

Abbreviations

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Abbreviations

Abbreviations used throughout this Manual.

AADT	Annual Average Daily Traffic
AS	Australian Standard
CCTV	Close Circuit Television
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CAS	Contract Administration Systems Manual
CPTED	Crime Prevention Through Environmental Design
DERM	Department of Environment and Resource Management
DOTARS	Department of Transport and Regional Services
DBYD	Dial Before You Dig (1100)
DDA	Disability Discrimination Act
DDPSM	Drafting and Design Presentation Standards Manual
EPA	Environmental Protection Act
IAS	Impact Assessment Statement
ITS	Intelligent Transport System
LR	Landscape and Revegetation
LGA	Local Government Authority
MR	Main Roads
MRS	Main Roads Specification
MRTS	Main Roads Technical Standard
MRS04	Main Roads Specification – General Earthworks
MRTS04	Main Roads Technical Standard - General Earthworks Annexure
MRS16 A-E	Main Roads Specification -General Requirements Landscape and Revegetation Works
MRTS16 A-E	Main Roads Technical Standard - General Requirements Landscape and Revegetation Works
MRS51	Main Roads Specification – Environmental Management
MRTS51	Main Roads Technical Standard – Environmental Management Annexure
MP&O	Maintenance, Performance and Operations
P&DCP	Pest & Disease Control Proposal
PSP	Plant Supply Proposal
PMMP	Planting Media Management Plan
PMMP-C	Planting Media Management Plan – Construction
PUP	Public Utility Provider
QTRIP	Queensland Transport and Roads Implementation Plan
RPEQ	Registered Practicing Engineer Queensland
RE	Regional Ecosystem types (vegetation)
REF	Review of Environmental Factors
RLF	Road Landscape Frameworks
SSP	Seed Supply Proposal
SMM	Soil Management Manual
SMP	Soil Management Plan
SMP-P	Soil Management Plan - Planning
SMP-D	Soil Management Plan - Design
SEQ	South East Queensland
SCRC	State Controlled Road Corridor
TMR	Transport and Main Roads
UD	Urban Design
VMP	Vegetation Management Plan
V:H	Vertical : Height Ratio
WSUD	Water Sensitive Urban Design

Glossary

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Glossary

The following definitions for terms should be applied in the interpretation of this Manual.

Advanced Plants: Trees and large shrubs in 25 litre or larger containers.

Amelioration (of soil): Material additives mixed with soil (site soil or imported) to alter the chemical or physical properties. Refer also to **Amelioration Agents** definition.

Amelioration Agents: Additives such as lime, dolomite, gypsum, fertilizer, soil conditioner or wetting agents mixed into soil (site soil or imported) in order to improve undesirable soils and their characteristics, making suitable for successful and sustainable plant growth. Some amelioration agents can be used to mitigate dispersion risks associated with disturbed subsoils, stabilising outer zone embankments and minimising the risk of erosion.

Amenity: A general term to describe the level of comfort, pleasantness and character of places and facilities. Amenity can be derived from either natural or man-made origins. Amenity can also be associated with public, scenic and visual amenity.

Amenity Block: A built structure constructed from a variety of materials which contains generally a minimum of toilet and hand washing basin facilities. In larger structures, shower facilities are also accommodated. These amenity facilities are provided for use by the general public and may be implemented at Rest Stop Areas. Refer also to **Rest Stop Areas** definition.

Annual Average Daily Traffic: Calculated by dividing the total; real or projected, yearly traffic volume in both directions by 365 (the number of days in the year).

Approach Sight Distance: Stopping Sight Distance on the approaches to an at-grade intersection. The approaching driver must be able to sight and appreciate the intersection geometry and pavement markings to be able to either negotiate the intersection or stop, whichever is required.

Batter: The uniform side slope of a cutting or embankment, expressed as a ratio of 1 unit vertical on 'x' units horizontal. Refer also to **Cutting** definition.

Benching: A ledge cut or formed in a batter to provide greater security against slips and to segment the slope length to reduce erosion potential.

Biodiversity: The variety of plants, animals and micro-organisms and the ecosystems of which they are a part. It is usually considered at three levels: genetic diversity, species diversity and ecosystem diversity. Refer also to **Ecosystem** definition.

Bioretention Basin: A constructed basin with a vegetated bed of filter material, designed to capture storm water runoff and filter and remove pollutants.

Bioretention Swale: A swale which includes a vegetated infiltration trench within the invert of a swale, which is designed to enhance the removal of both particles and nutrients. Refer also to **Swale** definition.

Borrowed Landscapes: A design technique used to bring ('borrow') distant or surrounding parts of the existing environment into the immediate road landscape. This is achieved largely through

incorporating existing views and vistas to extend the borders of the road landscape. Through appropriate design measures, parts of the immediate landscape can blend naturally into background environment.

Breakaway: A device that allows an object such as a sheer bolt fixing plate on a sign, or luminary, to yield or separate upon impact.

Broadcast Seeding: Involves seed being broadcast on the ground surface by small hand spinners or agricultural spinners, combined with a tractor or truck. Subsequent passes are required to be broadcasted at 90 degrees to the first pass.

Buffer Strips: Vegetation planted at a density to achieve visual or environmental buffering from adjoining areas. Buffer strips can also be used for storm water management, assisting storm water flows and infiltration into soils when placed on vegetated slopes.

Carbon Sequestration: The capture and long-term storage of carbon with the potential to mitigate the effects of global warming and climate change. Collections, communities or groups of vegetation such as existing forests or street tree planting may provide opportunities to sequester carbon (subject to further research).

Carriageway: The portion of the road formation, including lanes, auxiliary lanes and shoulders that are set aside for the use of vehicles.

Capping:

Median Capping: Concrete slab placed on top of road formation bounded by concrete kerbing to form splitter islands between carriageways or direct and/or separate traffic through turning movements. Median capping is utilised in narrower medians and splitter islands to permit errant vehicle recovery and minimise road worker risk in maintaining areas of limited accessibility. Special finishes are typically applied to delineate the surface and contribute to the sense of place within the streetscape.

Wall Capping: An element of wall construction that tops the wall facing material and assists in sealing the joint between wall facing and structural backing or the wall structure. The capping can be of the same or contrasting material to the wall facing and assist in directing water away from the face of the wall.

Catch Bank (syn. Diversion Bank): An earth bank constructed across the top of a slope for the purpose of intercepting and diverting water.

Catch Drain: Surface channel constructed along the high side of the road to intercept surface water flowing towards the road cuttings or embankments to prevent scouring. The drain also redirects water to a drain inlet or culvert.

Catchment Area: An area determined by topographical features which funnels, collects and channels water downhill into a waterway; for example, a river, lake or wetland. A catchment area includes both the streams and rivers that convey the water as well as the actual land surface from which water drains into those channels.

Channelised Intersection: An intersection provided with medians and/or islands for defining the trafficable area and to control specific movement.

Check Dam: An element built up above the finished surface placed perpendicular to the water flow, typically used in channels conveying concentrated flows to control flow velocity and minor gully erosion. They may be constructed from semi-pervious or impervious materials such as medium-size rock or sand and gravel filled bags.

Chemical Mowing: A method used to reduce the frequency of mowing activities by applying specific herbicides to burn off or 'knock down' selected vegetation, without actually killing the vegetation.

Clear Trunk: Applies to the height above ground level in which trees have their lower branches removed through appropriate formative pruning methods, to achieve a desired canopy clearance. This process can be undertaken at nurseries prior to trees being supplied or during establishment and monitoring periods. Refer also to **Crown Lifting** definition.

Clear Zone: The area that commences at the outer most edge-line marking of the carriageway and is available for emergency use by errant vehicles. The distance that the clear zone extends from the carriageway edge is dependant on the traffic volume, road geometry and design speed of the road. This area may consist of a shoulder, parking bays, a recoverable slope and a clear run-out area. The clear zone should be kept free from features potentially hazardous to errant vehicles.

Container Stock (syn. Pot Sized Plants): Trees, shrubs, groundcovers and tufted grass species that are supplied in plant containers such as virocells, virotubes, half and full native tubes and containers sized from 140mm to 200 litres and larger. Containerised plants range from immature to semi-mature specimens.

Cover Crop: A blend of annuals, often sterile grass species applied as seed to temporarily stabilise stockpiles, batters and broadacre areas; often (seed) deadheaded or sprayed with herbicide and left to form a green compost for perennial plants.

Crest Vertical Curve: A vertical curve in the road where the apex is at the highest point on the curve.

Crime Prevention Through Environmental Design (CPTED): The practice of applying a range of site specific principles into the planning, design and management of a physical environment; in order to discourage the incidence and fear of criminal behaviour, increase an individual's perception of personal safety, and improve the quality of life for users.

Cross Section: A vertical view drawn at right angles to the control line, showing the existing ground and the various elements that make up the road composition.

Crown Lifting: A formative pruning technique involving the removal of the lower branches (whole or part of) of a tree to a desired height. This process is normally conducted once trees are established or are at maturity to form a clear trunk and retain required canopy clearance heights for safety purposes. Crown lifting should be carried out using formative pruning techniques as per *Australian Standard AS4373 – 2007; 'Pruning of amenity trees'*. Refer also to **Clear Trunk** definition.

Cultural Heritage: A derivative of the cultural values associated with places and/or events of human and community significance and can include/be related to aesthetic, historical, scientific, geographical or social factors. These factors collectively contribute to environmental values and are an integral part of public amenity.

Culvert: One or more adjacent pipes or enclosed channels for conveying a watercourse or stream below road formation level.

Cut and Cover Tunnel: A construction method used to create tunnels (minimum length of 90m). Concrete piers are constructed along the length of the tunnel creating a structural framework to support the walls and roof of the tunnel. The void of the tunnel can then be excavated. Concrete beams are placed to span the void and create the roof of the tunnel. This allows the “cover” (in the form of soil and/or pavement) to be placed over the roof. Cut and Cover is a more cost-effective and economical method of boring tunnels in certain types of situations. The type and density of the underlying geology will be a determining factor in the selection of this option.

Cutting: An excavation through a road corridor that creates a batter on one or both sides of the road alignment. Cuttings are at a specified grade or slope according to the contour/cut lines shown on the construction drawings.

Cycleway: A separate path or a portion of the road (either shared or exclusive) allotted to the use of cyclists.

Declared Plant: Plants listed under three different classes that reflect the level of control required by legislation - refer to the Land Protection (Pest and Stock Route Management) Act 2002 and the Land Protection (Pest and Stock Route Management) Regulation 2003 for requirements at <http://www.dpi.qld.gov.au>

Design Exception: A variance to the Department’s accepted design standards. The Department’s Regional Director is responsible for assessing the exception on a case by case basis and granting approval or rejection. Detailed design drawing plans must document and note any design exception. These plans require the signature of a professional engineer registered under the Board of Professional Engineers of Queensland (RPEQ).

Design Speed: Operating speed of individual elements of a road, including straights, horizontal curves and vertical curves, i.e. a nominal speed adopted for the design of the geometric features of the road.

Design Team: Design professionals involved in the planning and design of the road corridor. The design team can include design consultants, alliances, partnerships, peer reviewers, Departmental personnel and any other specialist design discipline areas. It should be noted that these disciplines extend beyond Landscape Architecture and Urban Design.

Dial Before you Dig (DBYD): A free service which locates and provides information on underground pipes and cables.

Direct Seeding: The mechanical placement of seed in specific locations within the ground.

Diversion Bank: Refer to **Catch Bank** definition.

Drainage Channel: A hydraulically designed open channel constructed from either natural or an artificial material that intercepts, captures and diverts surface water from its natural flow to a designated drainage point/s.

Drill Seeding: An available method of direct seeding. This method is similar to broadcasting in that conventional agricultural tractors are coupled with combined seeders or drills. The drill, through either a disk or tine and tube, delivers the seed and fertiliser evenly in the soil in a single pass operation.

Dripline: The outline formed by the outer tips of the branches of a plant. This outline, projected to the

ground below, indicates the extent of (in a majority of cases), a plant's root system.

Ecological Restoration: The process of returning a site to a desired state through intentional activity to initiate or accelerate the recovery of an ecosystem with respect to its health, integrity and sustainability. The process assists recovery of an ecosystem that has been degraded, damaged or destroyed.

Ecologically Sustainable Development: Development that meets present needs without significant compromise to ecological processes and the environment's potential to provide quality of life for future generations.

Ecosystem: A dynamic and complex system formed by the interaction of a community of organisms, including plants, animals, fungal and micro-organisms, with their associated physical non-living environment. These communities interact as unique ecological units.

Edge Effects: Relates to ecology, in that it is the effect of the juxtaposition of contrasting environments which adjoin each other, on an ecosystem. Edge effects may be the result of a change in species composition, physical site or habitat conditions, or other ecological factors at the boundary between (or near to) two ecosystems. Refer also to **Ecosystem** definition.

Embankment (syn. Fill Embankment): Earthworks constructed above natural and/or existing ground level from fill material. Material is placed to the grade, shape and dimensions shown on the construction drawings.

Endemic: A native plant species prevalent in or peculiar to a particular locality or region and often further confined to a specific habitat.

End Treatment: The designed modification at the end of a roadside or median safety barrier.

Eighty-Fifth Percentile Speed: The speed at, or below which eighty-five percent of cars are observed to travel past a nominated point under free flowing conditions.

Entering Sight Distance: The sight distance needed for a vehicle to enter from a side street and accelerate such that it would not impede traffic on a non-terminating approach travelling in the same direction.

Environmental Matting: A range of environmental matting products are commercially available and vary from synthetic blankets acting as root protective layers, to organic mats of jute mesh or coir which assist vegetation establishment and protect soil from erosion. All matting products are generally used in conjunction with a revegetation technique.

Erosion Control Blankets: Refer to **Environmental Matting** definition.

Exotic: Plant species of foreign origin or character, introduced from another country, and not native to Australia.

Ex-ground Stock: Advanced plants grown in the ground, rather than in containers, then later excavated for use within a landscape. They are often transplanted from off-site locations and require root pruning preparations prior to planting on site. Refer also to **Advanced Plants** definition.

Fauna: Refers to animals, both individually and collectively.

Fauna Movement Device: A structural device designed to create the safer and more secure movement of fauna, including fish, under or over a roadway.

Fencing: A freestanding structure and/or barrier designed to partition an area and prevent or restrict pedestrian and/or fauna movement across a boundary, particularly in hazardous situations.

Finished Ground Surface/ Level: The finished surface/ level attained after construction works have been carried out under the Contract.

Fill Material: Material used to construct an embankment and form up to the subgrade level. Material can be composed of either existing earth matter and/ or existing material extracted from site which is structurally suitable for use in embankments, or from material imported onto site to meet fill requirements.

Flora: Refers to plants, both individually and collectively.

Footpath: This area is located between the face of the kerb and the property boundary for use by pedestrian traffic, possible bicycle traffic and also for the placement of utility services. Footpaths typically share the same longitudinal gradient as the adjoining roadway.

Footway: A pedestrian facility on a bridge.

Footprint: The physical ground surface area occupied by a building or structure (whether existing or planned).

Formal Planting: Planting design with structured and consistent patterns or shapes that are used to create a sense of identity within the streetscape or landscape.

Framed View: A view framed by other items within the landscape, either to both sides or to one side; to create visual balance and symmetry.

Frangible: A type of structure that is readily or easily broken up or collapsible on impact.

Frangible Vegetation: Plants with slender stems (equal to or less than 70-100mm – when measured from 300mm above finished ground surface level), which give way, break or uproot on impact. Groundcovers and shrubs are all generally frangible except for large shrub species exceeding 3.5m in mature height. Trees are not considered frangible.

Gabion: A steel wire mesh cage which is filled with rock particles and used to construct a retaining system. Refer also to **Retaining System** definition.

Grassing: The broad scale application of a chosen singular or combined specific grass seed specie/s suitable to establish the growth of grass within a defined area, over a period of time.

Grassland: A vegetation alliance dominated by native or indigenous grasses, with few, if any shrubs.

Hard Landscape: Manufactured or built structures and urban design elements including but not limited to bridges, tunnels, noise barriers, retaining walls, garden edging and pedestrian facilities.

Heat Island Effect: Refers to an increase in the ambient air and surface temperatures in urban areas relative to surrounding rural areas. This is largely attributed to increased reflected and radiated sunlight, reduced evapo-transpiration and shade due to buildings, other built structures and paved

surfaces.

High Profile Areas: Off road areas that are highly visible to the public. These areas are often associated with key components of the road system, including interchanges and intersections.

Hinge Point: The point where the extended cross-fall of the verge area meets with the batter slope. This point is associated with rounding where it is applied.

Holding Line: A broken traverse pavement marking which shows motorists the safe position for the vehicle to be held at give-way signs or roundabouts.

Horizontal Curve: A curve in the roadway along the horizontal plane.

Horizontal Curve Adjustment Factor: A factor that is used to adjust/calculate the clear zone on a road with horizontal curvature.

Hydromulching: A hydraulic spray operation (generally pumped through a long hose) which applies a slurry mix of water, fibre, binder, seed, fertiliser and other soil amelioration agents directly onto cuttings and embankments;. The fibre material may include hay/straw, sugar cane, industrial hemp, wood or paper.

Hydroseeding: Involves seed and fertiliser being sprayed hydraulically onto relatively flat slopes through a purpose built hydroseeder.

Informal Planting: Planting with organic shapes and species mixing without regular geometric patterning. May be used to simulate a natural landscape pattern or as a contrast to formal planting.

Inner Lane: The lane adjacent to the median in multi-lane divided roads.

Integration: The assimilation of an element with its environment, usually with minimum contrast and maximum compatibility.

Integrity: A measure of holism within areas.

Interchange: A grade separation of two or more roads with one or more interconnecting roadways.

Interpretive Sign: Non-operational (regulatory, warning and guide) signs including tourism, public service announcements and interpretive elements, designed to be highly visible and convey a clear message to the public. Signs can have an interactive purpose and often include a combination of text and symbols to communicate the intended meaning to the audience.

Intersection: A place where two roads cross paths.

Interface: A surface regarded as the common boundary of two bodies, spaces, or phases.

Junction: The meeting of two or more roadways; term given to the combined group of interchanges, intersections and roundabouts.

Land Bridge: A bridge spanning a roadway that is designed to carry a load consisting of soil, vegetation and typically pedestrian walkways. The width of the Land Bridge can be a little as 15m and up to 90m. Construction methods may utilise similar approaches to Cut and Cover Tunnels such as cutting through a landform, or utilise traditional fill embankment construction methods. The purpose of

constructing a Land Bridge may be to link wildlife corridors, connect open space by providing pedestrian connectivity and/or compensate for loss of open space due to the road construction. Refer also to **Cut and Cover** definition.

Landscape: A holistic term that encompasses visual, ecological and cultural values of the physical environment.

Landscape Sensitivity: Refers to the landscapes relative sensitivity to change. It determines how sensitive the landscape character of the setting is to the proposed changes relative to the road proposal. A landscape's uniqueness within the broader landscape, its continuity and ability to change without obvious alteration to character, all determine the level of landscape sensitivity.

Landscape Structures: Any constructed or installed structures associated with landscape works including roadside furniture, retaining walls, and fencing.

Lane: Part of the roadway set aside for the normal movement of a single stream of vehicles.

Local Road: Local road/street and combined pedestrian/cyclist networks which lie under the jurisdiction of local authorities. Local Roads also include any other associated infrastructure and landscape areas that interface and connect with the Department's road corridors.

Longitudinal Barrier: Refer to **Safety Barrier** definition.

Monitoring Period: The period from the completion of the LR establishment period and extends for the duration specified in *MRS16 and MRTS16 Landscape and Revegetation Works Specification Suite*.

Landscape Treatment: Landscape Treatment (LR) – a generic term for the design and treatment of all 'soft' components of a project works, for example, application of various planting treatments and work items that collectively result in the vegetation of an area.

Macrophyte Plant: An aquatic or marginal aquatic plant which aids in the removal of particulates from turbid water; often used in wetlands, sediment basins, detention ponds, and retention ponds.

Manoeuvre Sight Distance: The distance needed for a driver to react to a hazard and manoeuvre around the obstruction.

Median: The central strip of road not intended for use by traffic, which separates opposing traffic flows. Median width includes both adjacent shoulders.

Median Barrier: Refer to **Safety Barrier** definition.

Microclimate: The climate within a confined space or small geographic area.

Minimum Gap Sight Distance: The sight distance needed for the driver of an entering vehicle to see a gap in the conflicting streams sufficient to safely start their desired manoeuvre.

Mounding (syn. Earthen Mounding): Localised areas of earth/ landform raised above the typical finished ground level. Preferable surface covering is buffer planting, yet can also contain a surface treatment of grass or turf.

Mulch: Any inorganic or organic material placed over planting media or soil to conserve moisture,

suppress weeds, hold the soil in place, aid in establishing plant cover, increase filtration and minimise soil temperature fluctuation.

Native: Plants native to Australia. They can occur as endemic, and may include hybrid varieties (or forms).

Natural Ground Surface/ Level: The ground surface/ level that exist prior to any construction work being carried out under the Contract.

Naturalistic Approach: Involve the application of native plant seed and/or tube stock. Seed is broadcasted, hydroseeded, hydromulched, or drilled and tube stock may be planted independently or in combination with the seeding application. Planting setout is random (seeding) to semi-random (tube stock) in order to achieve a natural appearance. It may require the selective removal of non-complying plant material (from seed) from sight visibility areas and clear zones during the first 1-2 years of growth.

Noise Attenuation Structures: Include earth mounds, barriers and fences (or a combination of both); designed primarily to mitigate traffic noise levels generated by the roadway to adjoining residences and community facilities, such as schools. They are aligned along required sections of the road corridor to set standards and reflect or absorb road traffic noise from use areas. These structures also perform a secondary role in preventing trespassing into the road corridor. Refer also to **Noise Barrier** definition.

Noise Barrier: Wall structures or lengths of panels affixed to posts, designed to attenuate noise.

Non-frangible: An unyielding object that is not readily or easily broken upon impact.

Non-frangible Vegetation: Plants which are not readily or easily broken on impact (plants with trunks greater than 70-100mm when measured from 300mm above finished ground surface level). Non-frangible vegetation generally refers to plants exceeding 3.5m in mature height. Trees (and large shrubs) are considered non-frangible.

Organics Blanket: Generally consists of compost material and a binder. It may also comprise soil ameliorant agents if required. Its main purpose is preventing erosion, particularly on steep slopes and embankments, and filtering out silt from sheet flow erosion. It can be used as an organic blanket alone, yet most often includes plant or grass seed mixes also. The chosen mix is blown on as a surface blanket. Whilst largely assisting in preventing disturbed soils against erosion, the blanket also provides many of the other benefits provided by mulch. Refer also to **Mulch** definition.

Outer Lane: The lane adjacent to the left hand shoulder on multi-lane divided roads.

Outlet: The point at which water discharges from a stream, river, lake, tidewater artificial dam or drainage structure.

Overtaking Sight Distance: The distance needed for one vehicle to overtake another vehicle, without interfering with the speed of an oncoming vehicle.

Panoramic View: A broad view which includes the landscape as a whole viewable area.

Pavement (syn. Road Pavement): The structural component that supports traffic on the road.

Planting Media: Stripped site soil (topsoil or subsoil) or imported soil that complies with *MRS16 and*

MRTS16 Landscape and Revegetation Works Specification Suite requirements.

Point of Conflict: The road space required by one vehicle or traffic movement, which is simultaneously needed by another vehicle or traffic movement.

Pot Sized Plants: Pot sized plants are specimens that are in an immature state and have been grown to a pot size measured in millimetres.

Prospect and Refuge (theory): A theory developed by geographer Jay Appleton which describes a space as having a sense of openness and paramount view, without the user feeling exposed, or unprotected. Prospect and refuge seeks to provide both retreat and perspective; key components for the basis of Crime Prevention Through Environmental Design (CPTED) principles. Refer also to **Crime Prevention Through Environmental Design (CPTED)** definition.

Public Amenity: The desirable, valued and convenient aspects of a public place or location which contribute to its overall character and its enjoyment by residents or visitors. Features which enhance community value and desirability, the level of attractiveness and user satisfaction, all contribute to achieving public amenity. Refer also to **Amenity** definition.

Remnant Vegetation: Under the *Vegetation Management Act 1999* remnant vegetation means –
vegetation, part of which forms the predominant canopy of the vegetation –

- a) covering more than 50% of the undisturbed predominant canopy; and
- b) averaging more than 70% of the vegetation's undisturbed height; and
- c) composed of species characteristic of the vegetation's undisturbed predominant canopy.

Reinforced Turf: Consists of turf type grass being grown in conjunction with an environmental mat as a root protective layer.

Rest Areas (syn. Rest Stop Areas): Refer to **Rest Stop Areas** definition.

Rest Stop Areas: Off road areas designed to improve road safety and mitigate driver fatigue by providing rest and recuperation opportunities at suitable locations. Amenity blocks are also readily located at Rest Stop Areas.

Restoration: The manipulation of a disturbed habitat or landscape to a desired condition. Refer also to **Ecological Restoration** definition.

Retaining System: A structure and/or wall constructed from either natural or manufactured materials, designed to resist lateral pressure (especially when built to prevent the advance of a mass of earth or water). They are also used to retain an excavation of cut and/or fill material, particularly where there is an insufficient area available to accommodate a suitable slope to a graded embankment.

Revegetation: The process of assisting the re-establishment and development of vegetation, on cleared land and areas disturbed during construction. Revegetation seeks to reinstate and restore vegetation cover to highly modified areas. The vegetation can also assist in soil stabilisation, particularly when pioneering species are used, such as grasses and legumes. Most often native plants are used in revegetation. Revegetation can be achieved by applying either a Naturalistic Planting Approach or a Structured Planting Approach, or a combination of both. Refer also to **Native Plants** definition.

Riparian: Vegetation naturally associated with a body of water such as a river, creek, stream, estuary, lake or wetland system.

Roadside Barrier: Refer to **Safety Barrier** definition.

Road Pavement: The structural component that supports traffic on the road.

Road Landscape: Includes all physical surroundings and components (whether natural or constructed) within (or with a contextual relationship) to the SCRC.

Road Furniture: Consists of any general road furniture, usually manufactured off site and constructed from man-made materials. Furniture items can include, though are not limited to the following – gantries, Closed Circuit Television (CCTV) towers, emergency telephones, guide posts, anti-glare screens, grids and drainage structures.

Road Reserve: Part of the land designated by the Department for a State Controlled Road Corridor (whether constructed or not) which extends from the property boundary on one side to property boundary on the other side. Refer also to **State Controlled Road Corridor** definition.

Road Signs: Signs designed to inform (information signs), regulate (regulatory signs) and advise road/freeway users; with considerable advance warning, of directions, distances, destinations, routes, hazards, service locations, points of interest and other required traffic information.

Road Surface: The finished level of the road; the visible and navigable plane of the road.

Roundabout: A channelised intersection at which all traffic moves clockwise around a central traffic island.

Roundabout Island: An island of circular shape that is situated centrally within a channelised intersection around which all traffic moves clockwise. Traffic volumes and number of entries into the roundabout influence the size and shape of the roundabout and central island.

Safety Barrier (syn. Longitudinal Barrier, Median Barrier and Roadside Barrier): A longitudinal, median or roadside barrier whose primary function is to prevent penetration and to thereby safely redirect an errant vehicle away from a roadside hazard or from crossing the road median.

Safe Intersection Sight Distance: The distance needed for the driver of a vehicle on the non-terminating approach to observe a vehicle entering from a side street, decelerate and stop prior to a point of conflict.

Sag vertical curve: A vertical curve in the road where the apex is at the lowest point on the curve.

Sand Filters: A sand layer implemented within water system treatment devices designed to filter fine particulates from stormwater before discharge into a downstream drainage system.

Scenic Amenity: A measure of the level of scenic value to the viewer (as perceived by the local community or immediate residents) of particular places or individual scenes within the landscape. It also measures the 'relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public' (Queensland Government, 2009). The relative value of the scene is measured from places that are recognised as being important to the viewer. The level of scenic value is also often associated with the degree of attractiveness to users, visual interest and perceptions. Refer also to **Amenity** definition.

Screen Planting: Plants selected for dense foliage habit and suitable mature size to visually screen adjoining land uses and/or structures with the intent of reducing the visual impact of these elements.

Sediment Basin: A purpose built drainage device (dam or pond) designed to trap, retain and allow settling of a wide range of sediment particle sizes (particularly coarse to medium sized); by means of gravity or filtration of a part of the suspended matter. The basin settles and reduces both the coarse sediment concentration and turbidity levels within the discharged storm water fluid. The settling process of suspended particles finalises the water treatment process.

Setback: Horizontal distance measured from the outer most edge of the outside carriageway lane to the centre of roadside object or feature. Refer also to **Setback (Vegetation specific)** definition.

Setback (Vegetation specific): The horizontal distance measured from the outer most edge of a design component or road element concerned, to the centre of a plant (for example; trunk of tree).

Sequential Views: A series of views experienced while the viewer is in motion that build up and transition progressively over a length of the road corridor.

Shoulder: The portion of the carriageway measured from the outside edge of the outer traffic lane, adjacent to and flush with the surface of the traffic lane. The shoulder excludes any berm, verge, rounding or extra width that is provided for the installation of sign posts, guide posts or safety barriers.

Sight Distance: The distance required to provide the motorist adequate time for assessing the road layout and reacting to any potential conflicts in sufficient time, through negotiation, manoeuvring or stopping, if necessary.

Simulation: The artistic re-creation of a visual image used to demonstrate the likely appearance of a proposal. These can be prepared manually or by computer software.

Slope:

Recoverable Slope: A slope on which a motorist will probably retain control of a vehicle. Slopes 1 on 4 or flatter are generally considered recoverable.

Traversable Slope: A slope that is considered traversable as the errant vehicle will continue on to the bottom. Embankment slopes between 1 on 3 and 1 on 4 may be considered traversable if they are smooth and free of fixed objects.

Non-recoverable Slope: A non-recoverable slope is one on which a vehicle is likely to overturn and can be considered as a hazard in itself. Embankment slopes steeper than 1 on 3 are considered non-recoverable.

Soft Landscape: Manufactured landscape design component or landscape treatments including but not limited to median planting, vegetated fill embankment, cuttings and drainage device treatments, roadside buffer planting, structured planting design compositions, naturalistic planting, street tree and boulevard treatments. Although manufactured through design, most soft landscapes include items that are of natural origins, or produced from the earth which are then utilized to create a landscape. Examples are soil, plants, turf, seeds, mulch and so on.

Speed Analysis: A site-specific analysis of a roadway to determine the speed environment of that roadway.

Speed Limit: The maximum speed at which a motor vehicle is legally permitted to travel on a particular section of road.

Spill Through: Transverse slope (from the point where bridge meets the supporting abutment) down to the level of the carriageway the bridge is overpassing.

Splitter Island/Isles: The island placed within a leg of the roundabout or intersection, separating entering and exiting traffic and designed to deflect entering traffic.

State Controlled Road Corridor: Land designated and administered as road by the Department for the purpose of public use either in the present or future. Areas of the land dedicated (whether surveyed or un-surveyed) may or may not be usable by vehicles or pedestrians and can also include bridges, causeways, culverts or other works in, on, over or under a road.

Stop Line: An unbroken traverse pavement marking requiring motorists to stop before entering an intersection and showing where the front of the stopped vehicle should be.

Stopping Sight Distance: The distance needed for a driver to react to a hazard and completely stop prior to the hazard.

Street Tree: A tree located within the road reserve, either on the road shoulder or within a median, typically within a structured environment.

Streetscape: All the visual parts of a street within an urban area or rural township, including the pavement surface, adjoining buildings, structures, road furniture, vegetation, open spaces, artwork and so on, that combine to form and define the street's appearance, character, identity and functionality.

Structured Planting Approach: Involve the application of container stock in mass mulched areas. Planting setout is based on a planting plan or module arranged in a structured composition. It provides a higher degree of control over planting outcomes, and is beneficial in ensuring sight visibility areas and clear zones.

Subgrade: The material below a structure or pavement, which has been compacted to support the above structure.

Subsoil: The material below the planting media or topsoil layer, the outer embankment material and exposed soil areas that have been stripped of topsoil.

Succession: The process through which communities of plant and animal species in a particular area are replaced over time by a series of different and usually more complex communities. Succession provides a framework for the change in species composition and associated substrate changes over time, and enhances restoration efficiency. Refer also to **Restoration** definition.

Swale: An open constructed drainage channel, often grass-lined or vegetated, which is designed to carry, detain and filtrate storm water runoff. Swales are generally characterised by a shallow trough like form with a broad top width to depth ratio and gentle grades, in which water flows along. They are often used as an alternative to a kerb and channel system and can also partly treat storm water runoff when vegetated. Refer also **Bioretention Swale** definition.

Table Drain: A longitudinal open channel, constructed parallel to the road, to intercept and redirect

runoff to a drain inlet or culvert. Table drains are often grass-lined or vegetated, and used as an alternative to a kerb and channel system.

'Transparent' Bridge: A bridge with minimal visual impact within the landscape context through the incorporation of recessive design features and simplistic treatments to elements of the bridge structure as well as to the immediate surrounds.

Travelled Way: The trafficable lane within the carriageway that is assigned to moving traffic and excludes shoulders and parking lanes.

Tube Stock: Plant seedlings supplied in a small tube which is generally less than 50 mm in diameter.

Tufted Grass: Grass species (preferably native) which form dense clumps at base, and are characterized by elongated strappy leaves. Tufted grasses are best used in mass planting situations.

Tunnel: A closed or roofed structure carrying a road through, or under an obstacle. This obstacle may be anything in the path of a preferred road alignment such as a significant landform, mountain, a body of water, a building or a complete development. Typically, covered roadways exceeding a length of 90m are classified as tunnels; smaller sections are generally termed as underpasses.

Turfing: Cultivated grass species grown to a particular thickness, cut into and installed as rolls at designed locations. Designed to achieve a denser, thicker and more immediate effect on installation, as compared to grassing. Refer also to **Grassing** definition.

Understorey: Includes all plant species occurring between the ground and the canopy layer. It includes low grasses and ground covers through to large shrubs up to 4 meters in height.

Upperstorey: Includes plant species occurring in the top strata of a vegetation alliance. This strata contains predominantly self supporting trees which are plants with a main stem and woody branches.

Vegetation Height: Expected mature heights of species, achieved under average growing conditions, measured from the ground surface to the top of the canopy.

Vegetation Management Plan: A structured plan or program to protect and manage existing vegetation within a given area.

Vegetation Width: Expected mature widths or diameters of species, achieved under average growing conditions.

Veloway: A dedicated bikeway for cyclists generally designed as a very high standard facility with a wider width and straighter direct alignment (where possible) than a typical cycle path, allowing for high speed travel by a larger number of cyclists.

Verge: The area located between the outer edge of the road shoulder and the batter hinge point, designed primarily to facilitate the recovery of errant vehicles within the clear zone and secondly, to accommodate drainage systems. They can also accommodate safety barriers.

View: The landscape as seen from a given point. Views change when looked at from different angles and when changing directions.

View-shed: Is a contained view (either by land or object) of an area of land, water, or other landscape and or cultural heritage item, visible from a fixed vantage point. View-sheds are most often areas of

particular scenic or historic value that are readily visible from public areas such as from roadways, transport systems or open space. Viewed areas generally have inherent visual or aesthetic qualities as determined by those who view it.

Vista: A confined view usually with a terminating point in distance. The terminating point is the main point which viewers focus on and which captures attention.

Visual Amenity: A measure of the degree of visual quality, appropriateness and personal satisfaction of an area or specific site as experienced by the viewer (inclusive of local community, tourists and visitors). The degree of visual appreciation of a particular road proposal is associated with its contextual relationship to the surrounding physical environment. Refer also to **Amenity** definition.

Visual Catchment: Refers to the extent of areas in which a roadway can be viewed from nearby areas or wider surrounding areas by the travelling public. The degree of visual exposure and potential for visibility within the visual catchment extents is influenced primarily by the combination of surrounding landform, built forms and vegetation.

Visual Cues: A signal or reminder that stimulates visual interest, anticipation and provides information to viewers about what to expect and how to respond. The visual prompt may be of a natural or constructed physical form.

Visual Experience: The visual impression as perceived by the viewer of the roadway and adjoining landscape created by a sequencing of visual elements. It is the interplay of particular visual elements which generates how a landscape is 'read' and remembered by the traveller, as well as contributes to the level of interest and enjoyment experienced.

Visual Quality: The visual condition of the road landscape and how it is perceived, preferred, and valued by the public.

Visual Sensitivity: A key component of the visual landscape and refers to the landscapes relative sensitivity to change. It determines how sensitive the visual character of the setting is to the proposed changes relative to the road proposal. Visual sensitivity is based on the visual prominence or importance of features and conditions within the visual setting. This can be determined by the visual presence of valued features and the combination of those features in a distinct pattern. A landscape's uniqueness within the broader landscape, its continuity and ability to change without obvious alteration to character, all determine the level of landscape sensitivity.

Water Sensitive Urban Design: A planning and design approach to minimise negative impacts on natural water cycles, maintain water quality, minimise demand on reticulated water supply and integrate water into the landscape to enhance visual, social, cultural and ecological values.

Weed: A plant which poses a threat to other vegetation and the environment, usually by way of its invasive habitat, to the detriment of natural or constructed habitats.

Wetlands (Constructed): Shallow, vegetated water bodies which use sedimentation, filtration and biological uptake processes to remove pollutants from storm water.

Wildlife Corridor: A strip or linear section of land in which plants and animals are afforded both habitat and linkages to other areas.

References

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