

DN-GEO-03084

The Treatment of Transition Zones to Towns and Villages on National Roads

**TII Roads Conference
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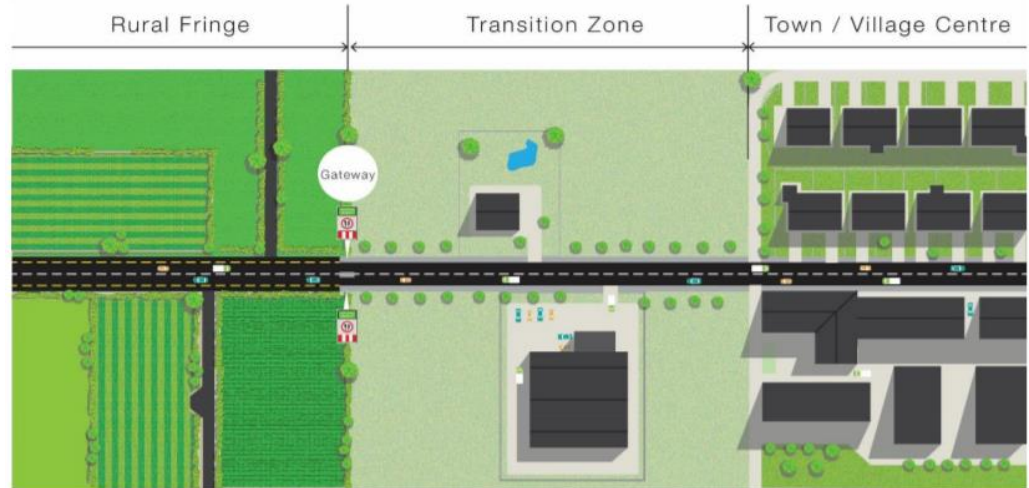
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Introduction:

- What is DN-GEO-03084 and where does it apply.
- Preplanning, Selection and Evaluation.
- Treatment of the Rural Fringe and Gateway
- Treatment of the Transition Zone
- The Provision of Pedestrian Facilities
- The Provision of Cycle Facilities
- Conclusions
- Worked Examples

What is DN-GEO-03084

- It describes the requirements that shall be **implemented** on National Roads on the approaches to towns and villages in terms of the provision of traffic calming measures and pedestrian & cycle facilities.
 - Rural Roads
 - Rural Fringe
 - Gateways
 - Transition Zones
 - Villages/Town Centre
- It **supplements** the information provided in the Design Manual for Urban Roads and Streets (DMURS) which is applicable within the Centres of towns and villages on National Roads
- It provides **additional guidance** for the treatment of the Rural Fringe and Transition Zones on National Roads



Preplanning, Selection and Evaluation

Preplanning

The following data should be collected and compiled:

- Traffic and Pedestrian Counts
- Collision Details
- Speed Measurements
- A detailed topographical survey
- Future Infrastructural Development
 - improvements to pavements
 - improvements to utility services
 - planning applications

Preplanning, Selection and Evaluation

Selection of Traffic Calming Schemes

- Based on Collision History
- Based on Pavement and Utility Improvement Schemes.
 - Experience shows that where pavement improvement schemes are undertaken, operating speeds and collision risk may increase in towns and villages on the resurfaced section.
- Based Planning Considerations.
 - Major new developments in an area may give rise to increased traffic volumes or changes in traffic type.

Preplanning, Selection and Evaluation

Monitoring and Evaluation

- The impact of the scheme shall be systematically monitored after installation.
- The primary purpose of traffic calming is to reduce the number of collisions by creating a sense of place and reducing vehicle speed.
- It is important that any assessment has regard to both prior expectations and reaction afterwards of all road users, especially those of the vulnerable groups such as pedestrians and cyclists.
- The Traffic Calming Data Summary Sheet in Appendix A shall be completed for each scheme.

Treatment of the Rural Fringe and Gateway

Rural Fringe

- The key design issue is that the Rural Fringe looks very similar to the adjoining rural sections at the outer limit of the Transition Zone, while at the other end of the Transition Zone there is generally an abrupt change to the streetscape of the town or village.
- The difference in appearance between rural and urban sections is largely explained in terms of the concept of 'optical width' that is the width between fences is generally many times greater than the height of the vertical elements which bound the field of view.
- The 'optical width' concept is introduced progressively through the Rural Fringe to achieve the dominance of the vertical elements culminating in a 'Gateway' at the beginning of the Transition Zone.

Treatment of the Rural Fringe and Gateway

- Design Elements of Rural Fringe;
 - Prohibition of overtaking within the Rural Fringe, using formal landscaping, signs, continuous centre line road markings and Gateway treatments as appropriate;
 - Phasing out of the hard shoulder outside the carriageway edge line to increase the visual effect;
 - Narrowing of the carriageway;
 - Use of signs and landscaping with a vertical emphasis;

Treatment of the Rural Fringe and Gateway

- Design Elements of Rural Fringe
 - Provision of other possible design elements that may be appropriate to the town or village being treated to give it an individualised sense of identity;
 - Use of appropriate soft landscape elements such as trees, shrubs, and grass verge treatment, which change in composition and degree of formality along the Transition Zone into the town;
 - Provision of cyclist and pedestrian facilities;
 - Use of the town name sign in conjunction with the area speed limit sign in the design of the Gateway itself.

Treatment of the Rural Fringe and Gateway

Gateway

- General Design Guidelines for Gateways
 - shall mark a definite change in the character of the surrounding area from rural to urban and shall normally be located at the extent of the speed limit but not always.
- General Location and Layout
 - should incorporate a central island wherever the road width allows.
 - should be visible over the stopping distance for the 85th percentile approach speed.
 - should not interfere with sightlines at junctions or accesses.
 - location should take due cognisance of current and known future developments.

Treatment of the Rural Fringe and Gateway

- Other Standards that shall be applied to the Gateway Design
 - **Lighting.**
 - Designed in accordance with DN-LHT-03038 Design of Road Lighting for National Roads
 - **Signage and Road Marking.**
 - Designed in accordance with the Traffic Signs Manual and the CC-SPW-01200 Specification for Road Works - Traffic Signs and Road Markings
 - **Road Pavement.**
 - Designed in accordance with CC-SPW-00900 Specification for Road Works - Road Pavements - Bituminous Materials.
 - **Standard Construction Details.**
 - A full list of Standard Construction Details are contained in Appendix G.

Treatment of the Transition Zone

Design Elements for Transition Zones

Every effort should be made to ensure the harmonious integration of the scheme into the identity of the town/village.

- The design elements that may be considered for a particular scheme include:
 - The use of landscaping;
 - The provision of pedestrian facilities;
 - The provision of pedal cycle facilities;
 - The use of kerbing or road markings.
- List of Standard Construction Details are contained in Appendix G

Treatment of the Transition Zone

Maintenance of an Appropriate Carriageway Width

The selection of appropriate traffic calming techniques within the urban area is chiefly influenced by the road width available. In particular, the following recommended dimensions determine the range of configurations possible for any given road width:

- Kerb to kerb width for two way traffic flow should be between 6m and 6.5m depending on the proportion of HGV usage on the route and may require widening on curved sections;
- Kerb to kerb width for one way traffic flow at traffic islands should be 3.5m;
- Minimum width of central refuge island should be 2.1m, with an absolute minimum width of 1.5m;
- The Designer shall carry out a swept path analysis on all designs to ensure the widths provided are sufficient for the proposed design vehicle.

Treatment of the Transition Zone

The Provision of Pedestrian Facilities

- Provides guidance for the provision of pedestrian crossings and footpaths within 50km/h or 60km/h speed limits on National Roads.
- For guidance on the provision of crossings & footpaths in the urban centres of towns and villages reference shall be made to DMURS.
- Pedestrians need adequate gaps in traffic to cross a road. In relatively low speed urban environments (up to 50km/h) a gap of 4-6 seconds is adequate for most able-bodied adult pedestrians to cross a 6m wide two-lane road.
- Visually impaired pedestrians, wheelchair users and people with walking difficulties will require longer gaps of around 10-12 seconds.
- pedestrian crossing should be located as close to the pedestrian desire line as possible but should avoid obvious points of conflict with nearby side roads and vehicle accesses

Treatment of the Transition Zone

The Provision of Pedestrian Facilities

- Types of Pedestrian Crossing Facilities
 - Uncontrolled crossing
(CC-SCD-05021 & CC-SCD-05042)
 - Controlled Zebra crossing
(CC-SCD-05022, CC-SCD-05023 and CC-SCD-05024.)
 - Controlled Signalised crossing
(CC-SCD-05025, CC-SCD-05026 and CC-SCD-05027)

Treatment of the Transition Zone

The Provision of Cycle Facilities

- Cyclists may be catered for within traffic calming measures by means of a cycle facility that is:
 - On the road carriageway or a cycle lane on the road carriageway;
 - On the existing or modified footpath as a shared use facility;
 - On a cycle track physically segregated from the road carriageway by means of a raised kerb, grass verge or similar (may be a shared use cycle/pedestrian facility).
- DN-GEO-03036 Cross Sections and Headroom
- CC-SCD-05001 Plan of Cycle Bypass of Gateway

Conclusions

- DN-GEO-03084 **shall be implemented** on National Roads on the approaches to towns and villages.
- It **provides guidance** in relation to the provision of traffic calming measures including pedestrian and cycle facilities.
- It **supplements** the information provided in **DMURS**.
- Designer shall **comply with all relevant TII Publications** when designing a scheme using DN-GEO-03084 which may include;
 - DN-GEO-03031 - Rural Road Link Design
 - DN-GEO-03036 - Cross Sections and Headroom
 - DN-GEO-03030 - Guidance on Minor Improvements
 - DN-LHT-03038 - Design of Road Lighting for National Roads
 - GE-STY-01024 - Road Safety Audit
 - TII Specification for Road Works (CC-SPW-00900 & CC-SPW-01200)

Thank you
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