5m) to allow satisfactory access to the space, since such spaces can only be practically approached by a vehicle making a minimum radius turn.
7. If the side boundary of a space is adjacent to an obstruction greater than 150mm high and placed so as to restrict doors from opening, 0.3m is added to the width of the space.

7.8.2 Standard length of parking spaces

1. All angled spaces are not less than 5.4m long.
2. Tandem parking spaces (combined length of 10.8m) are not appropriate in visitor or public parking areas, but may be acceptable in the following situations:
   a. residential developments where both spaces are attached to one dwelling;
   b. reserved car parking areas where both spaces are allocated to a single tenant.
3. Fully enclosed spaces (garages) are 6.0m long to allow for pedestrian access around the vehicle with the garage doors closed.
4. Wheel stops can be used, as long as they do not cause parked vehicles to extend into the aisle. They are located 0.5m from the closed end of the parking space, with no obstructions higher than 150mm within the 0.5m overhang area.
5. Pedestrian areas are set back at least 1m from the wheel stop face. The area of overhang is not considered to form part of the landscaped area, whatever the surface treatment.
6. The normal length of a parallel parking space is 6m, this length being reduced to 5.4m if the space is at the open end of the row of spaces, or increased by 0.3m if closed by a kerb at one end, and by 0.6m if closed by a kerb at both ends. Lengths of parallel parking spaces are depicted in Figure l.
7. Vertical clearances required for car spaces for people with disabilities are outlined in AS/NZS 2890.6:2009 Parking facilities—Off-street parking for people with disabilities.

Table 18—Standard minimum widths of car parking space

Class of space	Minimum width of space (m)	User types
1	2.4	Reserved parking with low turnover rates, such as employee car parking areas at and industrial and an office premises
2	2.5	Public car parking areas with low turnover rates, such as the city core car parking areas and sporting venues
3	2.6	Public car parking areas with moderate turnover rates, such as suburban shops and medical centres
		Reserved spaces where passengers and goods are loaded or unloaded, such as tenant car parking area in a residential complex
		Visitor parking at office, industrial and residential premises
4	2.7	Small public car parking areas with high turnover rates (typical duration of stay 30 minutes or less), particularly shopping centres up to 1,000m^2 gross floor area, kiss'n'ride areas, fast food stores etc.

5	2.4 plus 2.4 shared area	Parking spaces reserved for people with disabilities

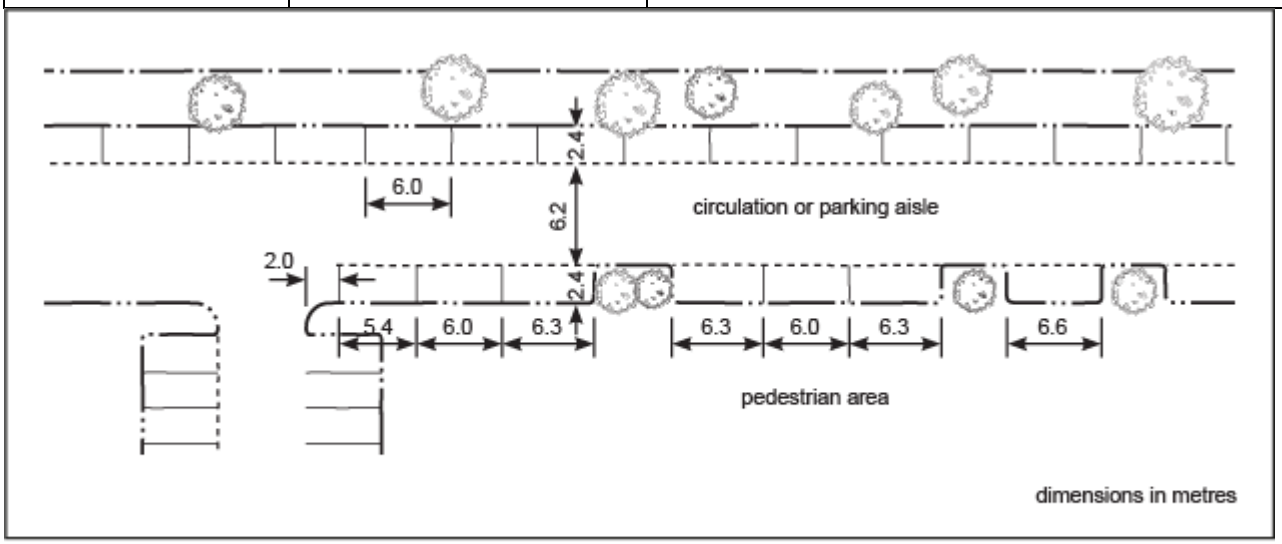


Figure I—Parallel parking

View the high resolution of Figure I—Parallel parking

7.8.3 Fully enclosed garages

1. For a dwelling house or similar development where a straight entry into a garage is possible, a single garage has minimum internal dimensions of 6m by 3m with a minimum doorway opening of 2.4m.
2. If a design vehicle is to turn through 90 degrees from a standard 6.2m wide aisle to enter a single garage, the minimum internal dimensions of the garage are 6m by 3.2m with a minimum doorway opening of 3m. A reduction of doorway and garage widths is considered if the garage is set back a significant distance from the access aisle to provide a greater manoeuvring area in front of the garage that enables the design vehicle to achieve a straighter entry.
3. The maximum internal dimension of a single garage is 6m by 4m.
4. A double garage with a single opening has a minimum internal dimension of 5.3m(w) by 6m(l) and a minimum doorway opening of 4.2m.
5. If a design vehicle movement is to turn 90 degrees from a standard 6.2m wide aisle, the minimum internal dimension is widened as determined by the vehicle turning arch (see section 8).
6. Intrusions into a garage area are only allowed in an area shown in Figure m.
7. Tandem garages have a minimum internal length of 11.4m.

Table 19—Recommended garage widths for various driveway widths

Width of driveway	**Internal garage width**

	Single garage	Double garage
3.0m wide	4.2m	7.2m
4.0m wide	3.8m	7.0m
5.0m wide	3.4m	6.6m
6.2m wide (standard)	3.0m	5.3m

7.8.4 Clearance around parking spaces

1. All parking spaces are rectangular in shape.
2. Intrusion into the rectangular form of the parking space by columns or other structures can occur, provided that such intrusions are at the closed end of the space and within defined limits.
3. Additional areas outside the rectangular form are clear of structures to allow for door openings and the turning manoeuvre into the space.
4. The allowable intrusions and the additional clearance areas, which may be an unoccupied part of an adjacent space, are shown in Figure m.
5. Provision is made for door openings on both sides of the vehicle.
6. In permanently reserved long-term employee car parking areas for industrial and office uses, provision may be made for door openings on one side only.

7.9 Standard provisions for vehicle occupants with a disability

1. Parking spaces for vehicle occupants with a disability are provided at a rate of 1 space per 50 ordinary parking spaces and a minimum provision of one space is required.
2. Provision of parking and general access is made in accordance with the requirements of AS 1428.1-2009 Design for access and mobility - General requirements for access —New building work and AS/NZS 2890.6:2009 Parking facilities—Off-street parking for people with disabilities, particularly for parking space width and location, manoeuvring areas for wheelchairs, gradients, location of stairs, ramps, doorways and signage.
3. Multiple dwellings with more than 10 units provide a minimum of 1 visitor car parking space designed and reserved for vehicle occupants with a disability.
4. Parking spaces for vehicle occupants with a disability are provided as close as possible to the main entrance to a building.

7.10 Standard car park layouts

Standard car park layouts are shown in Figure n, Figure o, Figure p.

8 Standard design vehicles and vehicle turning templates

8.1 Design vehicles

8.1.1 Cars

1. The standard design vehicles used throughout the car parking sections of these guidelines are medium cars.
2. A medium car has critical dimensions approximating the 85th percentile dimensions derived from AS/NZS 2890.1:2004 Parking facilities—Off-street car parking, and the research on which it was based.

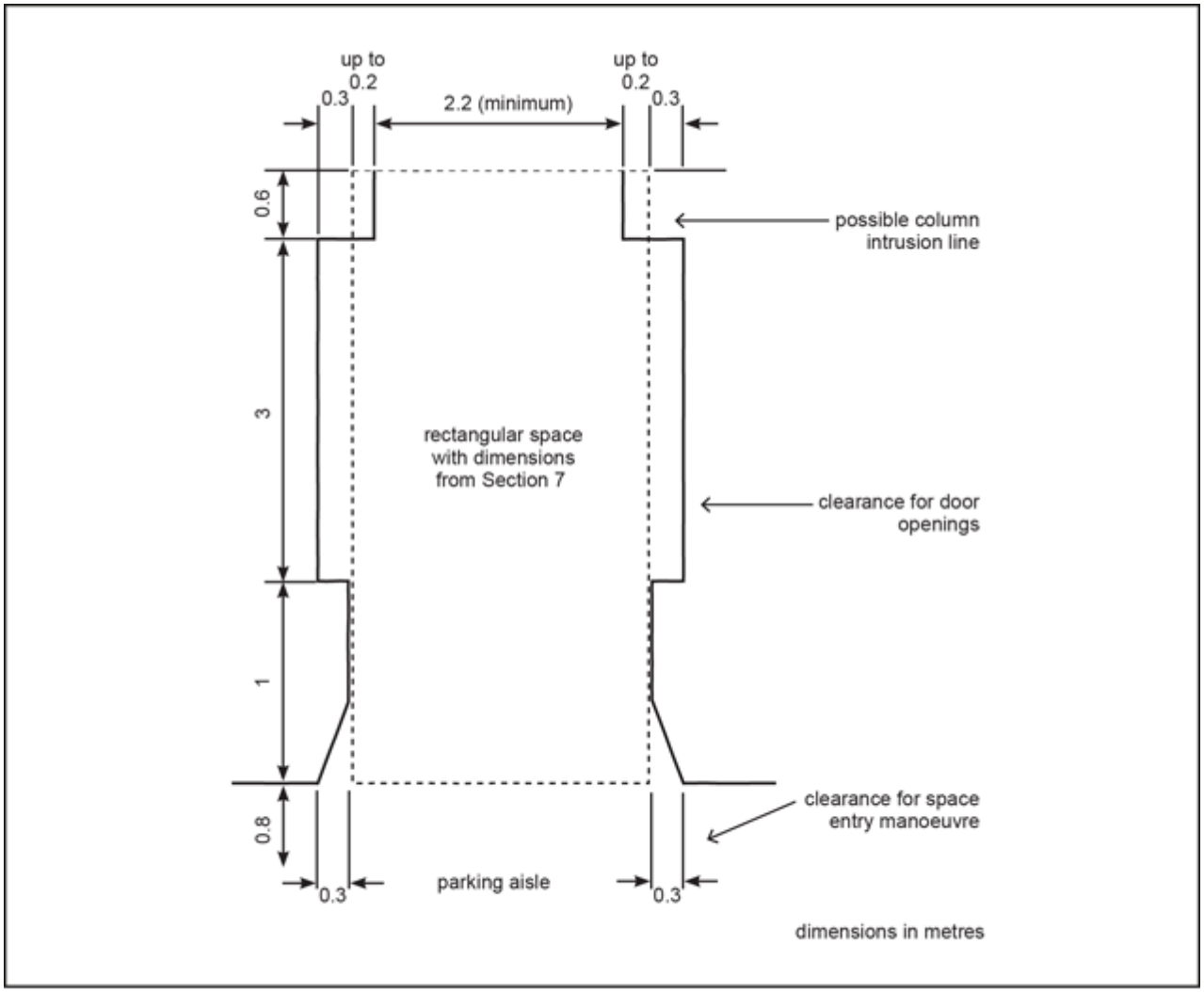


Figure m—Clearances around carparking space

View the high resolution of Figure m—Clearances around carparking space

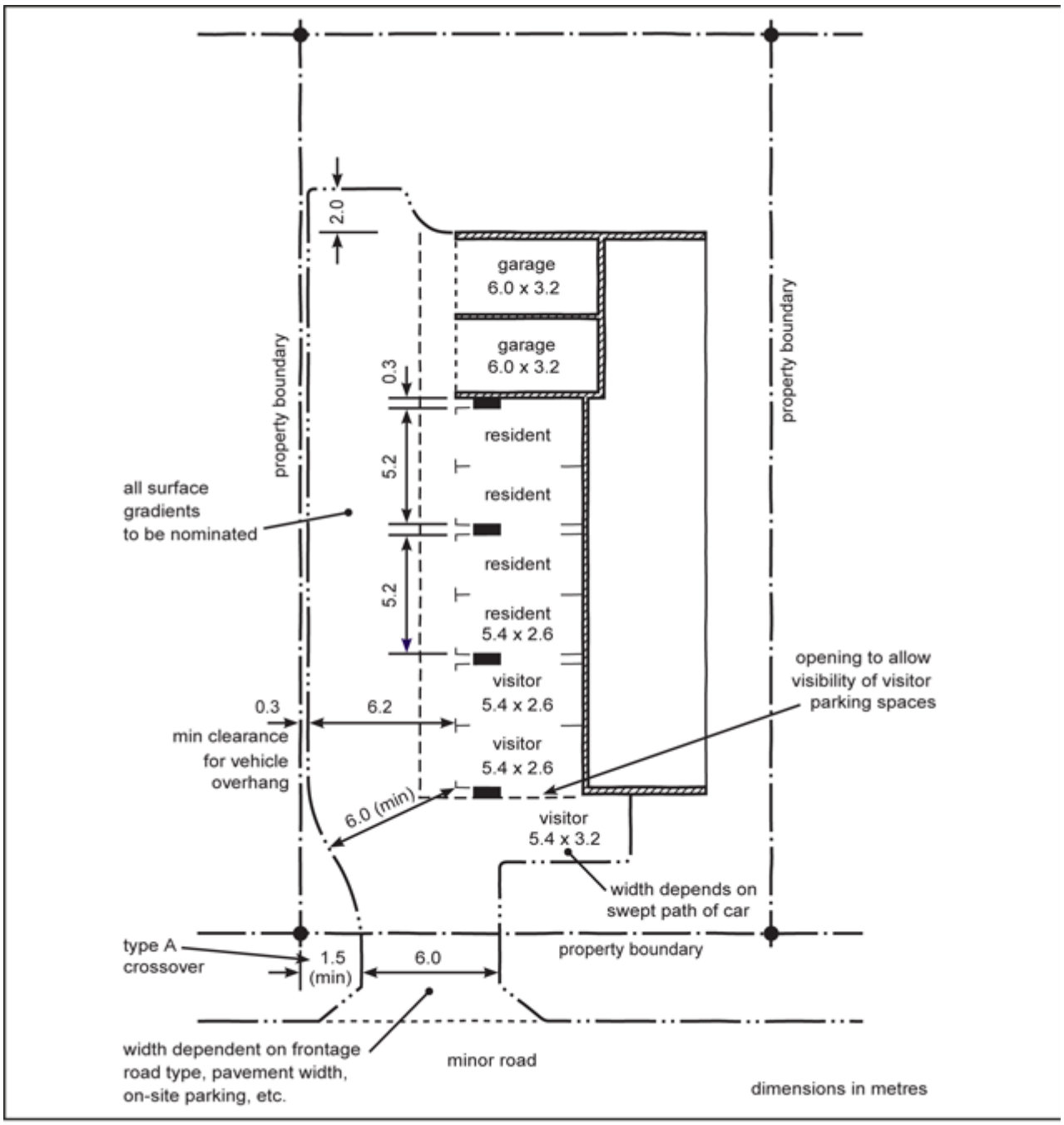


Figure n—Typical layout: multiple dwelling

View the high resolution of Figure n—Typical layout: multiple dwelling

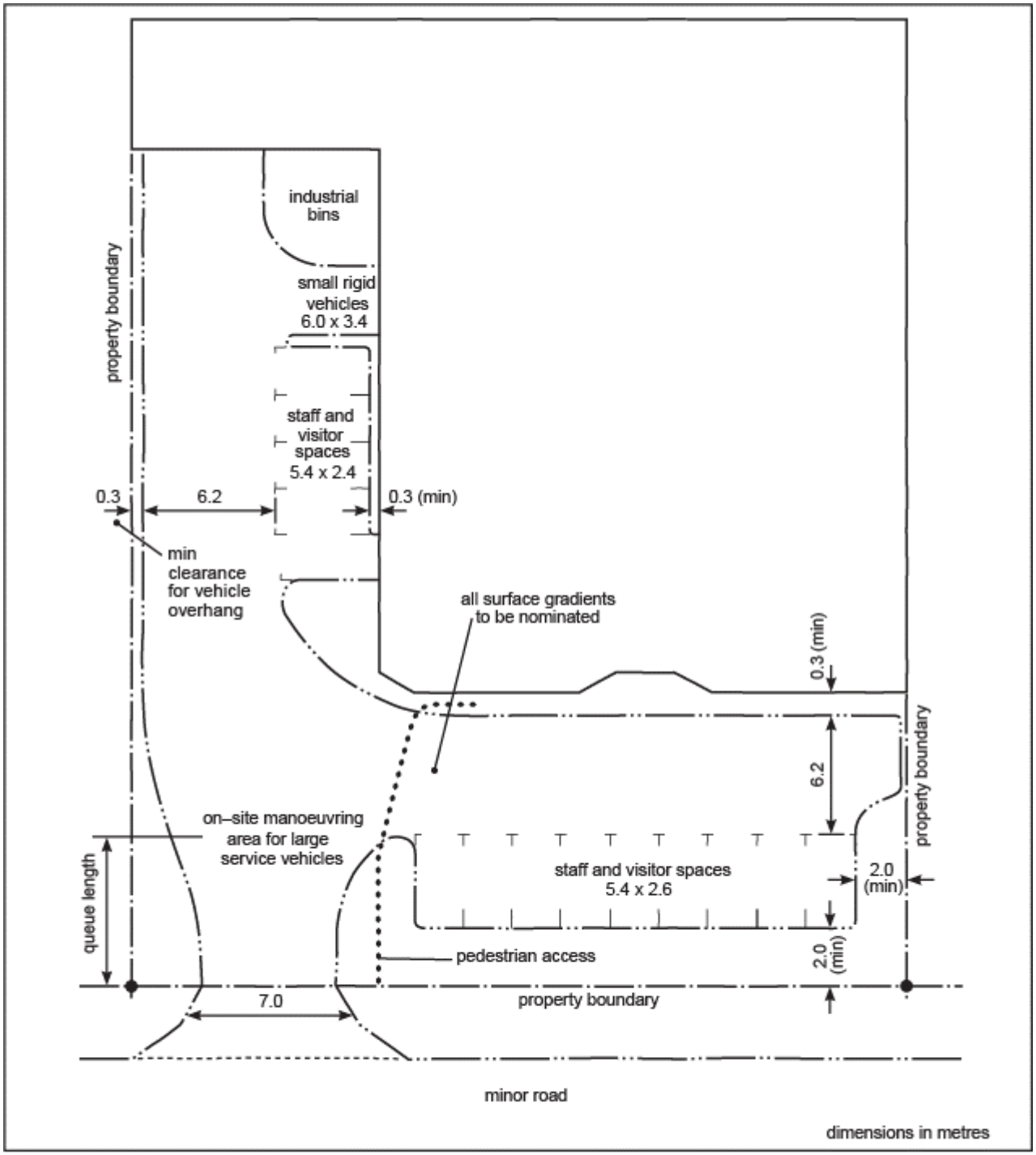


Figure o—Typical layout: small industrial development

View the high resolution of Figure o—Typical layout: small industrial development

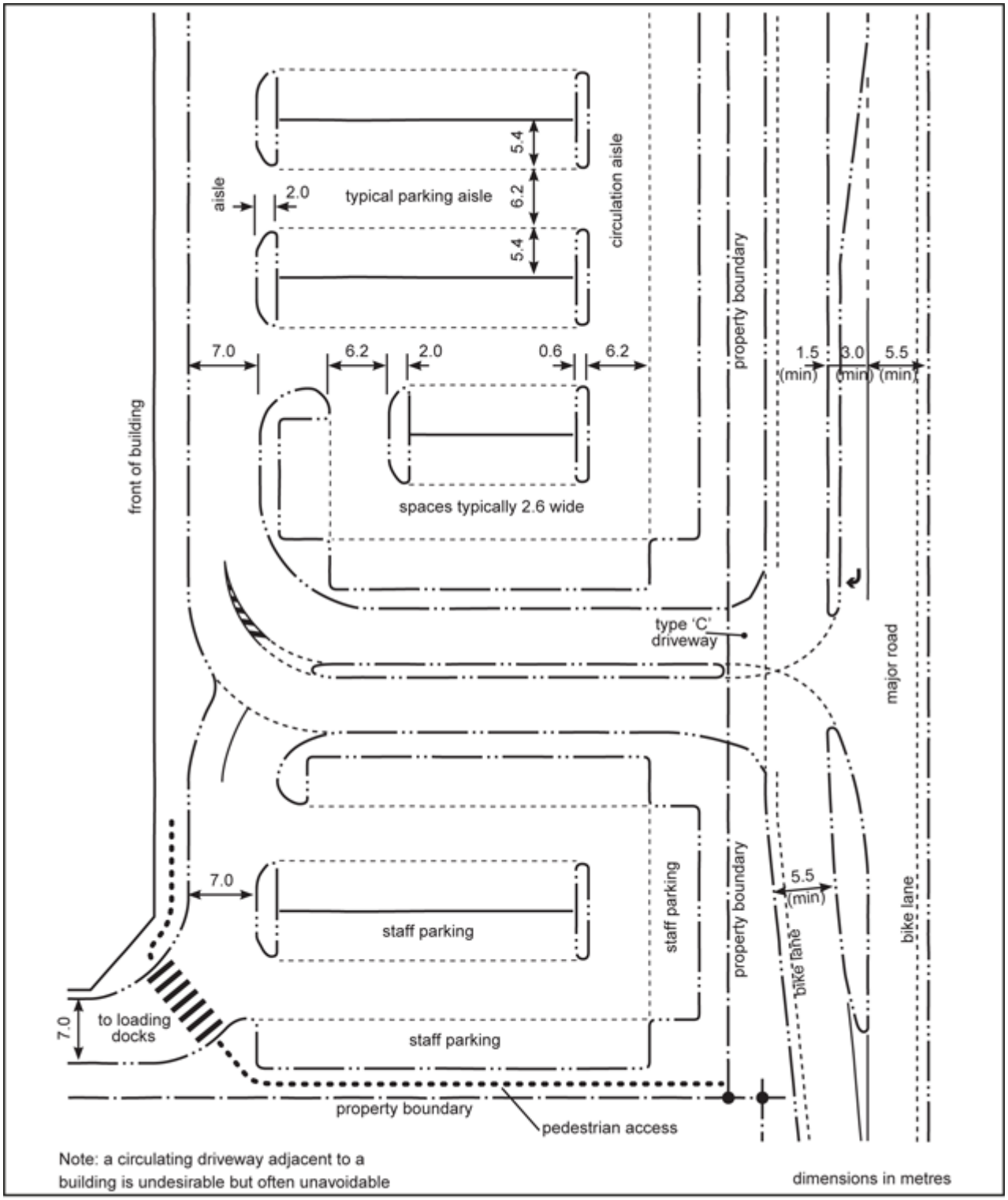


Figure p—Typical layout: large shop development

View the high resolution of Figure p—Typical layout: large shop development

8.1.2 Service vehicles

The origins of the design vehicles selected for use in the service vehicle sections of this planning scheme policy are described in Table 20.

8.2 Standard vehicle turning templates

1. Turning templates are used in checking vehicle turning movements in critical locations.
2. External roadways and intersections are designed to the appropriate traffic engineering standards.
3. There are two standard types of templates:
   a. manoeuvring templates for movements made at stalling speeds and used for design of service areas;
   b. turning templates for movements at low speed and used for driveway and internal and external roadway design.
4. The minimum template required for an assessment is the 19m AV, largest Council rigid bus, Council refuse truck, a LRV or the medium car.
5. If vehicles other than those listed are proposed to service a development, manoeuvring provision is designed using dedicated templates that may already be available for the vehicles or from computer-generated turning paths or from field trials of actual vehicle performance.
6. The vehicle paths are inappropriate for design purposes without allowance for 0.5m working clearances in addition to the template curves.
7. A minimum horizontal clearance (prescribed below) is provided outside the vehicle extremities when applying the templates to a plan drawing, to demonstrate that vehicles can manoeuvre clear of kerb lines and vertical obstructions. The templates are divided into two sets:
   a. turning templates for access driveway and access way design. These are based on the swept path of the vehicle at a speed higher than stalling speeds. A clearance for varying vehicle characteristics and driver judgement and skill of 0.5m is allowed when using the templates.
   b. manoeuvring templates for service area design. These are for manoeuvres undertaken at stalling or minimum speeds. A clearance of 0.3m to all permanent obstructions is allowed when using the templates.

8.2.1 Cars

1. Generally the design vehicle is the medium car.
2. The relevant turning path templates for medium cars are found in AS/NZS 2890.1:2004 Parking facilities—Off-street car parking and AS 2890.2-2002 Parking facilities—Off-street commercial vehicle facilities. These templates show an additional area required to provide clearance to obstructions.

Table 20—Design vehicles

Design vehicle	Description/type
C&T	Car and trailer, equivalent to AUSTROADS 'Car and Caravan', or similar to the Department of Harbour and Marine 'Car and Boat Trailer'

VAN	A 99.8th percentile vehicle equivalent to the Council's 'large car'
SRV	Small rigid vehicle as in AS 2890.2-2002 Parking facilities—Off-street commercial vehicle facilities, but incorporating a body width of 2.33m
MRV	Medium rigid vehicle equivalent to Council's 8-tonne truck
LRV	Large rigid vehicle described by AS 2890.2-2002 Parking facilities— Off-street commercial vehicle facilities as heavy rigid vehicle
RCV	Industrial refuse collection vehicle
COACH/BCC Bus	Inter-city 12.5m tourist bus from AUSTROADS (see BSD-3005)
AV	19m articulated vehicle from AUSTROADS
B-double	26m B-double vehicle on permit specified routes
Over-dimensional vehicles	Vehicles for which special permits are required

8.2.2 Service vehicles

1. Provision for service vehicles in office developments is based on the operational requirements of those vehicles. Such requirements are based on vehicle turning paths for which design templates can be derived and are provided. Relevant templates are found in AS 2890.2-2002 Parking facilities— Off-street commercial vehicle facilities and Council-specific templates are in the BSD-3004—3007.
2. In situations where complex manoeuvres are required by large vehicles in restricted areas, the designer is to conduct field trials or use computer-generated turning paths to demonstrate the manoeuvring areas required as determined by an experienced traffic engineer who is a Registered Professional Engineer Queensland.

9 Heavy vehicle standards

1. A development proposing to operate more than 1 truck daily is to demonstrate how the site is serviced without impacting on the operation of the external transport network, or having significant adverse impact on surrounding streets in respect to structural capacity, amenity and safety, including the need to provide for temporary parking of trucks or trailers on the site.
2. Most industrial development is to have the 19m AV as the design vehicle. 19m AVs do not require a permit to operate on a public road.
3. Multi-combination vehicles such as 26m B-doubles, over-dimensional vehicles and other special vehicles identified by the Queensland Government agencies are required to operate under a permit system. The truck operator is to obtain the relevant permit to operate their vehicles on specified routes from the Queensland Government. A development proposing to use these permit classes of trucks is to demonstrate how the site is serviced by the vehicle. The applicant is to indicate whether the roads accessing the site have been approved for use by the vehicle classification and permit type.
4. Any vehicle accessing a development is to enter and exit the site in a forward direction and

all vehicle manoeuvring for all proposed classes of vehicle used on the site is demonstrated.

10 Pedestrian facilities

1. On-street and off-street provision of pedestrian facilities associated with new development must achieve fair, safe and equitable access and mobility.
2. The existing pedestrian network in proximity to the site is to be taken into account, particularly strategic desire lines and access to key destinations and public transport nodes.
3. The existing pedestrian network in proximity to the site is to be taken into account, particularly strategic desire lines and access to key destinations and public transport nodes.
4. If pedestrians share pathways with cyclists, the paths are a minimum of 3.0m wide. High pedestrian use walkways are a minimum of 2.4m wide.
5. Council's BSD drawings show the preferred design for cyclist and pedestrian facilities.
6. Quality end-of-trip facilities such as showers, lockers and change rooms are also important incentives to encourage commuter walking and are provided to comply with Table 21.

11 Cyclist facilities

1. In all developments, if ramps are shared between service vehicles, cars and cyclists, particular consideration is given to cyclist safety.
2. This includes determination of the gradient, the installation of non-slip surface treatments and clear way-finding and awareness signage and markings along bicycle routes to on-site end-of-trip facilities.
3. This includes determination of the gradient, the installation of non-slip surface treatments and clear way-finding and awareness signage and markings along bicycle routes to on-site end-of-trip facilities.
4. Bicycle signage and lines are shown in the Council's BSD drawings and the Queensland Department of Transport and Main Roads Manual of Uniform Traffic Control Devices.
5. End-of-trip facilities such as secure bicycle parking, shower cubicles, change rooms and lockers are co-located and provided to meet the needs of users and to encourage bicycle use.
6. Bicycle parking facilities and cyclist facilities are designed and constructed in accordance with Austroads, Part 6a — Bicycles.
7. Table 21 provides the minimum on-site cycling facilities and the standards used.
8. Bicycle parking facilities are not provided within 1m of a vehicle manoeuvring or parking area.
9. In the City core, City frame, centres and growth nodes on selected transport corridors, higher mode share is expected for active travel, and higher levels of facilities and finishes are expected, including, but not limited to, employee bicycle parking incorporated within a building.
10. If bike parking is provided in accordance with this planning scheme policy, and the development is located in close proximity to a bikeway or a major public transport interchange, a performance-based solution for reduced car parking may be considered by the Council.
11. The internal bicycle facilities and paths are to join the external transport network, including

external existing and future bicycle paths in a safe and practical way.

Table 21—Cyclist and pedestrian facilities

Use and user	Standard provision for cyclist and pedestrian facilities
Office or shop with gross floor area exceeding 2,500m^2 — for employees	1 lockable bicycle space per 200m^2 gross floor area in an area that is secured or has a high level of casual surveillance 2 lockers per 1 bicycle parking space (to accommodate pedestrian and cyclist demand) A minimum of 2 shower cubicles with provision for both females and males and an additional 1 shower cubicle with ancillary change rooms per 10 bicycle parking spaces
Office with gross floor area exceeding 2,500m^2 — for visitors	1 lockable bicycle parking space per 500m^2 of which is situated close to building entrance in a location that is obvious from the street frontage and has a high level of casual surveillance
Shop with a gross floor area exceeding 2,500m^2 — for visitors	1 lockable bicycle parking space per 200m^2 of gross floor area which is situated close to building entrance in a location that is obvious from the street frontage and has a high level of casual surveillance
Office or shop with gross floor area exceeding 1,000m^2 (but less than 2,500m^2) — for employees	1 lockable bicycle parking space per 200m^2 in an area that is either secure or has a high level of casual surveillance, and minimum of 1 shower cubicle with provision for both females and males 2 lockers per 1 bicycle parking space
Office with gross floor area exceeding 1,000m^2 (but less than 2,500 m^2) — for visitors	1 lockable bicycle parking space per 750m^2 of gross floor area, or part thereof, which is situated close to the building entrance in a location that is obvious from the street frontage in an area of high casual surveillance
Shop with gross floor area exceeding 1,000m^2 (but less than 2,500m^2) — for visitors	1 lockable bicycle parking space per 500m^2 of gross floor area of part thereof, which is situated close to the building entrance in a location that is obvious from the street frontage in an area of high casual surveillance
Industry with gross floor area exceeding 5,000m^2 — for employees	1 lockable bicycle parking space per 500m^2 gross floor area or 5% of the total vehicle parking spaces (whichever is greater) in an area that is

	either secure or has a high level of casual surveillance 2 lockers per 1 bicycle parking space A minimum of 2 shower cubicles with provision for both females and males and an additional 1 shower cubicle with ancillary change rooms per 10 bicycle parking spaces
Multiple dwelling	1 lockable, covered, bicycle parking space per unit (in either the garage or separate on-site facility) 1 visitor bicycle parking space per 4 units or part thereof
Hostel including off-site student accommodation	1 lockable bicycle parking space for every 2 rooms
Hospital	1 lockable, secure bicycle parking space per 15 beds for employees 1 lockable bicycle parking space per 30 beds for visitors in an area of high casual surveillance
Educational establishment	1 lockable bicycle parking space per 5 pupils over year 4 1 lockable bicycle parking space per 100 full-time students for universities 1 lockable bicycle parking space per 50 full-time students for other educational facilities

Appendix 1 Index and glossary of abbreviations and acronyms

Table AP1.1—Abbreviations and acronyms

Abbreviation/acronym	Description
ABS	Australian Bureau of Statistics
the Act	Planning Act 2016
AEP	annual exceedance probability
AHD	Australian height datum
ALARP	as low as reasonably practicable
ANEF	Australian Noise Exposure Forecast
ANVF	araucarian notophyll vine forest
ANZSIC	Australia New Zealand Standard Industrial Classification
ARI	average recurrence interval
AS AS/NZS	Australian Standard Australian/New Zealand Standard
ASGC	Australian Standard Geographical Classification
ATM	automatic teller machine
BCA	Building Code of Australia
BCC	Brisbane City Council
BSD	Brisbane standard drawing
BSTM	Brisbane Strategic Transport Model
BOD	biochemical oxygen demand
BPEM	best practice environmental management
CASA	Civil Aviation Safety Authority
CBD	central business district
CIMN	critical infrastructure movement network
CNVF	complex notophyll vine forest
CPTED	crime prevention through environmental design
CW	citywide significance

dB	decibel
DBH	diameter at breast height
DFE	defined flood event
DFL	defined flood level
DSS	desired standard of service
DV	depth X velocity product
E	endangered
EP	equivalent persons
ERA	environmentally relevant activity
ET	equivalent tenement
FPA	flood planning area
GFA	gross floor area
GVM	gross vehicle mass
HAT	highest astronomical tide
IARC	International Agency for Research on Cancer
KRA	key resource area
LGA	local government area
HICB	Hazardous Industries and Chemicals Branch
LGIP	Local government infrastructure plan
MAALPI	Statutory guideline 01/16 Making and amending local planning instruments
MERV	minimum efficiency reporting value
MCU	Material change of use as defined in the Act
MGR	Minister's Guidelines and Rules Under the Planning Act 2016
MHF	major hazard facilities
MRAC	Major Regional Activity Centre
MUTCD	Queensland Department of Transport and Main Roads Manual of Uniform Traffic Control Devices
MVF	microphyll vine forest
NIEIR	National Institute of Economic and Industry Research

NFPVF	notophyll feather palm vine forest
NPM	neighbourhood plan map
NPP	neighbourhood plan precinct
NVF	notophyll vine forest
OC	of concern
OLS	Obstacle Limitation Surface
PAH	polycyclic aromatic hydrocarbons
PANS	Procedures for Air Navigation Surfaces
PANS-OPS	Procedures for Air Navigation Services—Aircraft Operational Surfaces
PBC	Port of Brisbane Corporation
PCB	polychlorinated biphenyls
PEF	potency equivalency factors
PET	polyethylene terephthalate
PETE	polyethylene terephthalate
PFTI	plans for trunk infrastructure
PIA	priority infrastructure area
PM	particulate matter
PMF	probable maximum flood
PRAC	Principal Regional Activity Centre
PSP	Planning scheme policy
QDC	Queensland Development Code
QGSS	Queensland Government strategic sites
QUU	Queensland Urban Utilities
RBL	rating background level
RE	regional ecosystem
the Regulation	Planning Regulation 2017
RL	reduced level
ROL	Reconfiguring a lot as defined in the Act

RPEQ	Registered Professional Engineer Queensland
SARA	State Assessment and Referral Agency
SCA	special context areas
SEA	special entertainment area
SEQ	South East Queensland
SEQ Regional Plan	South East Queensland Regional Plan
SLA	statistical local area
the SP Act	Sustainable Planning Act 2009 (repealed)
the SP Regulation	Sustainable Planning Regulation 2009 (repealed)
SPP	State Planning Policy
SRA	strategic redevelopment area
STP	sewerage treatment plant
TCDD	tetrachlorodibenzodioxin
TEF	toxic equivalency factors
TOD	transit oriented development
TSP	total suspended particulates
USEPA	US Environmental Protection Agency
VMP	vegetation management plan
WSUD	water sensitive urban design

Appendix 2 Table of amendments

Table AP2.1—Table of amendments

Date of adoption and effective date	Planning scheme version number	Amendment type	Summary of amendments
9 September 2014 (adoption) and 12 September 2014 (effective)	v01.01/2014	Minor and Administrative	Corrections to planning scheme (2.3A.2(a) of *MAALPI*); Minor amendments to planning scheme (2.3A.3(a); 2.3A.3(d); 2.3A.3(g) of *MAALPI*). Refer to Amendment v01.1/2014 for further detail.
1 September 2015 (adoption) and 4 September 2015 (effective)	v01.02/2015	Minor and Administrative	Corrections to planning scheme (2.3A.2(a); 3.2.1 of *MAALPI*); Minor amendments to planning scheme (2.3A.3(a); 2.3A.3(d); 2.3A.3(g); of *MAALPI*). Refer to Amendment v01.2/2015 for further detail.
15 September 2015 (adoption) and 18 September 2015 (effective)	v01.03/2015	Minor	Minor amendments to planning scheme (2.3A.3(h); 2.3A.3(k) of *MAALPI*). Refer to Amendment v01.3/2015 for further detail.
2 February 2016 (adoption) and 19 February 2016 (effective)	v02.00/2016	Major and interim local government infrastructure plan amendment	Major amendment to planning scheme (2.3A.4 of *MAALPI*); Interim local government infrastructure plan amendment (2.3B.3 of *MAALPI*). Refer to Amendment v02.00/2016 for further detail.
3 May 2016 (adoption) and 13 May 2016 (effective)	v03.00/2016	Major and interim local government infrastructure plan amendment	Major amendment to planning scheme (2.3A.4 of *MAALPI*); Interim local government infrastructure plan amendment (2.3B.3 of *MAALPI*). Refer to Amendment v03.00/2016 for further detail.
30 August 2016 (adoption) and 9 September 2016 (effective)	v03.01/2016	Minor and Administrative	Corrections to planning scheme (2.3A.2(a); 3.2.1(a); 3.2.1(b); 3.2.1(d); 3.2.1(e); 3.2.1(g) of *MAALPI*); Minor amendments to planning scheme (2.3A.3(a); 2.3A.3(d); 2.3A.3(g); 2.3A.3(h); 2.3A.3(k);

			3.2.2(b) of *MAALPI*). Refer to Amendment v03.01/2016 for further detail.
8 November 2016 (adoption) and 18 November 2016 (effective)	v04.00/2016	Major and interim local government infrastructure plan amendment	Major amendment to planning scheme (2.3A.4 of *MAALPI*); Interim local government infrastructure plan amendment (2.3B.3 of *MAALPI*); Major amendment to planning scheme policy (3.2.3 of *MAALPI*) Refer to Amendment v04.00/2016 for further detail.
14 February 2017 (adoption) and 24 March 2017 (effective)	v05.00/2017	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*) and Major amendment to planning scheme policy (3.2.3 of *MAALPI*) for the City Centre neighbourhood plan. Refer to Amendment v05.00/2017 for further detail.
28 February 2017 (adoption) and 24 March 2017 (effective)	v05.00/2017	Major and interim local government infrastructure plan amendment	Major amendment to planning scheme (2.3A.4 of *MAALPI*) and Interim local government infrastructure plan amendment (2.3B.3 of *MAALPI*) for the Hemmant—Lytton neighbourhood plan. Refer to Amendment v05.00/2017 for further detail.
21 March 2017 (adoption) and 24 March 2017 (effective)	v05.01/2017	Minor and administrative amendment	Corrections to planning scheme (2.3A.2(a) of *MAALPI*). Minor amendments to planning scheme (2.3A.3(a); 2.3A.3(d); 2.3A.3(k) of *MAALPI*). Corrections to planning scheme policy (3.2.1(a); 3.2.1(c); 3.2.1(d); 3.2.1(g) of *MAALPI*). Minor amendments to planning scheme policy (3.2.2(b)). Refer to Amendment v05.01/2017 for further detail.
16 May 2017 (adoption) and 19 May (effective)	v06.00/2017	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*); Refer to Amendment v06.00/2017 for further detail.
30 May 2017 (adoption) and 3 July 2017	v07.00/2017	Alignment Amendment and minor	Alignment amendment to planning scheme (Alignment Amendment Rules)(Schedule 1(a)(b)(c) and (d)).

(effective)			Minor amendment to planning scheme (2.3A.3(e) and 2.3A.3(f) of *MAALPI*) for the Yeerongpilly Transit Oriented Development neighbourhood plan . Refer to Amendment v07.00/2017 for further detail.
21 November 2017 (adoption) and 1 December 2017 (effective)	v08.00/2017	Minor and administrative	Minor amendments to planning scheme (Schedule 1, Section 2e), h) and i) of *MGR)*. Minor amendments to planning scheme policy (Schedule 1, Section 6a) and b) of *MGR)*. Administrative amendments to planning scheme (Schedule 1, Section 1a) of *MGR)*. Refer to Amendment v08.00/2017 for further detail.
21 November 2017 (adoption) and 1 December 2017 (effective)	v08.00/2017	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Refer to Amendment v08.00/2017 for further detail.
28 November 2017 (adoption) and 1 December 2017 (effective)	v08.00/2017	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*); Refer to Amendment v08.00/2017 for further detail.
5 December 2017 (adoption) and 16 February 2018 (effective)	v09.00/2018	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Refer to Amendment v09.00/2018 for further detail.
5 June 2018 (adoption) and 29 June 2018 (effective)	v010.00/2018	Major and Minor	Major amendment to planning scheme (2.3B.2 of *MAALPI*) for the Local government infrastructure plan. Major amendment to planning scheme policy (2.3A.4 of *MAALPI*). Minor amendment to planning scheme (2.3A.3 of *MAALPI*) to support the Local government infrastructure plan. Major amendment to planning scheme (2.3A.4 of *MAALPI*) for the Long term infrastructure plans. Administrative amendments to the Local government infrastructure plan (Schedule 1, Section 1a) of *MGR)*. Refer to Amendment v10.00/2018 for further detail.

31 July 2018 (adoption) and 14 September 2018 (effective)	v11.00/2018	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Refer to Amendment v11.00/2018 for further detail.
7 August 2018 (adoption) and 14 September 2018 (effective)	v11.00/2018	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Refer to Amendment v11.00/2018 for further detail.
14 August 2018 (adoption) and 14 September 2018 (effective)	v11.00/2018	Minor and Major	Minor amendment to planning scheme (Schedule 1, Section 2e) of *MGR)*. Refer to Amendment v11.00/2018 for further detail. Major amendment to planning scheme (2.3A.4 of *MAALPI*). Refer to Amendment v11.00/2018 for further detail.
28 August 2018 (adoption) and 21 September 2018 (effective)	V12.00/2018	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Refer to Amendment v12.00/2018 for further detail.
13 November 2018 (adoption) and 23 November 2018 (effective)	v13.00/2018	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2e) of *MGR)*. Administrative amendment to planning scheme policy (Schedule 1, Section 5) of *MGR).* Minor amendment to planning scheme policy (Schedule 1, Section 6 a) and b) of *MGR).* Refer to Amendment v13.00/2018 for further detail.
5 February 2019 (adoption) and 15 February 2019 (effective)	v14.00/2019	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a)iii of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2e) of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2l) of *MGR)*. Refer to Amendment v14.00/2019 for further detail.
14 May 2019 (adoption) and 31 May 2019	v15.00/2019	Major and minor	Major amendment to planning scheme (2.3A.4 of MAALPI). Minor amendment to planning scheme

(effective)			policy (Schedule 1, Section 6b) of *MGR).* Refer to Amendment v15.00/2019 for further detail.
28 May 2019 (adoption) and 26 July 2019 (effective)	v16.00/2019	Major and minor	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Minor amendment to planning scheme policy (Schedule 1, Section 6b) of *MGR).* Refer to Amendment v16.00/2019 for further detail.
4 June 2019 (adoption) and 26 July 2019 (effective)	v16.00/2019	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) and b) of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2e), h) and l) of *MGR)*. Administrative amendment to planning scheme policy (Schedule 1, Section 5 b), c), e) and g) of *MGR)*. Minor amendment to planning scheme policy (Schedule 1, Section 6 b) of *MGR)*. Refer to Amendment v16.00/2019 for further detail.
22 October 2019 (adoption) and 29 November 2019 (effective)	v17.00/2019	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*); Major amendment to planning scheme policy (3.2.3 of *MAALPI*); Refer to Amendment v17.00/2019 for further detail.
29 October 2019 (adoption) and 29 November 2019 (effective)	v17.00/2019	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) and b) of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2e), h) and l) of *MGR)*. Administrative amendment to planning scheme policy (Schedule 1, Section 5) b), c), e) and g) of *MGR)*. Minor amendment to planning scheme policy (Schedule 1, Section 6 b) of *MGR)*. Refer to Amendment v17.00/2019 for further detail.

19 November 2019 (adoption) and 29 November 2019 (effective)	v17.00/2019	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR*) Refer to Amendment v17.00/2019 for further detail.
19 November 2019 (adoption) and 29 November 2019 (effective)	v17.00/2019	Amendment	Amendment to planning scheme policy (Schedule 1, Section 7 of *MGR*). Refer to Amendment v17.00/2019 for further detail.
19 November 2019 (adoption) and 28 February 2020 (effective)	v18.00/2020	Major and minor	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Minor amendment to planning scheme policy (Schedule 1, Section 6 b) of *MGR).* Refer to Amendment v18.00/2020 for further detail.
19 November 2019 (adoption) and 1 May 2020 (effective)	v19.00/2020	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR)*. Refer to Amendment v19.00/2020 for further detail.
26 November 2019 (adoption) and 28 February 2020 (effective)	v18.00/2020	Major and minor	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Minor amendment to planning scheme policy (Schedule 1, Section 6 b) of *MGR)*. Refer to Amendment v18.00/2020 for further detail.
8 September 2020 (adoption) and 30 October 2020 (effective)	v20.00/2020	Major	Major amendment to planning scheme (2.3A.4 of *MAALPI*). Major amendment to planning scheme policy (3.2.3 of *MAALPI*). Refer to Amendment v20.00/2020 for further detail.
11 May 2021 (adoption) and 28 May 2021 (effective)	v21.00/2021	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR*). Refer to Amendment v21.00/2021 for further detail.
18 May 2021 (adoption) and 28 May 2021 (effective)	v21.00/2021	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) and b) of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2c), e), k) and l) of *MGR*). Administrative amendment to planning scheme policy (Schedule 1, Section 5

			b), c), e) and g) of *MGR*). Minor amendment to planning scheme policy (Schedule 1, Section 6 a) and b) of *MGR*). Refer to Amendment v21.00/2021 for further detail.
3 August 2021 (adoption) and 3 September 2021 (effective)	v22.00/2021	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR*). Refer to Amendment v22.00/2021 for further detail.
23 November 2021 (adoption) and 10 December 2021 (effective)	v23.00/2021	Interim local government infrastructure plan amendment	Interim amendment to *Brisbane City Plan 2014*: Local government infrastructure plan (LGIP) (Section 17 of the *Planning Act 2016*). Refer to Amendment v23.00/2021 for further detail.
23 November 2021 (adoption) and 10 December 2021 (effective)	v23.00/2021	Tailored amendment	Tailored amendment to *Brisbane City Plan 2014*: Long term infrastructure plans (Section 18(3) of the *Planning Act 2016*) Refer to Amendment v23.00/2021 for further detail.
22 March 2022 (adoption) and 27 May 2022 (effective)	v24.00/2022	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR*). Amendment to planning scheme policy (Chapter 3, Part 1 of *MGR*). Refer to Amendment v24.00/2022 for further detail.
22 March 2022 (adoption) and 27 May 2022 (effective)	v24.00/2022	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) of *MGR*). Minor amendment to planning scheme (Schedule 1, Section 2e), h) and l) of *MGR*). Administrative amendment to planning scheme policy (Schedule 1, Section 5d) of *MGR*). Refer to Amendment v24.00/2022 for further detail.
1 November 2022 (adoption) and 2 December 2022 (effective)	v25.00/2022	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR)*. Amendment to planning scheme policy (Chapter 3, Part 1 of *MGR)*. Refer to Amendment v25.00/2022 for further detail.

29 November 2022 (adoption) and 10 March 2023 (effective)	v26.00/2023	Major	Major amendment to planning scheme (Chapter 2, Part 4 of MGR). Amendment to planning scheme policy (Chapter 3, Part 1 of MGR). Refer to Amendment v26.00/2023 for further detail.
6 December 2022 (adoption) and 10 March 2023 (effective)	v26.00/2023	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) and b) of *MGR*). Minor amendment to planning scheme (Schedule 1, Section 2c) and e) of *MGR*). Refer to Amendment v26.00/2023 for further detail.
14 February 2023 (adoption) and 10 March 2023 (effective)	v26.00/2023	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) of *MGR)*. Minor amendment to planning scheme (Schedule 1, Section 2e) h) and i) of *MGR)*. Refer to Amendment v26.00/2023 for further detail.
16 May 2023 (adoption) and 2 June 2023 (effective)	v27.00/2023	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a)ii), a)iv), a)vii) and b)i) of *MGR*). Minor amendment to planning scheme (Schedule 1, Section 2l) of *MGR*). Minor amendment to planning scheme policy (Schedule 1, Section 6b) of *MGR*). Administrative amendment to planning scheme policy (Schedule 1, Section 5b) and e) of *MGR*). Refer to Amendment v27.00/2023 for further detail.
13 June 2023 (adoption) and 1 September 2023 (effective)	v28.00/2023	Major	Major amendment to planning scheme (Chapter 2, Part 4 of *MGR*). Amendment to planning scheme policy (Chapter 3, Part 1 of *MGR).* Refer to Amendment v28.00/2023 for further detail.
1 August 2023 (adoption) and 1 September 2023 (effective)	v28.00/2023	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1b)i) of *MGR*). Minor amendment to planning scheme

			(Schedule 1, Section 2k) of *MGR*). Refer to Amendment v28.00/2023 for further detail.
31 October 2023 (adoption) and 8 December 2023 (effective)	v29.00/2023	Minor and administrative	Administrative amendment to planning scheme (Schedule 1, Section 1a) of *MGR*). Minor amendment to planning scheme (Schedule 1, Section 2l) and m) of *MGR*). Administrative amendment to planning scheme policy (Schedule 1, Section 5(d) of *MGR*). Minor amendment to planning scheme policy (Schedule 1, Section 6b) of *MGR*) Refer to Amendment v29.00/2023 for further detail.
14 November 2023 (adoption) and 8 December 2023 (effective)	v29.00/2023	Planning scheme policy amendment	Amendment to planning scheme policy (Chapter 3, Part 1 of *MGR*). Refer to Amendment v29.00/2023 for further detail.
28 November 2023 (adoption) and 8 December 2023 (effective)	v29.00/2023	Minor	Minor amendment to planning scheme (Schedule 1, Section 2e) of *MGR*). Minor amendment to planning scheme policy (Schedule 1, Section 6b) of *MGR*). Refer to Amendment v29.00/2023 for further detail.