Local Area Traffic Management and Pedestrian Facilities Guidelines

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Contents

Purpose

The purpose of these guidelines is to provide direction for City of Darwin officers on whether or not to introduce a Traffic Management Treatment or Pedestrian Control Treatment, the nature of the treatment and basis for prioritisation, for a particular road in the Darwin Municipality.

In line with the Movement, Greening and Climate Emergency Strategies, the Guidelines support the community's desire for healthy and safe travel through a safety-first approach, including provision for the following in the design:

- Enable passing and take into account people of all levels of mobility,
- locate facilities with appropriate site lines,
- provide sufficient lighting and tactile indicators for general safety and the visually impaired respectively,
- include amenity in the form of street trees, street furniture and public art where practicable,
- include wayfinding and signage and proximity of key destinations for legibility, and
- address climate emergency factors through the provision of natural and/or artificial shade and the use of recycled materials in construction.

Scope

These guidelines provide an equitable and consistent approach to assessing road and pedestrian safety concerns across City of Darwin's road network.

These guidelines are informed by Australian Standards, Austroads Design Guidelines and best practice and have been developed in consideration of City of Darwin's Movement Strategy.

These guidelines provide a system to determine the need and priority of traffic and pedestrian control measures that address road safety and amenity issues on roads under the care and control of the City of Darwin.

The Bike Notes should be considered in parallel to these guidelines.

Black Spot Funding Program projects are subject to separate criteria set by the Australian Government and are outside the scope of these guidelines.

These guidelines apply only to roads classified as Collector Roads' or Local Roads with a posted or default speed limit of 50 km/hr or less.

Guideline statement

A traffic management investigation will consider factors such as traffic speed, traffic volumes, traffic crash data, road design and topography, surrounding land use and amenity. The investigation will be checked against threshold levels to determine the level of action to be taken.

A pedestrian management investigation will consider traffic and pedestrian counts.

Traffic management investigation

When considering the implementation of Traffic Management Treatments, City of Darwin officers will assess the traffic count data currently available for that road section or intersection. If no data is available from the last two years, then traffic counters will be placed along the road to obtain current data.

When assessing entire lengths of road, counts are to be undertaken approximately every 300-500 metres. The section of road to be assessed is generally delineated by major intersections along the road.

When assessing intersections, the zone of influence is considered to include 50 metres from the centreline of the intersecting road on every approach to the intersection. Delays are queue lengths, which combine to determine level of service, are important considerations in the prioritisation of intersections. Traffic count to be undertaken on major leg of intersection.

Travel speed

The key indicator for this parameter is the 85th percentile speed (which is the speed at which 85% of motorists were travelling at or below and the criterion utilised for speed assessment purposes). This is also considered the operating speed of the road.

Speed is a major contributor to the potential for crashes, and the likelihood of crashes increases when the travel speed is more than 10 km/h above the speed limit.

Traffic volume

The key indicator for this parameter is the average weekday traffic volume measured in vehicles per day over the course of a week.

There is an expectation of higher traffic volumes on Collector Roads than on Local Roads, and a differentiation in scores is therefore appropriate for these two classes of road. Local Roads typically have daily volumes of less than 3,000 vehicles per day and have a principle function of providing access to properties whereas Collector Roads typically have traffic volumes of greater than 3,000 vehicles per day and have a dual function of providing property access and conveying large volumes of traffic.

The percentage of peak hour traffic will be used to determine the level of non-local through traffic that occurs along a road section. It is generally considered that this will mostly occur on Local Roads during peak hour traffic periods, and traffic will generally comprise local residents at other times. In traffic

engineering practice, it is generally accepted that approximately 10% of the daily traffic flow will occur during the peak hour. When the percentage of peak hour traffic is significantly higher than this amount, there is some indication that the level of non-local through traffic is higher than normal.

Crash data

The key indicator for this parameter is the frequency and severity of crashes within the most recent 5-year period on record. Crash data sourced from the Northern Territory Government's Department of Infrastructure, Planning and Logistics is used in the assessment. Anecdotal evidence and reports from motorists and residents cannot be considered unless verified by official crash record.

To prevent long road sections from scoring excessively, the number of crashes will be divided by the road section length to form a crash rate per kilometre.

Road design and topography

Sharp bends, crests or steep hills may be considered dangerous when travel speeds are high. Therefore, assessments will consider locations where the potentially deficient geometric factors are combined with higher speeds.

Land use adjacent road being assessed

Vulnerable road users, such as school children, elderly pedestrians, patients of health facilities and bike riders, are prone to a high risk of injury in the event of a vehicular collision. This parameter offers a point of differentiation from normal residential abutting land uses. For this reason, a number of land uses have been selected that are most likely to contribute to road crashes through high pedestrian movements, including educational institutions, such as colleges and schools, and retail. Activity generators should only be considered where there is direct frontage to the road being assessed.

The classification of a major pedestrian crossing point generally would be reserved for major commercial or educational precincts, near public transport hubs or adjacent to major sporting grounds and reserves. Activity generators should only be considered where there is direct frontage to the road being assessed, and the scores for these criteria compound if there are multiple facilities along the length of road being assessed.

The classification of an important active transport route generally would be reserved for roads with on-road cycling facilities or where the volume of bicycle traffic and the level of interaction with motor vehicles is high.

Public open space includes reserves and parks which may attract a lower, less intense pedestrian activity level.

Major on street parking is to be used where formal on street parking exists within the study area. This can be in the form of on road marked bays or parking embayment, though professional judgment should be used if the parking is underutilised during the problem period being studied.

In accordance with City of Darwin's Movement Strategy, additional emphasis has been put on parameters related to pedestrian, bicycling and micro-mobility transport.

Amenity

The key indicator for this parameter is the percentage of Heavy Vehicles using the road.

There is an expectation that the percentage of Heavy Vehicles and non-local traffic will be higher on Collector Roads than on Local Roads, and a differentiation is therefore appropriate for these two classes of road.

Assessment criteria

The assessment criteria determine the level of intervention and the priority of the project for future budget deliberations.

Table 1

Criteria	Parameter
Speed	85th Percentile Speed exceeds the road speed limit (SL) [km/h]
Traffic Volumes	Average Weekday Traffic - vehicles per day (VPD)
	Peak Hour Traffic (Rat Running) [%]
Crash Data*	5-year Crash Data
Road Design and Topography	Restricted SISD, SSD and ASD sight distance caused by crest curve or horizontal curve [85% Speed]
	Steep hill (>10%), in downgrade direction [85% Speed]
Land Use Adjacent Road Being Assessed	Major Bicycle or Pedestrian Crossing Point or alongside Major Bicycle or Pedestrian Path (VPD)
	School, aged care or health facility [85% Speed]
	Retail, Outdoor Dining, Public Open Space, Medium/High Density Residential, Marked/Indented Parking Bays [85% Speed]
	Public Open Space
Amenity Factors	% of Heavy Vehicles (Austroads Class 3 & above)

*Road sections less than 500 m and intersections are to be assessed for 0.5 km length of road to prevent these from scoring excessively. For intersections, the zone of influence includes 50 m of road on every approach to the intersection.

Threshold levels for action

The assessment is checked against the threshold levels to determine the level of further action to be taken. Each category is defined by a range, with Category 1 being the highest range.

Table 2

Category	Typical Response
1	Category 1 sites are the highest priority locations and will be considered for inclusion in City of Darwin's future design and construction programs including Local Area Traffic Management, Local Roads and Community Infrastructure and other specific funding opportunities etc. for the implementation of suitable significant capital works solutions. These programs will be reviewed annually. When developing projects listed on the design and construction programs, investigations will be undertaken to determine the suitability of various treatment options, and concept designs will be prepared to allow consultation with Elected Members and the community. A project will proceed to detailed design if there is majority support from the responses received during the community consultation, or if changes can be made to address the primary issues of concern raised during the consultation.
2	Category 2 sites will be considered for low-cost non-capital works solutions, such as signage and line marking improvements. These sites will require a further review within a 12-month period of the low-cost non-capital works solutions being implemented. If the review reveals an increasing trend in traffic volumes, travel speeds and/or crash statistics, it may then be considered for inclusion in City of Darwin's future design and construction programs for the implementation of suitable significant capital works solutions.
3	Category 3 sites require no capital works solutions be implemented. These sites will be treated through the implementation of City of Darwin's speed check signs and road safety campaigns.
4	Category 4 sites require no capital works solutions be implemented. These sites will be treated by request to the Northern Territory Police to undertake additional enforcement activities.

Pedestrian control investigation

When considering the implementation of Pedestrian Control Treatments, City of Darwin officers will assess the pedestrian count data currently available for that road section or intersection. If no data is available from the last two years, pedestrian counts will be conducted on intersections being considered.

Children's crossings and pedestrian crossings can only be constructed on roads with one lane of traffic moving in either direction. In locations with multiple lanes travelling in one direction, a pedestrian actuated crossing or pedestrian refuge is more appropriate.

Children's crossing

Preschools and primary schools without an existing school crossing will automatically be approved a school crossing with the location being based on establishing desire lines through a pedestrian survey. Preschool and primary schools with an existing school crossing and childcare centres requesting school crossings will need to meet the criteria outlined below.

A children's crossing is warranted when counts immediately before and after school hours demonstrate:

- the pedestrian flow crossing the road is greater than or equal to a minimum volume, representing a significant number of pedestrians crossing the road; and
- the vehicular flow is greater than or equal to a minimum volume, representing a significant number of vehicles travelling through the site.

Generally, a Children's Crossing will only be installed if the preschool, primary school or childcare facility it services is willing to erect and dismantle the associated signs at the start and end of each day. School crossings will not normally be provided for schools that cater solely for middle and senior school students.

Pedestrian crossing

City of Darwin's practice for determining the need for pedestrian crossings, also known as zebra crossings, is detailed below:

A pedestrian crossing is warranted where during a typical day:

- the pedestrian flow crossing the road is greater than or equal to a minimum volume, representing a significant number of pedestrians crossing the road; and
- the vehicular flow through the site is greater than or equal to a greater minimum volume than with a Children's Crossing, representing a significant number of vehicles travelling through the site.

If the site is nearby another vulnerable user facility a pedestrian crossing is warranted where in a typical day:

- The pedestrian flow crossing the road is greater than or equal to a minimum volume, representing a significant number of pedestrians crossing the road (the same as a Children's Crossing).

- The vehicular flow through the site is greater than or equal to a minimum volume, representing a significant number of vehicles travelling through the site (marginally greater than for a Children's Crossing).

If these warrants are met, a pedestrian crossing is appropriate.

Raised children's and pedestrian crossings used predominantly by vulnerable pedestrians will be considered when the operating speed of the road is a minimum of 15% higher than the road speed limit. For other pedestrian crossings, raised crossings will be considered when the operating speed is a minimum of 20% higher than the road speed limit.

Pedestrian Actuated Crossing

Pedestrian actuated crossings will be considered as an option, on a case-by-case basis, subject to detailed assessment/modelling, including vehicular and pedestrian delays and impacts on road function.

Pedestrian refuge

A pedestrian refuge will be considered where it provides connectivity, the required carriageway width exists to install it and the location will be dependent on pedestrian desire lines determined from pedestrian count data.

Definitions

85th Percentile Speed means the travel speed at which 85% of vehicles are travelling at or below and is measured in kilometres per hour. This is often referred to as the 'Operating Speed' and reflects the speed at which the road environment allows vehicles to travel comfortably.

Collector Roads provide access to a maximum of 250 residences and entry to one or more Local Roads. They may also provide connectivity between suburbs and act as a strong connection to an arterial road system that connects major focal points in the municipality and provide serviceability to a series of urban areas.

Heavy Vehicles means all vehicles designated as Class 3 and above in the Vehicle Classification System shown in the Austroads Technical Report AP- T60/06 Automatic Vehicle Classification by Vehicle Length.

Local Roads provides frontage and gives access to a maximum of 60 residences.

Pedestrian Management Treatment means any treatment constructed within the public road reserve that organises, arranges, guides and controls both stationary and moving pedestrians, to provide for the safe, orderly and efficient movement of persons and goods and to protect and enhance the quality of the local environment on and adjacent to roads.

Traffic Management Treatment means any treatment constructed within the public road reserve that organises, arranges, guides and controls both stationary and moving traffic, including cyclists and all

types of vehicles, to provide for the safe, orderly and efficient movement of persons and goods and to protect and enhance the quality of the local environment on and adjacent to roads.