

# Glossary of Terms

## G1. General

The following Terms and Definitions apply to this Geometric Design Manual. The Glossary has been compiled from:

<b>Australian Standards:</b>	AS 1348.1, AS 1348.2, AS 1348.4
<b>Transit New Zealand:</b>	C1 Specification - Appendix 1: Glossary of Terms.
<b>American Association of State Highway Traffic and Transportation Officials (AASHTO):</b>	A Policy on Geometric Design of Highways and Streets

## G2. Terms and Definitions

Term	Definition
<b>85<sup>th</sup> percentile</b>	Value of variable characteristic of individuals in a population, possessed by at or below 85 percent of that population.
<b>AADT</b>	<i>See annual average daily traffic.</i>
<b>absorption capacity</b>	The maximum rate at which a traffic stream can absorb additional vehicles.
<b>abutment</b>	An end support of a bridge
<b>acceleration lane</b>	A speed-change lane used for increasing speed.
<b>access</b>	The driveway by which vehicles and/or pedestrians enter and/or leave property adjacent to a road.
<b>access control</b> control of access	<ol style="list-style-type: none"> <li>1. The prevention of vehicles and people crossing property lines by means of barriers or regulations.</li> <li>2. Arranging matters so that vehicles and people have access at predetermined locations.</li> </ol>
<b>access way</b>	A private road or local street serving very low traffic volumes, whose design need not be dominated by traffic considerations. <i>See also driveway.</i>
<b>alignment</b>	The geometric form of the centre line, or other reference line, of the carriageway with respect to the horizontal or vertical axes. <i>See also property line.</i>
<b>alignment coordination</b>	A road design technique which considers the relationship of the horizontal and vertical alignments and its influence on safety and the three-dimensional aspect of the finished carriageway.
<b>annual average daily traffic</b> (Abbreviation <b>AADT</b> )	The total yearly traffic volume in both directions divided by the number of days in the year, expressed as vehicles per day.
<b>approach nose</b>	The end of an island, median or separator, or area between diverging carriageways, which faces approaching traffic.
<b>approach speed</b>	The representative vehicle speed (usually taken as the 85 <sup>th</sup> percentile).
<b>arterial road</b>	A road that predominantly carries through traffic from one region to another, forming principal avenues of communication for traffic movements. <i>See also road.</i>

# STATE HIGHWAY GEOMETRIC DESIGN MANUAL

## GLOSSARY OF TERMS



November 2005

Term	Definition
<b>at-grade crossing</b>	Crossing at the same level, such as a railway crossing which is at the same level as a road, or a normal road intersection.
<b>auxiliary lane</b>	The portion of carriageway adjoining the through traffic lanes, used for speed change, weaving, climbing, passing, or for other purposes supplementary to through traffic movement.
<b>average speed</b> running speed	The speed over a specified section of road, being the distance divided by the travel time. The average for all traffic, or a component thereof, is the summation of distances divided by the summation of travel time.
<b>average design speed</b>	The weighted average of the design speeds within a road section, in which each subsection within the section is considered to have an individual design speed.
<b>average daily traffic</b> (Abbreviation <b>ADT</b> )	The total traffic volume during a stated period, divided by the number of days in that period.
<b>average weekday traffic</b> (Abbreviation <b>AWT</b> )	The total traffic volume for all of the weekdays less public holidays in a stated period, divided by the number of days in that period.
<b>axle group</b>	A set of closely spaced axles acting as a unit, ie. axles spaced at less than 2.4 m.
<b>axle load</b>	The load applied to a pavement by a single axle.
<b>backfill (n)</b>	Fill placed in an excavation.
<b>bank</b>	<ol style="list-style-type: none"><li>1. An embankment or fill.</li><li>2. A fill in the line of a road.</li></ol>
<b>barrier</b>	An obstruction placed to prevent access to a particular area.
<b>barrier kerb</b> non-mountable kerb	A kerb high enough to prevent or discourage driving off the carriageway. <i>See also <b>semi-barrier kerb</b>.</i>
<b>base</b>	<i>See <b>basecourse</b>.</i>
<b>basecourse</b> base road base	One or more layers of material usually constituting the uppermost structural element of a pavement and on which the surfacing may be placed. It may be composed of fine crushed rock, natural gravel, broken stone, stabilised material, asphalt or portland cement concrete.
<b>basic lanes</b>	Those lanes forming the minimum number of lanes designated and maintained over a significant length of route, irrespective of changes in travel volume and the requirements of lane balance.
<b>basic capacity</b>	Capacity of a road or area to accommodate moving and/or stationary vehicles regardless of the effect of delaying drivers, restricting their freedom to manoeuvre, or the need to maintain specified environmental standards. <i>See also <b>capacity</b>.</i>
<b>batter</b>	<ol style="list-style-type: none"><li>1. The uniform side slope of walls, banks, cuttings etc.</li><li>2. The amount of such slope or rake, usually expressed as a ratio of horizontal to vertical, distinct from grade.</li><li>3. To form a uniform side slope to a wall, bank, or cutting.</li></ol>
<b>bench</b>	A ledge cut or formed in the batter of a cutting or natural slope to provide greater security against slips.

Term	Definition
<b>benefit cost ratio</b>	<p>Ratio of the present value of economic benefits derived by the community from transport system improvements over the present value costs of those improvements. Costs and benefits are usually measured relative to a <i>'base case'</i> which often implies doing nothing, ie. the <i>'do nothing case'</i>.</p> <p>It is often not practical to do nothing and a certain level of expenditure is needed to maintain a minimum level of service. In New Zealand this expenditure is known as the <i>'do minimum case'</i> and Transfund requires it to be used as the base case rather than the do nothing case.</p>
<b>berm</b>	<ol style="list-style-type: none"> <li>1. A narrow shelf, path, or ledge formed typically at the top or bottom of an earth slope.</li> <li>2. The shoulder of a road.</li> <li>3. A grassed area between the kerb and footpath or between the footpath and property boundary.</li> <li>4. A mound on the outer edge of a road above a fill batter to protect the batter from erosion.</li> </ol>
<b>boundary line</b>	The boundary between a road reserve and the adjacent land.
<b>braking distance</b>	The distance travelled by a vehicle in the period between the initial application of the brakes and coming to rest plus reaction time.
<b>bridge</b>	A structure designed to carry a road or path over an obstacle by spanning it.
<b>bulking factor</b>	The ratio of the final volume and the initial volume of a material after bulking has occurred.
<b>bulking</b>	The increase in volume of a material resulting from disturbance or from changes in its condition, in particular from an increase in moisture content.
<b>bus lane</b>	A traffic lane reserved for, or primarily used by, buses either when transporting, loading or discharging passengers, or when standing.
<b>by-pass</b>	An alternative route which enables through traffic to avoid urban or congested areas, or other obstructions to movement. Usually to divert heavy vehicles away from residential areas.
<b>by-pass traffic</b>	Traffic that uses a by-pass because drivers do not wish to stop on that road or in that area. <i>See also traffic.</i>
<b>camber</b>	<ol style="list-style-type: none"> <li>1. The transverse convexity given to the surface of a carriageway or footway.</li> <li>2. The upward vertical curvature of a beam.</li> </ol>
<b>capacity</b> basic capacity environmental capacity parking capacity road capacity	The maximum rate of flow at which persons or vehicles can reasonably be expected to traverse a point or uniform segment of a lane or road during a given period of time under the prevailing road, traffic and control conditions.
<b>car park</b>	Open area or structure designed for the storage of vehicles off the road network.
<b>carriageway</b>	That portion of a road or bridge devoted particularly to the use of vehicles, inclusive of shoulders and auxiliary lanes. Divided roads are considered to have two carriageways.
<b>catch drain</b>	A surface channel constructed along the high side of a road or embankment, outside the batter to intercept surface water.

Term	Definition
<b>central business district</b> (Abbreviation CBD)	Dominant centre of business and commercial activity within a given area. CBD's are characterised by high density office and retail development, large numbers of pedestrians and vehicles, and a heavy demand for parking.
<b>centreline</b>	<ol style="list-style-type: none"> <li>1. The line which defines the axis or alignment of the centre of a road or other work.</li> <li>2. A marked line on the centre of the carriageway separating opposing traffic streams.</li> </ol>
<b>chainage station</b>	The distance of a point along a control line, measured from a datum point.
<b>channel</b>	The drain which accepts water directly from the pavement. <i>See also <b>kerb and channel</b> and <b>surface water channel</b>.</i>
<b>channelisation</b>	A system of controlling traffic by the introduction of an island or islands, or markings on a carriageway to direct traffic into predetermined paths, usually at an intersection or junction.
<b>channelised intersection</b>	An intersection provided with medians and islands for defining the trafficable area and to control specific movements.
<b>channelising island</b>	A traffic island used at an intersection to confine specific movements of traffic to definite channels.
<b>circulating carriageway</b>	The carriageway surrounding the central island of a roundabout.
<b>circulation</b>	Pattern in which traffic moves in a given area.
<b>circumferential road</b>	A roughly circumferential road about the centre of an urban area permitting traffic to avoid the centre of such areas. <i>See also <b>road</b>.</i>
<b>clear zone</b>	The area adjacent to the road that is clear of fixed objects and provides a recovery zone for vehicles that have left the carriageway.
<b>clearway</b>	A portion of carriageway generally defined by signs, along which vehicles may not voluntarily stop or be left standing at prescribed times of the day.
<b>climbing lane</b>	An auxiliary lane, usually on a long upgrade, primarily for the use of slow moving vehicles. <i>See also <b>passing lane</b>.</i>
<b>coefficient of side friction</b> sideways force coefficient	The ratio of the resistance to sideways motion to the normal component of the force between the tyres of the vehicle and the pavement.
<b>collector road</b> distributor road	A non-arterial road which collects and distributes traffic in an area, as well as serving abutting property. <i>See also <b>road</b>.</i>
<b>collector-distributor road</b>	An auxiliary road, separated laterally from but generally parallel to a through road and joining it at a limited number of points. The road serves to collect from and distribute traffic to several local roads. <i>See also <b>service road</b>.</i>
<b>commercial vehicle</b> (Abbreviation CV)	A vehicle having at least one axle with dual wheels and/or having more than two axles.
<b>compound curve</b>	A curve consisting of two or more arcs of different radii curving in the same direction and having a common tangent point or being joined by a transition curve.
<b>conflict point</b>	Point of potential collision between vehicles involved in a manoeuvre.

Term	Definition
<b>continuity line</b>	A longitudinal broken line of distinctive pattern which may be used to indicate the edge of that portion of the carriageway assigned to through traffic and which is intended to be crossed by traffic turning at an intersection, or entering or leaving an auxiliary lane at its start or finish.
<b>contraflow</b>	Traffic flow in a direction opposite to the normal flow, eg. a contraflow bus lane might be one that runs the ' <i>wrong way</i> ' on a one-way street.
controlled access road	A road for through traffic to which access from abutting properties or joining roads is controlled. See also <b>road</b> and <b>limited access road</b> .
<b>cordon survey</b>	Survey of traffic crossing a cordon line. Used to obtain trip data on vehicle and/or persons travelling into, out of or through a study area.
<b>corridor</b>	Major area of travel between two points. (A corridor may include more than one major route and more than one form of transport).
<b>critical acceptance gap</b>	The minimum gap in a traffic stream acceptable to drivers wishing to join or cross that stream, or to drivers in the opposing stream wishing to overtake. See also <b>gap acceptance</b> .
<b>critical density</b>	The traffic density on a given road or carriageway when the traffic volume is at capacity.
<b>critical movements</b>	The traffic movements which determine the capacity and timing requirements of a signalised intersection.
<b>crossfall</b>	The slope, at right-angles to the alignment, of the surface of any part of the carriageway.
<b>crossing</b>	A formal area set aside for other modes of transport to cross the road. Usually called cycle crossing, pedestrian crossing, railway crossing, etc., as appropriate.
<b>crossing sight distance</b>	Sight distance required to enable traffic to start from rest and safely cross one or more traffic streams.
<b>cross-section</b>	A vertical section, generally at right-angles to the centreline showing the ground. On drawings it commonly shows the road to be constructed, or as constructed.
<b>crown</b>	<ol style="list-style-type: none"> <li>1. The highest part of an arch.</li> <li>2. The highest point on the cross-section of a carriageway with two-way crossfall.</li> </ol>
<b>cul-de-sac</b>	A street or road open for vehicular traffic at one end only.
<b>cut</b>	The depth from natural surface of the ground down to the subgrade level. Also means to excavate.
<b>cut-off drain</b>	An interceptor drain constructed along the top of a cutting or batter to prevent surface water running down the face.
<b>cutout drain</b>	An open drain or ditch formed to drain water from the surface water channel to a side drain or natural water course.
<b>cut-out</b>	An opening which allows water to escape from the carriageway or channel to a drain or water course.
<b>cutting</b>	That portion of the road where the finished road surface is below the natural surface.

# STATE HIGHWAY GEOMETRIC DESIGN MANUAL

## GLOSSARY OF TERMS



November 2005

Term	Definition
<b>cycle path</b>	Separate carriageway devoted to the use of pedal cycles.
<b>cycle track</b>	Separate carriageway or portion of road devoted to the use of pedal cycles.
<b>cycleway</b>	Portion of road or footpath devoted to the use of pedal cycles.
<b>deceleration lane</b>	A speed-change lane provided to allow vehicles to decrease speed.
<b>deflection</b>	The vertical elastic (recoverable) deformation of a pavement surface between the tyres of a standard axle.
<b>degree of saturation</b>	The ratio, usually expressed as a percentage, of the number of vehicles entering an intersection in a specified period, to the number which could enter if all approaches were fully saturated during that period. May also be applied to an approach to an intersection.
<b>delay</b>	The time lost while traffic is impeded by some element over which the driver has no control.
<b>demand</b>	The traffic volume desiring to travel along a given route.
<b>design life</b>	The period during which the performance of a pavement, e.g. riding quality, is expected to remain acceptable.
<b>design period</b>	A period considered appropriate to the function of the road. It is used to determine the total traffic for which the pavement is designed.
<b>design process</b>	Process for arriving at a final design for a transport project and normally divided into three distinct phases: <ol style="list-style-type: none"><li>1. <i>Functional Design:</i> Preparation of the conceptual design with enough detail to ensure that the design will function as intended.</li><li>2. <i>Preliminary Design:</i> Finalisation of design in terms of calculations, specifications and estimates such that all aspects of the design are determined. See also <b>preliminary engineering</b>.</li><li>3. <i>Documentation:</i> Preparation of plans and documents describing the design sufficiently for it to be constructed</li></ol>
<b>design queue length</b>	The length of a queue normally provide for when designing an intersection, usually calculated to provide adequate storage at a given probability level, normally 95 percent.
<b>design speed</b>	A speed fixed for the design of minimum geometric features of a road.
<b>design traffic</b>	The cumulative traffic, expressed in terms of Equivalent Standard Axles (ESAs), predicted to use a road over the structural design life of the pavement.
<b>design vehicle</b>	A hypothetical road vehicle whose mass, dimensions and operating characteristics are used to establish design requirements.
<b>design volume</b>	The number of vehicles expected to use the road and adopted for the purposes of geometric design, normally expressed as the number of vehicles per hour or per day.
<b>design year</b>	The predicted year in which the design traffic would be reached.
<b>desire line</b>	A straight line joining points or zones of trip origin and destination indicating the desired line of travel.

Term	Definition
<b>desired speed</b>	The speed over a section of road adopted by a driver or drivers when not as influenced by the road geometry or other environmental factors. <i>See also <b>speed environment</b>.</i>
<b>destination</b>	Point or area in which a trip ends.
<b>detour</b>	An alternative route available to traffic during temporary closure of a road.
<b>deviation</b>	An alternation to the alignment of a portion of a road, usually involving significant departure from the existing route.
<b>directional interchange</b>	An interchange, generally between two freeways or expressways, providing direct connections for some or all right-turning movements.
<b>directional split</b>	The ratio of the one-way traffic volume on a road in the major direction to that in the minor direction during a specified period.
<b>dish channel</b>	A channel with a 'u'-shaped cross-section. Normally found in urban areas.
distributor road	<i>See <b>collector road</b>.</i>
<b>diverging</b>	Division of a single stream of traffic into separate streams.
<b>diverted traffic</b>	Component of traffic which has changed its route but not its origin, destination or mode of travel. <i>See also <b>traffic</b>.</i>
<b>divided road</b> dual carriageway	A road having a separate carriageway for each direction of travel.
<b>downstream</b>	The direction along a carriageway towards which the vehicle flow under consideration is moving.
<b>drain</b>	A channel formed at the surface or a culvert, pipe or other similar construction for drainage.
<b>drainage</b>	Natural or artificial means of intercepting and removing surface or sub-surface water (usually by gravity).
<b>driveway</b>	A defined area used by vehicles travelling between a carriageway and a property adjacent or near to the road. <i>See also <b>access way</b>.</i>
dual carriageway	<i>See <b>divided road</b>.</i>
<b>economic analysis</b> benefit-cost analysis (Abbreviation <b>BCA</b> ) cost-benefit analysis (Abbreviation <b>CBA</b> )	Means of analysing investment or policy decisions by comparing the benefits and costs of such decisions as far as practicable in monetary terms. Future costs and benefits are discounted to represent present day values in a given or ' <i>present</i> ' year
<b>edge break</b>	A road failure where the edge of the seal breaks away.
<b>edge line</b> pavement edge line	A line used to differentiate the outer edge of the traffic lanes from the shoulder.
<b>embankment</b>	A construction (usually of earth or stone) to raise the ground (or formation) level above the natural surface.
entry ramp	<i>See <b>on ramp</b>.</i>

# STATE HIGHWAY GEOMETRIC DESIGN MANUAL

## GLOSSARY OF TERMS

November 2005

Term	Definition
<b>environmental capacity</b>	Capacity of a road or area to accommodate moving and/or stationary vehicles with regard to the need to maintain specified environmental standards.
<b>equivalent car unit</b> (Abbreviation <b>ECU</b> )	Measure involving the conversion of different types of vehicles into their equivalent passenger cars in terms of operating characteristics.
exit ramp	<i>See</i> <b>off ramp</b> .
<b>expressway</b>	A road mainly for through traffic, usually dual carriageway with full or partial control of access. Intersections are generally grade separated. <i>See also</i> <b>freeway</b> and <b>motorway</b> .
<b>feather edge</b>	The surface of the pavement layers between the shoulder hinge point and the subgrade surface.
<b>fill</b>	<ol style="list-style-type: none"><li>1. The depth from the subgrade level to the natural surface.</li><li>2. That portion of road where the formation is above the natural surface.</li><li>3. The material placed in an embankment.</li></ol> <p><i>See also</i> <b>embankment</b>.</p>
<b>filtering</b>	<ol style="list-style-type: none"><li>1. The movement of vehicles in one stream of traffic across or into another stream of traffic by gap acceptance. <i>See also</i> <b>merging</b> and <b>weaving</b>.</li><li>2. Permitted movement at a signalised intersection, whether specifically signalled or not, which conflicts with another traffic stream permitted to move at the same time.</li><li>3. Movement of through traffic along local roads, usually to avoid congested areas on the main arterial road system.</li></ol>
<b>first coat seal</b>	An initial seal on a prepared basecourse which has not been primed.
<b>flared intersection</b>	An intersection where the carriageway is widened to create passing, storage or speed-change lanes.
<b>flat channel</b>	A channel with a flat cross-section. Normally found in urban areas.
<b>flexible pavement</b>	A pavement which obtains its load spreading properties mainly by intergranular pressure, mechanical interlock and cohesion between the particles of the pavement material. In the case of an asphalt pavement, this further depends on the adhesion between the bitumen binder and the aggregate, and the cohesion of that binder. Generally, any pavement in which the high strength Portland cement concrete is not used as a construction layer.
<b>floating car</b>	Vehicle which is driven so that it travels at the average speed of traffic on a length of road. This is done by ensuring that the vehicle overtakes as many other vehicles as those which overtake it.
<b>following distance</b>	The distance from the front of a vehicle to the rear of the one ahead in the same traffic lane.
<b>footpath</b> pathway	A public way reserved for the movement of pedestrians.
<b>footway</b>	Pedestrian facility on a bridge.
<b>formation level</b>	The general level of the surface of the ground proposed or obtained on completion of the earthworks.
<b>formation</b>	The surface of the finished earthworks, excluding cut or fill batters.



Term	Definition
<b>foundation</b>	The soil or rock upon which a structure rests.
<b>free speed</b>	The speed adopted by a driver when not influenced by the presence of other traffic.
<b>freeway</b>	A divided highway for through traffic with no access for traffic between interchanges and with grade separation at all intersections. <i>See also <b>expressway</b> and <b>motorway</b>.</i>
<b>french drain</b>	A drain formed of a trench typically 1 m deep by 0.6 m wide containing a porous or open-jointed pipe laid on, and backfilled with, a porous material. The drain is typically used for the collection of surface or ground water. Also known as a maori drain.
<b>functional classification</b>	Classification of roads into groups according to their function, ranging from, for example, principal routes for communication between major regions and capital cities, to those roads which provide almost exclusively for local residential traffic. Also known as road amenity classification.
<b>gap acceptance</b>	The acceptance of a gap in a traffic stream by a driver or pedestrian wishing to enter or cross that traffic stream or a driver in the opposing traffic stream wishing to overtake. <i>See also <b>critical acceptance gap</b>.</i>
<b>gap</b>	The time interval between the departure at a point of one vehicle and the arrival at the same point of the next vehicle.
<b>generated traffic</b>	<ol style="list-style-type: none"> <li>1. Traffic created by a new or improved facility as a distinct from traffic which is diverted to a facility and normal traffic growth.</li> <li>2. Traffic created by changes in land use.</li> </ol> <p><i>See also <b>traffic</b>.</i></p>
<b>grade</b>	<ol style="list-style-type: none"> <li>1. A length of carriageway sloping longitudinally.</li> <li>2. The rate of longitudinal rise or fall of a carriageway with respect to the horizontal, expressed as a ratio or as a percentage. Also termed gradient.</li> <li>3. To design the longitudinal profile of a road.</li> <li>4. To secure a predetermined level or inclination to a road or other surface.</li> <li>5. To shape or smooth an earth, gravel, or other surface by means of a grader or similar implement.</li> <li>6. To mix aggregates according to a particle size distribution.</li> </ol>
<b>grade line</b> longitudinal section	A vertical section, usually with an exaggerated vertical scale, showing the existing surface levels along a road centreline, or other specified line. It commonly also shows the levels to which the road is to be constructed or reconstructed. <i>See also <b>profile</b> and <b>longitudinal profile</b>.</i>
<b>grade separation</b>	The separation of road, rail or other traffic so that crossing movements which would otherwise conflict are effected at different elevations. <i>See also <b>underpass</b> and <b>overpass</b>.</i>
<b>grass verge</b>	Grass area on side of road.
<b>grate</b>	A grid of metal or other suitable material to prevent debris from entering a drain or pit or mud tank and to provide protection for pedestrians and vehicles.
<b>ground level</b>	The reduced level of any particular point on the surface of the ground.
<b>guardrail</b>	<i>See <b>road safety barrier</b>.</i>

# STATE HIGHWAY GEOMETRIC DESIGN MANUAL

## GLOSSARY OF TERMS

November 2005

Term	Definition
<b>half-diamond interchange</b>	An interchange having single ramps in only two quadrants on the same side of the minor road. <i>See also <b>split diamond interchange</b>.</i>
<b>haul</b>	The distance through which material is transported between points of loading and unloading.
<b>HCV</b>	Heavy commercial vehicle.
<b>head wall</b>	A retaining wall at the end of a culvert.
<b>headway</b>	The time interval between the passage of consecutive vehicles passing a given point, measured from front to front of the vehicles.
<b>heavy vehicle</b>	A truck having a tare weight in excess of 3 tonnes.
<b>high shoulder</b>	A road fault in which the shoulder is too high relative to the carriageway.
<b>highway</b>	A principal road in a road system.
holding line	<i>See <b>limit line</b>.</i>
<b>horizontal curve</b>	A curve in the plane or horizontal alignment of a carriageway.
<b>impedance</b>	Measure of the difficulty of travelling through a network. Can be travel time, distance, cost or some combination of these.
<b>induced traffic</b>	Additional traffic resulting from some improvement in a road or in traffic arrangements. <i>See also <b>traffic</b>.</i>
<b>interceptor drain</b>	A type of side drain that prevents water from flowing towards the road and is normally sited away from the road.
<b>interchange</b>	A grade separation of two or more roads with one or more interconnecting carriageways.
<b>interchange ramp</b>	A carriageway within an interchange providing for travel between two arms (legs) of the intersecting roads.
<b>intersection</b>	A place at which two or more roads cross at grade or with grade separation.
<b>intersection angle</b>	<ol style="list-style-type: none"> <li>1. The angle between two successive straights on the centreline of a carriageway.</li> <li>2. The angle between the centrelines of two intersecting carriageways.</li> </ol>
<b>intersection at grade</b>	An intersection where carriageways cross at a common level.
<b>intersection leg</b> intersection arm	Any one of the carriageways radiating from and forming part of an intersection.
<b>intersection point</b>	The point where the two tangents to a curve or two grades meet.
<b>intersectional friction</b>	The retarding effect on traffic movement caused by potential and actual traffic conflicts at an intersection or the merger of two moving streams of traffic.
<b>invert</b>	The lowest portion of the internal surface of a drain or culvert.
island	<i>See <b>traffic island</b>.</i>

Term	Definition
<b>journey</b>	Movement involving one or more trips, eg. a ' <i>journey to work</i> ', which could involve a direct trip to work or an intermediate stop for some other but secondary, purpose; an 'origin to origin' journey, which could involve several trips, each for a particular purpose. Home-to-home journeys have also been termed tours. <i>See also trip.</i>
<b>journey time</b>	<i>See travel time.</i>
<b>junction</b>	A place where two or more roads meet.
<b>kerb</b>	A raised border of rigid material formed at the edge of a carriageway or pavement.
<b>kerb and channel</b>	Combined kerb and drainage channel.
<b>land use</b>	Use to which land is put, eg. Residential, commercial, open space. In transport analysis the term encompasses measures of social and economic activity that take place on the land, eg. size of population, number of employees.
<b>lane</b>	<ol style="list-style-type: none"> <li>1. A narrow road.</li> <li>2. <i>See traffic lane.</i></li> </ol>
<b>lane line</b>	A line (usually painted) other than the centre line which divides adjacent traffic lanes.
<b>lane numbering</b>	On a multilane road-way, the traffic lanes available for through traffic travelling in the same direction are numbered from left to right, when facing in the direction of traffic flow.
<b>lane separator</b>	A separator provided between lanes carrying traffic in the same direction, to discourage or prevent lane changing, or to separate a portion of a speed change lane from through lanes.
<b>lay by</b>	An area usually on rural roads or highways where vehicles may draw out of the through carriageway and park.
<b>left-right staggered junction</b>	A junction in which a driver turns to his left on entering an intersecting carriageway and then to his right in order to continue his route. The preferred configuration is right-left staggered junction intersecting.
<b>left turn lane</b>	<i>See turning lane.</i>
<b>level crossing</b>	Railway crossing at the same level as a road.
<b>level of service</b>	An index of the operational performance of traffic on a given traffic lane, carriageway or road when accommodating various traffic volumes under different combinations of operating conditions.
<b>limit line</b> holding line	A transverse line, or lines, marked on a pavement to indicate the position at which a vehicle is to stop, normally used at intersections in conjunction with STOP and GIVE WAY signs.
<b>limited access road</b> Abbreviation <b>LAR</b>	A road declared under the Transit New Zealand Act, or created under the Public Works Act, as a means of controlling access between roads and properties. <i>See also controlled access road.</i>
<b>line of sight</b>	The direct line or uninterrupted view between a driver and an object of specified height above the carriageway in his lane of travel.

# STATE HIGHWAY GEOMETRIC DESIGN MANUAL

## GLOSSARY OF TERMS



November 2005

Term	Definition
<b>link</b>	<ol style="list-style-type: none"> <li>1. <i>Road network</i>: The portion of road between two intersections. Its basic characteristics are length, vehicle speeds, travel times and number of lanes.</li> <li>2. <i>Public transport network</i>: The portion of a route between stations or bus stops or tram stops or ferry wharves. Its basic characteristics are length, the transport modes which use it, vehicle speeds, travel times and frequencies.</li> <li>3. <i>Traffic assignment</i>: A connection between two nodes.</li> </ol>
<b>local area traffic management</b>	Analysis of traffic characteristics, and the implementation of vehicle control measures within local area.
<b>local road</b> local street	A road or street used primarily for access to a butting properties. <i>See also road.</i>
local street	<i>See local road</i>
<b>longitudinal profile</b>	The shape of a pavement surface measured as vertical distances from some datum parallel to the traffic. <i>See also transverse profile.</i>
longitudinal section (long section)	<i>See grade line.</i>
<b>major / minor road system</b>	System of control of a road network in which the priority at intersections or junctions is determined by the relative importance of the approach roads.
<b>manoeuvre</b>	Any action on the part of a driver with regard to merging, weaving or overtaking.
<b>markings</b>	Any lines painted on the road to control traffic movement or parking.
<b>mass diagram</b>	A curve plotted on a distance base, the ordinate at any point of which represents the algebraic sum up to that point of the volume of cut and fill from the start of the earthworks or from any arbitrary point.
<b>mass haul diagram</b>	A graph on a base of distance showing cross-sectional area of cutting and fill on which the destination of the material from each cutting is indicated. It is often reduced to a diagram showing rectangles having areas proportional to cut or fill volumes.
<b>median</b> dividing strip	A portion of road, not normally intended for use by traffic, which separates carriageways for traffic travelling in opposite directions.
<b>median barrier</b>	A device used on multi-lane roads to keep opposing traffic in prescribed carriageways. <i>See also guardrail.</i>
<b>median island</b>	A short length of median serving of localised purpose in an otherwise undivided road.
<b>median lane</b>	A speed change lane within the median to accommodate right turning vehicles.
<b>median opening</b>	A speed change lane within the median to accommodate right turning vehicles.
<b>merging</b>	The converging of separate streams of traffic into a single stream. <i>See also filtering and weaving.</i>
<b>metered access</b>	System allowing vehicles to enter a road only when traffic condition permits. <i>See also access control.</i>
<b>minimum turning path</b>	The path of a designated point on a vehicle making its sharpest turn.

Term	Definition
<b>minimum turning radius</b>	The path of the minimum turning path of the outside of the outer front tyre of a vehicle. <i>See also <b>turning circle</b>.</i>
<b>mode</b>	Method of transport, eg. motor vehicle travel (as driver or passenger), bus, light rail and walking.
<b>motorway</b>	A defined class of road for which certain activities or uses are restricted or prohibited by legislative provision. <i>See also <b>expressway</b> and <b>freeway</b>.</i>
<b>mountable kerb</b>	A kerb designed to define the edge of a carriageway but which may be mounted or driven across, if the need arises, with little to risk of damage to a vehicle. <i>See also <b>semi-mountable kerb</b>.</i>
<b>multiple lanes</b>	A carriageway with more than one traffic lane.
<b>nearside</b>	The side of a vehicle closest to the kerb when the vehicle is travelling in the normal direction of travel.  The nearside of a road corresponds to the left-hand of the carriageway when looking in the direction of travel.
non-mountable kerb	<i>See <b>barrier kerb</b>.</i>
<b>N<sup>th</sup> highest hour</b>	The hourly traffic volume that is exceeded during (N-1) hours in the course of a year.
<b>no overtaking line</b>	A continuous yellow painted line adjacent to the road centreline marking, which indicated that overtaking is not permitted.
<b>number plate survey</b>	Survey involving the recording of vehicle licence plate numbers at different locations for the purpose of developing origin-destination and/or travel time data.
<b>off-peak hour</b>	A representative hourly flow indicative of the average flow outside the peak period.
<b>off ramp</b> exit ramp	A carriageway to allow vehicles to leave a motorway or expressway.
<b>offset</b>	Horizontal distance measured at right-angles to a datum or reference line
<b>offside</b>	The side of a vehicle furthest away from the kerb when the vehicle is travelling in the normal direction of travel. It corresponds to the drivers side of the vehicle.  The offside of a road corresponds to the right-hand of the carriageway when looking in the direction of travel.
<b>off tracking</b>	The radial distance between the turning paths of the centre of the front axle and the centre of the rear axle.
<b>one-way road</b> one-way street	A road or street on which all vehicular traffic travels in the same direction.
<b>on ramp</b> entry ramp	A carriageway to allow vehicles to join an expressway or motorway.
<b>operating speed</b>	The highest overall speed, exclusive of stops, at which a driver can safely travel on a given section of road under the prevailing traffic conditions.

Term	Definition
<b>opposing traffic</b>	The traffic stream travelling in the opposite direction to the vehicle or vehicles under consideration.
<b>optimum speed</b>	The average speed at which traffic must move to attain the maximum traffic volume on a carriageway.
<b>overall travel speed</b>	The total distance traversed by a vehicle divided by the total time required including all traffic delays.
<b>overdimension route</b>	Route available for use by over dimension vehicles. <i>See also truck route.</i>
<b>overdimension vehicle</b>	Vehicle which, due to its weight or dimensions, is precluded by legislation from using public roads without following a prescribed route or obtaining a permit from the relevant traffic authority.
<b>overpass</b>	A grade separation where the major road passes over an intersecting minor road or railway. <i>See also grade separation and underpass.</i>
<b>overtaking</b>	The manoeuvre whereby a vehicle moves from a position behind to one in front of another vehicle travelling in the same direction.
<b>overtaking distance</b>	The distance required for one vehicle to overtake another vehicle.
overtaking lane	<i>See passing lane.</i>
<b>parking capacity</b>	Total number of marked parking spaces provided within a parking facility. Also known as 'static capacity'. <i>See also capacity.</i>
<b>parking space</b>	An area intended for occupancy by a single parked vehicle.
<b>passenger car</b>	For general traffic engineering use this term includes cars, taxis and station wagons, but does not include motor cycles and light commercial vehicles such as utilities and panel vans, unless otherwise specified.
<b>passenger car units</b> (Abbreviation PCU)	A measure of traffic flow in terms of an equivalent number of passenger cars. <i>See also equivalent car units.</i>
<b>passing bay</b>	A short widening of the carriageway provided to allow very slow vehicles to pull aside and be overtaken, usually in very steep terrain.
<b>passing lane (NZ)</b>	An auxiliary lane, including diverge and merge tapers, that is provided for slower vehicles to allow them to be overtaken.
<b>passing place</b>	A widened length of a narrow carriageway at which vehicles can pass each other.
pathway	<i>See footpath.</i>
<b>pavement</b>	That portion of the road that is placed above the design subgrade level for the support of, and to form a running surface for, vehicular traffic.
<b>pavement markings</b>	Surface markings, raised pavement markers, traffic domes and the like placed on the pavement for the control and guidance of traffic.
<b>peak hour</b>	The hour of the day having the highest traffic volume during the peak period.

Term	Definition
<b>peak period</b>	The period of the day having the highest volume of traffic.
<b>peak traffic flow</b>	The traffic volume during a time period of specified length during which such volume is at its maximum.
<b>pedestrian crossing</b>	A specially marked area giving legal rights to pedestrians crossing the road.
<b>percentile speed</b>	The spot speed at a particular location which is not exceeded by a specified percentage of all traffic passing.
<b>preliminary engineering</b>	Work of locating and designing, making surveys and maps, preparing specifications and estimates, and doing other engineering work before letting a contract for construction of a transport project. <i>See also <b>design process</b>.</i>
<b>priority road</b>	A road on which traffic has right-of-way over entering or crossing traffic at all intersections.
<b>priority rule</b>	Traffic regulation which assigns priority to one stream of traffic at an intersection.
<b>profile</b>	<ol style="list-style-type: none"> <li>1. A construction aid erected to assist in establishing a batter slope.</li> <li>2. The shape of a pavement surface measured in a vertical plane, from a datum, parallel to the traffic flow. <i>See also <b>longitudinal section</b> and <b>longitudinal profile</b>.</i></li> </ol>
<b>property line</b> boundary boundary line frontage	The legal boundary between a road reserve and the adjacent land.
<b>public road</b>	A public place which has been provided for use by the public for traffic movement and has been declared, or proclaimed, notified or dedicated.
<b>public transport</b>	Service by bus, rail, taxi or other means which provides transport to the public on a regular basis for payment of a prescribed fare.
<b>radial road</b>	Road radiating from the centre of an urban area. <i>See also <b>road</b>.</i>
<b>raised pavement marker</b>	A device used to supplement or replace traffic lines on the road surface. It may be retroreflective.
<b>raised reflective pavement marker</b> (Abbreviation <b>RRPM</b> )	Raised pavement marker with reflectors, fixed in the carriageway.
<b>ramp</b>	<ol style="list-style-type: none"> <li>1. Carriageway within an interchange providing for travel between two arms (legs) of the intersecting roads.</li> <li>2. <i>Traffic assignment</i>: a link between a freeway node and an arterial node.</li> <li>3. Sloping section of road, such as connecting different levels in a car park.</li> </ol>
<b>ramp terminal</b>	The point on an interchange ramp at which it intersects with a surface road or street.
<b>reaction time</b>	The time between the driver's reception of a stimulus and his taking the appropriate action, eg. application of the brakes, response to signals.
<b>refuge area</b>	An area, usually in the centre of a road, set aside for the exclusive of pedestrians.
<b>reseal</b>	A seal applied to an existing sealed, asphalt, concrete or timber surface.

# STATE HIGHWAY GEOMETRIC DESIGN MANUAL

## GLOSSARY OF TERMS

November 2005

Term	Definition
<b>residential area</b>	land largely occupied for residential purposes but which includes small shopping centres and ancillary features and primary schools.
<b>retaining wall</b>	A wall constructed to resist lateral pressure from the adjoining ground or to maintain in position a mass of earth.
<b>reverse curve</b>	A curve consisting of two arcs of the same or different radii curving in opposite directions and having a common tangent or a transition curve at their junctions.
<b>reversible lane</b>	A lane or carriageway assigned for the use of traffic in one direction at certain times, and in the opposite direction at other times.
<b>ribbon development</b>	Development, usually along a major road, that presents a continuous residential, shopping or business frontage having greater vehicular and pedestrian activity than land away from the road.
<b>right-left staggered intersection</b> right-left staggered junction	An intersection junction in which a driver turns to his right on entering the intersecting carriageway and then to his left in order to continue his route. This is the preferred configuration to a left-right staggered intersection.
right-turn lane	See <b>turning lane</b> .
<b>ring road</b>	A road which goes around, rather than through, an urban area. See also <b>road</b> and <b>circumferential road</b> .
<b>riprap</b>	Medium to large size rock protection, against scour, applied (usually by dumping) to the face of an embankment.
<b>road</b> arterial road circumferential road collector road controlled access road local road radial road ring road service road sub-arterial road toll road	A route trafficable by motor vehicles. In law, the public right-of-way between boundaries of adjoining property and is owned or administered by a Road Controlling Authority (RCA)
road base	See <b>basecourse</b> .
<b>road capacity</b>	Maximum number of vehicles or pedestrians that can pass over a given section of a lane, road or footpath in one direction, or both directions for a two-lane or three-lane road, during a given time period under prevailing road and traffic conditions. It is the maximum flow rate that has a reasonable expectation of occurring. In the absence of a time modifier, capacity is an hourly volume. The capacity would not normally be exceeded without changing one or more of the conditions that prevail. In expressing capacity, it is essential the prevailing road and traffic conditions under which the capacity is available. See also <b>capacity</b> .
<b>road classification</b>	Consistent terminology and designation of roads to provide a basis for planning and decision making by national and local government agencies responsible for various aspects of road administration.
<b>road furniture</b>	A general term covering all signs and devices for the control, guidance and safety of traffic, and the convenience of road users.



Term	Definition
<b>road inventory</b>	Inventory of all road characteristics, ie. control devices, parking restrictions, road widths, number of traffic lanes, etc.
<b>road hierarchy</b>	The grading of roads according to increasing or decreasing importance of their traffic-carrying or other function.
<b>road hump</b> speed bump	A vehicle speed control device in the form of a short raised section of carriageway.
<b>road reserve</b>	<ol style="list-style-type: none"> <li>1. A legally described area within which facilities such as roads, footpaths and associated features may be constructed for public travel. Often called road.</li> <li>2. A term customarily used in New Zealand to refer to all land between the legal road boundaries and typically includes the carriageway, footpaths and other accessways, berms and other unpaved areas. Where roads have not been formed, it also refers to so-called "paper roads".</li> </ol>
<b>road safety barrier</b> guardrail	A rail, or fence, erected to restrain vehicles which are out of control.
roadway	See <b>carriageway</b> .
<b>roadworks</b>	A general term for any work on a road for construction, repair or maintenance.
rotary	See <b>roundabout</b> .
<b>roughness</b>	The consequence of irregularities in the longitudinal profile of a road with respect to the intended profile. It is measured by the unidirectional displacement of a standard (NAASRA) test vehicle relative to its axle, as the vehicle travels over the surface at a standard speed.
<b>roundabout</b> rotary	An intersection where all traffic travels in one direction around a central island.
<b>rounding</b>	A curvature or curved section at the intersection of batters providing a transition between the two slopes.
<b>route</b>	<ol style="list-style-type: none"> <li>1. That combination of road sections connecting an origin and destination.</li> <li>2. <i>Traffic assignment</i>: a continuous group of links connecting two centroids that normally requires the minimum time to traverse.</li> <li>3. The path travelled by a public transport vehicle.</li> </ol>
<b>rumble strip</b>	Strips constructed across the carriageway for the purpose of reducing the speed of vehicles. Also used between opposing traffic lanes as a warning device
<b>run-off</b>	That part of the water precipitated onto a catchment area which flows as surface discharge from the catchment area past a specified point.
running speed	See <b>average speed</b> .
<b>safety ramp</b>	A short trafficable spur road, usually with a steep upgrade, provided for emergency use by vehicles on steep downgrades.
<b>safety space</b>	A space between a hazard or work site and safety barriers etc. to ensure traffic keeps a safe distance from the hazard or from workers on the work site.
<b>safety zone</b>	An area of carriageway reserved for passengers to wait for trams or busses.

Term	Definition
<b>sag curve</b>	A concave vertical curve in the longitudinal profile of a road.
<b>saturation flow</b>	<ol style="list-style-type: none"> <li>1. The flow of vehicles past a point on a carriageway which would be achieved if there is a continuous queue of vehicles upstream of that point, usually expressed as vehicles per hour.</li> <li>2. The rate of flow of vehicles across a stop line at a signalized approach during the effective green interval if there is a continuous queue of vehicles waiting to move during that time, usually expressed as vehicles per hour of green.</li> </ol>
<b>seagull intersection</b>	An intersection where a triangular island is used to separate turning traffic from through traffic in the same carriageway.
<b>seal</b>	A thin layer of binder sprayed onto a pavement surface and having a layer of aggregate rolled in.
<b>sealed carriageway</b>	That portion of the road pavement sealed to protect and waterproof the underlying pavement, (inclusive of sealed shoulders) and provide a suitable driving surface for vehicles.
<b>sealed shoulder</b>	That portion of the sealed carriageway beyond the traffic lane, located between the traffic lane edge line and the edge of seal, generally flush and contiguous with the sealed carriageway.
<b>selected fill</b>	Fill complying with specified requirements.
<b>semi-barrier kerb</b>	A kerb designed to deter vehicles from leaving the carriageway but less restrictive than a barrier kerb. <i>See also <b>barrier kerb</b>.</i>
<b>semi-mountable kerb</b>	A kerb designed so that it can be driven across in an emergency or on special occasions without damage to the vehicle. <i>See also <b>mountable kerb</b>.</i>
<b>separator</b> traffic separator	An area separating adjacent carriageways, upon each of which traffic usually moves in the same direction.
<b>service area</b>	An area with access to and from an adjacent highway or motorway, used to provide services and amenities to road users.
<b>service road</b>	A subsidiary carriageway constructed between the main carriageway and the legal road boundary, connected only at selected points with the main carriageway. <i>See also <b>collector-distributor road and road</b>.</i>
<b>service volume</b>	The maximum traffic volume that can be accommodated on a carriageway or road at a specified level of service.
<b>services</b>	Supply lines for water, electricity, gas, telephones, etc.
<b>shared zone</b>	Residential road surfaced and marked such that motorists recognise it as an area shared by both vehicles and pedestrians. A reduced speed limit is necessary in such areas.
<b>shift</b>	<ol style="list-style-type: none"> <li>1. An alteration to the previously adopted position of the centreline.</li> <li>2. The radial displacement of a circular curve from the tangent line resulting from the introduction of a transition curve.</li> </ol>
<b>shoulder</b>	The portion of the carriageway beyond the traffic lanes that is contiguous and flush with the surface of the pavement.

Term	Definition
<b>shoulder drain</b>	A drain through the shoulder to drain the subgrade.
<b>shoulder hinge point</b>	In the cross-section of a road, the point at which the side slope would intersect with the unsealed shoulder, or in the absence of an unsealed shoulder, the sealed shoulder.
<b>shy line</b>	The offset from the edge of a traffic lane beyond which a roadside feature does not cause drivers to slow unnecessarily, or steer away from, at their current travel speed.
<b>side cut</b>	That portion of a road on sloping ground where one edge only of the formation is in cut and the other edge is on the natural surface or on fill.
<b>side drain</b>	A longitudinal surface drain or ditch usually U-shaped and generally located between the surface water channel and the legal road boundary. In some situations the side drain may run immediately adjacent to the road pavement and collect surface water runoff from the road surface and adjacent land.
<b>side slope</b>	The uniform side slope of walls, banks, cuttings or embankments, expressed as a ratio of 1 vertical on x horizontal as distinct from grade.
sideways force coefficient	See <i>coefficient of side friction</i> .
<b>sight distance</b>	The distance measured along the carriageway over which objects of defined height are visible to a driver.
<b>sight triangle</b>	The area of land between two intersecting roadways over which vehicles on both roadways are visible to each driver.
<b>site investigation</b>	The examination of all those characteristics of a site which might affect the planning, design, construction and operation or performance of any engineering works on the site.
<b>skid resistance</b>	The frictional resistance provided by the pavement surface to the vehicle tyres during braking or cornering manoeuvres. It is usually measured on wet surfaces.
<b>slip</b>	A movement or fall of earth in a cut or bank.
<b>slip lane</b>	A lane provided for left turning vehicles allowing them to avoid stopping at an intersection.
<b>slip road</b>	A carriageway provided for vehicles to transfer between two adjacent carriageways having the same direction of travel.
<b>slope</b>	The inclination of a surface with respect to the horizontal expressed as rise or fall in a certain longitudinal distance. An inclined surface.
<b>slot drain</b>	A line of slots in the pavement to allow water to drain - usually into a piped stormwater system.
<b>span</b>	<ol style="list-style-type: none"> <li>1. The distance between the centres of adjacent supports of a bridge, beam or truss.</li> <li>2. The superstructure of a bridge between two adjacent supports.</li> </ol>
<b>space mean speed</b>	The average of the speeds of vehicles within a given space or section of road at a given instant, or the average speed of a specified group of vehicles based on their average travel time over a section of road.

Term	Definition
<b>speed (85<sup>th</sup> percentile)</b>	The speed at or below which 85 percent of the vehicles travel.
<b>speed environment</b>	A basic design parameter for a section of road, representing the uniform desired speed of the 85 <sup>th</sup> percentile driver. It can be measured on existing roads as the 85 <sup>th</sup> percentile of the speed distribution on the longer straights or large radius curves over the section.
<b>speed change lane</b>	An auxiliary lane, including tapered areas, primarily for the acceleration or deceleration of vehicles entering or leaving the through traffic lanes.
<b>speed hump</b>	A vehicle speed control device in the form of a short raised section of carriageway.
<b>speed survey</b>	A traffic survey involving the measurement of the speed of vehicles.
<b>spot speed</b>	The speed of a vehicle at a specified point.
<b>splay</b>	The triangular setting back of property lines adjacent to an intersection.
<b>split-diamond interchange</b>	The combination of two half-diamond interchanges of opposite direction serving two closely-spaced surface roads, such that the movements available to turning traffic are substantially similar to those provided at a full-diamond interchange.
<b>splitter island</b>	A short median island in the approach to an intersection.
<b>stage construction</b>	<ol style="list-style-type: none"> <li>1. A construction sequence in which a road is initially constructed to an operational or structural standard lower than its ultimate standard, and is subsequently upgraded to the ultimate standard.</li> <li>2. Construction affecting an existing road in which work is carried out in a number of well defined stages aimed at minimising disruption to traffic.</li> </ol>
<b>staggered T intersection</b>	An intersection in which the carriageway of one road is offset so as not to be continuous across the other road.
<b>standard axle load</b>	Single axle with dual-tyred wheels loaded to a total mass of 8.2 tonnes (80 kN).
<b>station</b>	<ol style="list-style-type: none"> <li>1. Location at which traffic survey data is collected.</li> <li>2. Stopping place on a railway for trains to load and unload passengers and freight.</li> <li>3. The distance of a point along a control line, measured from a datum point. <i>See also chainage.</i></li> </ol>
<b>stop line</b>	A transverse line or lines behind which vehicles must stand when stopped by police control, traffic signals or a regulatory sign.
<b>stopping distance</b>	The distance travelled by a vehicle between the time when the driver receives a stimulus signifying a need to stop and the time the vehicle comes to rest. Usually the minimum distance is implied.
<b>stock underpass</b>	A structure constructed to permit the passage of stock beneath a road.
<b>storage lane</b>	An auxiliary lane, usually at intersections, primarily for use by vehicles waiting to turn or cross.
<b>street</b>	A road that has mainly continuous housing or buildings on one side or both. It provides access to houses, buildings, shops, etc. with frontages onto the street. A street, by definition, is therefore found only in an urban area.

Term	Definition
<b>sub-arterial road</b>	A road connecting arterial roads to areas of development, and carrying traffic directly from one part of a region to another. <i>See also road.</i>
<b>sub-base</b>	The material laid on the subgrade below the base either for the purpose of making up additional pavement thickness required, to prevent intrusion of the subgrade into the base, or to provide a working platform.
<b>subgrade drain</b>	A subsoil drain to drain water from the sub-grade.
<b>subgrade surface</b>	The surface of the formation, excluding batter slopes, upon which the carriageway is constructed.
<b>subgrade</b>	The trimmed or prepared portion of the formation on which the pavement is constructed. Generally taken to relate to the upper line of the formation.
<b>subsoil drain</b>	A drain below the ground surface, the lower portion, or all, of which collects subsurface water throughout its length.
<b>substructure</b>	In a bridge, the piers and abutments (including wing walls) which support the superstructure.
<b>subway</b>	A structure constructed to permit the passage of pedestrians, cycles or stock beneath the road or railway or vehicles beneath the railway.
<b>summit curve</b> crest curve	A convex vertical curve in a longitudinal profile of the road.
<b>sump</b>	<ol style="list-style-type: none"> <li>1. A concrete pit at the end of a water channel to settle out solids before the flow enters a pipe drain. Also known as catch pit and mud tank.</li> <li>2. A hole or depression into which water is drained.</li> </ol>
<b>superelevation</b>	The continuous transverse slope normally given to the carriageway at horizontal curves.
<b>suppressed traffic</b>	Reduction in traffic volumes resulting from a change in traffic arrangements.
<b>surface water channel</b>	An open drain or ditch formed for the collection and drainage of water runoff from the road's surface. The width of the channel shall be a minimum of 1.0 metre (0.5 metre either side of the invert).
<b>surfacing</b>	The uppermost part of a pavement specifically designed to resist abrasion from traffic and to minimize the entry of water. It may be a sprayed seal, asphalt or other material.
survey	<i>See <b>cordons survey</b>, <b>number plate survey</b> and <b>travel time survey</b>.</i>
<b>swale</b>	An open vegetated drainage channel or shallow troughlike depression explicitly designed to carry, detain, partly treat and promote the filtration of stormwater runoff.
<b>swept path</b>	The area which is traced by the extremities of the bodywork of a vehicle while turning.
<b>swept width</b>	The radial distance between the innermost and outermost turning paths of a vehicle.
<b>table drain</b>	The side drain of a road adjacent to the shoulders, having its invert lower than the pavement base and being part of the formation.
<b>tangent point</b>	The point on the centreline where straight and curve meet tangentially.

Term	Definition
<b>theoretical capacity</b>	The maximum number of vehicles that can pass a given point on a lane or carriageway during one hour under prevailing carriageway and traffic conditions, regardless of their effect in delaying drivers and restricting their freedom to manoeuvre.
<b>three-centred curve</b>	A compound unidirectional curve consisting of three circular arcs of different radii.
<b>through car units</b> equivalent car units	A measure used in traffic signal design calculation involving the conversion of each unit of turning traffic and truck or bus traffic into its equivalent in terms of passenger cars, and the summation of these together with actual passenger cars for an approach.
<b>through lane</b>	A lane provided for the use of vehicles proceeding straight ahead.
<b>tidal flow</b>	A means of increasing capacity under conditions of high traffic volume and marked directional split by means of reversible lanes or carriageways.
<b>T intersection</b> T junction	A junction in which one road terminates approximately at right-angles to a through road, eg. an intersection shaped like a "T".
<b>toe</b>	<ol style="list-style-type: none"> <li>1. The part of the base of a retaining wall which is on the side remote from the retained material.</li> <li>2. The base of an earthen slope</li> </ol>
<b>toe drain</b>	An interceptor drain constructed along the bottom of a batter to collect batter run-off.
<b>toe wall</b>	A low retaining wall constructed at the foot of an earth slope.
<b>toll</b>	Fee or charge for use of a road, bridge or tunnel.
<b>toll road</b>	A road, bridge or tunnel available to traffic only upon payment of a fee. <i>See also road.</i>
<b>tollway</b>	A motorway, for the use of which a toll must be paid.
<b>traffic</b> by-pass traffic diverted traffic generated traffic induced traffic suppressed traffic	Any vehicles, persons or animals travelling on a road.
<b>traffic composition</b>	The fraction (usually expressed as a percentage) of types of vehicles within the total traffic flow.
<b>traffic count</b> traffic volume count traffic census	The process of determining the number of vehicles passing a given point or points during a specified period of time.
<b>traffic density</b>	The number of vehicles, excluding parked vehicles, per unit length of
<b>traffic divider</b> traffic separator	A device used on multilane roads to keep traffic in prescribed lanes.
<b>traffic engineering</b>	The measurement and study of traffic, the determination of its characteristics, and the application of the knowledge so gained to improving the safety, convenience and economy of road transport.
<b>traffic flow</b> traffic volume	The number of vehicles passing a given point during a specified period of time.

Term	Definition
<b>traffic generator</b>	A development or area capable of generating traffic, eg. shopping complex, industrial area, car park.
<b>traffic island</b>	A defined area, usually at a intersection, from which traffic is excluded and which is used for control of vehicular movements and for pedestrian refuge.
<b>traffic lane</b> lane	A portion of the carriageway allotted for the use of a single line of vehicles.
<b>traffic lanes</b> travelled way	That portion of a carriageway ordinarily assigned to moving traffic, and exclusive of shoulders and parking lanes.
<b>traffic management</b>	The use of traffic engineering techniques to control the flow of traffic.
<b>traffic pattern</b>	The variation and seasonal fluctuation in traffic flow.
<b>traffic platoon</b>	A closely spaced group of vehicles on a carriageway, moving, or stopped and ready to move, with relatively large spaces ahead and behind.
traffic separator	See <b>separator</b> .
<b>traffic regulations</b>	Statutory rules in relation to driving and/or vehicular requirements, enforceable by law.
<b>traffic restraint</b>	Procedure or quantitative term indicating an imposed limitation on the volume of motor vehicle traffic.
<b>traffic sign</b>	A sign to regulate traffic and warn or guide drivers.
<b>traffic stream</b>	Traffic, usually vehicular, moving in one or more lines in the same direction.
<b>traffic survey</b>	The measurement and study of some aspect of traffic movement.
traffic volume	See <b>traffic flow</b> .
traffic volume count	See <b>traffic count</b> .
<b>transport planning</b>	Planning of the operations and development of transport including the efficient and equitable allocation of resources.
<b>transport study</b>	Analysis and synthesis of a specific transport problem. Usually involves data collection, analysis, forecasting, evaluation and recommendations.
<b>transport system</b>	Sum of the interacting components which constitute a system for the purpose of transporting passengers and/or goods.
<b>transit lane</b>	A traffic lane set aside for the use of buses, motorcycles, taxis and vehicles carrying a specified minimum number of occupants.
<b>transition curve</b>	A curve of varying radius used for the purpose of easing a change of direction.

Term	Definition
<b>transition length</b>	<ol style="list-style-type: none"> <li>1. <i>Horizontal alignment:</i> The distance within which the alignment is changed in approach from straight to a horizontal curve of constant radius.</li> <li>2. <i>Crossfall:</i> The distance within which the pavement crossfall is changed from normal to that appropriate to the curve.</li> <li>3. <i>Pavement widening:</i> The distance within which the pavement width is changed from normal to that appropriate to the curve.</li> </ol>
<b>transverse profile</b>	The shape of a pavement surface measured as vertical distances from a datum perpendicular to traffic flow. <i>See also longitudinal profile.</i>
<b>travel speed</b>	The representative, usually 85 <sup>th</sup> percentile, speed of traffic at a site.
<b>travel time</b> journey time	Time required to travel between two points.
<b>travel time survey</b>	Survey designed to obtain travel times over selected traffic routes.
travelled way	<i>See traffic lanes.</i>
<b>traverse</b>	A survey consisting a continuous series of connected straight lines, the lengths and bearings of which are measured. When the lines form a complete circuit or lie between two known points it is termed a closed traverse; otherwise it is termed an open traverse.
<b>trip</b>	<ol style="list-style-type: none"> <li>1. <b>One-way movement</b> from one place to another for a particular purpose. <i>See also journey.</i> <b>NOTE:</b> <i>Care is required in applying this general definition. In particular, the definition of 'purpose' will affect the way in which person, vehicle or commodity movements are classified into trips. In travel surveys, the 'purpose' set often includes 'change mode' and 'serve passenger', thus making a trip correspond to a movement by only one mode. Movements for these purposes have been termed 'legs', 'segments' or 'unlinked trips', in various transport planning practices. For analyses, trips are often 'linked', thus making a trip embrace more than one mode and/or lower order purpose.</i></li> <li>2. <b>Public vehicle operations:</b> the movement by one vehicle or unit in one direction from the start of a route to the end of it.</li> </ol>
<b>truck route</b>	Signposted route defined as being the most suitable for heavy transport and aiming to exclude commercial and residential areas.
<b>trumpet interchange</b> trumpet junction	An interchange at a T junction, generally providing interchange ramps for all movements.
<b>turning circle</b>	The circle traced by the front outside wheel of the vehicle when it is turned to the full lock of its steering mechanism. <i>See also minimum turning radius.</i>
<b>turning lane</b> left-turn lane right-turn lane	<ol style="list-style-type: none"> <li>1. A lane reserved for turning traffic.</li> <li>2. A storage and/or speed-change lane reserved for turning traffic.</li> </ol>
<b>turning movement</b>	The traffic volume making a specified turn at an intersection.
<b>turning path</b>	The path of a designated point on a vehicle making a specified turn.
<b>turning path diagram</b>	A scale diagram showing the path of both the outside of the outermost wheel of a vehicle making a turn of specified angle and specified radius measured to the outermost wheel.
<b>turning roadway</b>	A carriageway, usually one-way, at an intersection or interchange for turning vehicles.



Term	Definition
<b>turning track width</b>	The radial distance between the turning path of the outside of the outer front tyre and the outside of the rear tyre which is nearest the centre of the turn.
<b>typical cross-section</b>	A cross-section of a carriageway showing standard dimensional details and features of construction.
<b>U turn</b>	A turn made on the carriageway usually without reversing the vehicle resulting in reversal of direction of travel.
<b>underpass</b>	<ol style="list-style-type: none"> <li>1. A grade separation where the major road passes under an intersecting minor road or railway. <i>See also <b>grade separation</b>.</i></li> <li>2. A tunnel constructed for the use of pedestrians, cyclists and/or stock.</li> </ol>
<b>uninterrupted flow</b>	A condition in which a vehicle travelling in a traffic stream is not required to stop or slow down for reasons other than those caused by the presence of other vehicles in that stream.
<b>unsealed shoulder</b>	That portion of the carriageway, located between the edge of seal and the shoulder hinge point, having a slope generally no steeper than 12:1, except on curves where the superelevation may increase the slope.
<b>upstream</b>	The direction along a carriageway from which the vehicle flow under consideration has come.
<b>utilities services</b>	Services such as gas, water, electricity, telephone, sewer and stormwater.
<b>vehicle crossing</b>	A formed area where vehicles can cross over channel and footpath.
<b>vehicle type</b>	Classification of vehicles by type, eg. car, station waggon, utility, light commercial vehicle, etc, and/or by number of axles.
<b>vehicle kilometres of travel</b> (Abbreviation <b>VKT</b> )	Total vehicle kilometres of travel over a road segment or number of road segments for a certain period, usually a specified year.
<b>vehicles per lane per day</b> (Abbreviation <b>VLD</b> )	The volume of traffic expressed as vehicles per lane per day.
<b>vehicles per day</b> (Abbreviation <b>VPD</b> )	The number of vehicles observed passing a point on a road in both directions for 24 hours.
<b>verge (NZ)</b>	That area of road reserve located between the shoulder hinge point and the legal road boundary.
<b>vertical curve</b>	A curve in longitudinal profile of a carriageway to provide for gradual change of grade.
<b>viaduct</b>	A long bridge composed of a series of spans, usually over land
<b>volume</b>	Number of persons, vehicles or pedestrians passing a given point in a specified period of time.
<b>walk-over inspection</b>	A search for road faults carried out by walking along the section of road.
<b>warrant</b>	A criterion, usually numerical and related to usage levels, used to determine whether the installation of a traffic control device can be justified.
<b>water table</b>	The natural level at which water stands in a bore-hole, well, or other depression, under conditions of equilibrium.

Term	Definition
<b>waterproofing</b>	The process of rendering surfaces or materials impervious to water.
<b>waterway</b>	<ol style="list-style-type: none"><li>1. A channel or stream.</li><li>2. The area available for water to pass through or under a structure.</li></ol>
<b>weaving</b>	The movement in the same general direction of vehicles within two or more traffic streams intersecting at a small angle so that vehicles in one stream cross other streams gradually. <i>See also filtering and merging.</i>
<b>weaving area</b>	The area of a carriageway in which weaving occurs.
<b>weaving distance</b>	The length of a carriageway in which weaving occurs.
<b>weaving section</b>	A length of one-way carriageway, designed to accommodate weaving, at one end of which two one-way carriageways merge and at the other of which they separate.
<b>Y intersection</b> Y junction	A junction in which a road joins a through road at an oblique angle.
<b>zone</b>	Portion of a study area, designated as such for particular land use and traffic analysis purposes.
<b>zoning</b>	Partitioning of a city or town by ordinance into sections reserved for different purposes of land usage such as residences, business or manufacturing. Commonly used zoning terms are residential, commercial, industrial, public purposes, recreational, special uses, etc.