

**Table 4-4: Constraint Scale Ranges**

Buffer distance range	Relevant site and system constraints	Constraint scale	
		Low	High
Property Boundaries			
1.5m – 15.0m	Effluent quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Slope	0-6% (surface effluent application) 0 -10% (subsurface effluent application)	>10% (surface effluent application) >30% (subsurface effluent application)
	Method of application	Subsurface or subsoil application	Surface/ above ground application
Buildings			
2.0m – 6.0m	Effluent quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Slope	0-6% (surface effluent application) 0 -10% (subsurface effluent application)	>10% (surface effluent application) >30% (subsurface effluent application)
	Method of application	Subsurface or subsoil application	Surface/ above ground application
Retaining Wall/ Embankment Cutting			
Greatest of 3.0m or 45° angle from toe of wall	Slope	0-6% (surface effluent application) 0 -10% (subsurface effluent application)	>10% (surface effluent application) >30% (subsurface effluent application)
	Flood potential	Above 1 in 20-year flood contour	Below 1 in 20-year flood contour
	Geology/ Soil	Category 3 and 4 soils, low porosity regolith, deep, uniform soils	Category 1 and 6 soils, fractured rock, gravel aquifers, high porosity regolith
Path/ Walkway			
1.5m – 6.0m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Fall direction	Downgradient of surface water body, property boundary, recreational area	Upgradient of surface water body, property boundary, recreational area
	Method of Application	Subsurface or subsoil application	Surface/ above ground application
Swimming Pool/ Recreational Area/ Market Garden			
3.0m – 15.0m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Fall direction	Downgradient of surface water body, property boundary, recreational area	Upgradient of surface water body, property boundary, recreational area
	Method of Application	Subsurface or subsoil application	Surface/ above ground application

Buffer distance range	Relevant site and system constraints	Constraint scale	
		Low	High
In-ground water tanks and services (water, electrical, telecommunications and plumbing)			
3.0m – 15.0m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Fall direction	Downgradient of surface water body, property boundary, recreational area	Upgradient of surface water body, property boundary, recreational area
Permanent Surface Water Body			
50.0m – 100.0m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Surface water pollution hazard	Category 1 to 3 soils no surface water down gradient within 100m; low rainfall area	Category 4 to 6 soils permanent surface water <50m down gradient; high rainfall; high resource/ environmental value
	Slope	0-6% (surface effluent application) 0 -10% (subsurface effluent application)	>10% (surface effluent application) >30% (subsurface effluent application)
	Fall direction	Downgradient of surface water body, property boundary, recreational area	Upgradient of surface water body, property boundary, recreational area
	Drainage	No visible signs of saturation	Visible seepage; moisture tolerant vegetation; low lying area
	Flood Potential	Above 1 in 20-year flood contour	Below 1 in 20-year flood contour
	Application Method	Subsurface or subsoil application	Surface/ above ground application
Intermittent water bodies, farm dams, roadside drainage, drainage depressions			
15.0m – 40.0m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Surface water pollution hazard	Category 1 to 3 soils no surface water down gradient within 40m; low rainfall area	Category 4 to 6 soils intermittent surface water <20m down gradient; high rainfall; high resource/environmental value
	Slope	0-6% (surface effluent application), 0 -10% (subsurface effluent application)	>10% (surface effluent application), >30% (subsurface effluent application)
	Fall direction	Downgradient of surface water body, property boundary, recreational area	Upgradient of surface water body, property boundary, recreational area
	Drainage	No visible signs of saturation	Visible seepage; moisture tolerant vegetation; low lying area
	Flood Potential	Above 1 in 20-year flood contour	Below 1 in 20-year flood contour
	Method of Application	Subsurface or subsoil application	Surface/ above ground application

Buffer distance range	Relevant site and system constraints	Constraint scale	
		Low	High
Bore/ Well			
15.0m – 100.0m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Groundwater pollution hazard	Category 5 and 6 soils, low resource/ environmental value	Category 1 and 2 soils, gravel aquifers, high resource/ environmental value
	Geology / Soil	Category 3 and 4 soils, low porosity regolith, deep, uniform soils	Category 1 and 6 soils, fractured rock, gravel aquifers, high porosity regolith
Groundwater			
0.6m – 1.5m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Groundwater pollution hazard	Category 5 and 6 soils, low resource/ environmental value	Category 1 and 2 soils, gravel aquifers, high resource/ environmental value
	Drainage	No visible signs of saturation	Visible seepage; moisture tolerant vegetation; low lying area
	Geology/ Soil	Category 3 and 4 soils, low porosity regolith, deep, uniform soils	Category 1 and 6 soils, fractured rock, gravel aquifers, high porosity regolith
	Landform	Hill crests, convex side slopes, and plains	Drainage plains and incised channels
	Method of Application	Subsurface or subsoil application	Surface/ above ground application
Bedrock/ Hardpan			
0.6m – 1.5m	Effluent Quality	Minimum of secondary treated effluent (with disinfection and contractual service agreement)	Primary treated effluent
	Groundwater pollution hazard	Category 5 and 6 soils, low resource/ environmental value	Category 1 and 2 soils, gravel aquifers, high resource/ environmental value
	Method of Application	Subsurface or subsoil application	Surface/ above ground application
NOTES from Table 4-2 and 4-3:			
1. Buffers for subsurface drip irrigation of a minimum of secondary treated effluent downslope of an upslope property boundary, may be reduced to 0.5 metre.			
2. Buffers to recreational areas on existing lots may be removed if no suitable alternative area is available within the lot boundary and provided subsurface or subsoil application and a minimum of secondary treated effluent are used.			
3. In drinking water extraction areas and oyster aquaculture areas, buffers should be set in consultation with Water Authorities and NSW Food Authority. Examples can be found in the ‘Designing and Installing On-site Wastewater Management Systems (WaterNSW 2023a) and NSW Oyster Industry Sustainable Aquaculture Strategy (DPI 2021a).			
4. This includes bores and wells with water used for potable use (e.g. within a dwelling). Reduced buffers must be justified by viral die-off modelling. In groundwater extraction areas for a potable supply, buffers should be set in consultation with Water Authorities.			

