



PLANNING ACT 2002

**NORFOLK ISLAND
DEVELOPMENT CONTROL PLAN NO. 1**

NEW SUBDIVISION ROADS

Commenced 24 June 2011

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DEVELOPMENT CONTROL PLAN No. 1 – NEW SUBDIVISION ROADS

PART A – GENERAL

1. Norfolk Island Development Control Plan No.1 – New Subdivision Roads

This plan is called Development Control Plan No.1 – New Subdivision Roads

2. Commencement

This plan comes into effect on the later of –

- (a) the date of publication in the Gazette of the relevant notice under paragraph 23(2)(a) of the Planning Act 2002; or
- (b) a later date of commencement specified in the relevant notice.

3. Definitions

In this plan, unless the contrary intention appears –

PUBLIC ROAD, as defined in the *Roads Act 2002*, means:

- (a) a public road open under Part 2; or
- (b) a public road that is to be taken to be open under Part 2 by virtue of section 35 of that Act.

ROAD has the same meaning as defined in the Norfolk Island Plan 2002.

ROAD PROJECT, as defined in the *Roads Act 2002*, means a proposal for:

- (a) the opening of a public road;
- (b) the closing of a public road; or
- (c) a combination of the opening and closing of a public road or public roads.

ROAD RESERVE means the entire width of a road, including the road surface and shoulders, including space for the installation of underground or overhead utilities.

SUBDIVISION, as defined in the *Subdivision Act 2002*, means —

- (a) the subdivision under the *Land Titles Act 1996* of a single parcel of land into 2 or more separate parcels; or
- (b) the amalgamation under the *Land Titles Act 1996* of two or more adjacent parcels of land into a single parcel other than an amalgamation of land under section 40 of that Act; or
- (c) the adjustment of a boundary between two or more adjacent parcels of land so as neither to amalgamate nor subdivide the parcels; or
- (d) any combination of such a subdivision or amalgamation.

4. Purpose of this Development Control Plan

The purpose of this plan is to ensure that appropriate road engineering standards are applied to the construction of new roads for subdivisions on Norfolk Island that require a development approval.

5. Application of this Development Control Plan

- (1) This plan applies to all land on Norfolk Island to which the Norfolk Island Plan 2002 applies, where a subdivision of land will include a road reserve to serve new portion(s) in a subdivision.
- (2) This plan does not apply to existing public or private roads.

- (3) The applicable provisions of this plan will be applied as conditions of approval for a:
 - (a) development application for any use or development;
 - (b) subdivision development application under the *Subdivision Act 2002*; or
 - (c) road project development application under the *Roads Act 2002*.
- (4) Standards for road construction will be in accordance with the scale of development and the type of road to be constructed. Approval of the development application, subdivision development application or road development application will require compliance with the standards for road design and construction that are determined for that particular project or development as conditions of approval under section 12 of the *Roads Act 2002*.
- (5) Compliance with the controls in Part B of this plan (e.g. carriageway width, road reserve width) may be relaxed in certain exceptional circumstances, following consideration of:
 - (a) Topography;
 - (b) Length of the road;
 - (c) Condition, width, etc, of road(s) immediately adjacent to proposed roads; and
 - (d) Number of properties served by the proposed road and whether there is scope for further subdivision of land.

6. Relationship between this Development Control Plan and any other plans

- (1) This plan is a development control plan under the *Planning Act 2002* and forms part of the Norfolk Island Plan 2002.
- (2) This plan is to be considered in conjunction with the *Planning Act 2002*, *Building Act 2002* and the *Public Health Act 1996*.

PART B – CONTROLS

7. Road Act 2002

The *Roads Act 2002* provides for the opening and closing of public roads, road project development approvals and certification of roads.

It is not necessary to rezone a public road to Road Zone before the road is opened as a public road under the *Roads Act 2002*. Dedication of the land as a public road, irrespective of the zone, allows that land to be opened as a public road and to be used for the purposes of a public road. The land can be rezoned to Road Zone at any time after dedication as a public road.

8. Geometric Road Design Standards

This section sets out the geometric design standards for new subdivision roads. The application of appropriate road design standards is aimed at ensuring that new road alignments adequately provide for safe access to and from properties.

Road alignments and design must be appropriate for the topography and geology of the land. Appropriate provision should be made for public utilities, drainage and where necessary, traffic control devices and pedestrian access.

Speed restriction signs shall be placed at the ends of and main entrances into roads with a design speed less than 50km/h.

The maximum longitudinal gradient on a road in an area of varying topography might result in the need for cut and fill earthworks. The width of the road reserve may need to be increased to provide for batters and cuttings and the required clearance to the boundary between the road reserve and adjoining properties. Attention should be given to ensuring that potentially hazardous features are visible to the driver and adopting traffic engineering measures that will help a driver avoid errors of judgement.

The road reserve shall accommodate curves that meet the specified Minimum Curve Radii. Designers should ensure that, for a given design speed, the minimum radius of curvature is such that drivers can safely negotiate the curve. Curves that progressively tighten produce an uncomfortable sense of disorientation and alarm, as can sudden reverse curves that drivers cannot anticipate.

Where curves in the road alignment restrict vehicle speed the relationship between the radius of the curve and the desired vehicle speed is given in Table 1.

Table 1 **Speed/Radius Relationship.**

Desired Vehicle Speed (km/hr)	Curve Radii (m) on Road Centreline	
	Curvilinear Alignment (no tangents)	Isolated Curve Alignment (with tangent sections)
20	15	10
25	20	15
30	30	20
35	50	30
40	90	40

Benching of the batter on the inside curve could be employed as a means of avoiding widening of the road reserve width. The driver can see oncoming traffic or obstructions over the bench, maintaining minimum sight distance. The height of any

such bench should be at least 300mm lower than the line of sight, to allow for growth of grass.

Roads that are designed for speeds of 40km/hr or less and with curves of 60m radius or less generally have the pavement crowned on a curve instead of superelevation.

The three dimensional coordination of the horizontal and vertical alignment of a road should be aimed at improved traffic safety and aesthetics. The following principles should be applied:

- The design speed of the road in both horizontal and vertical planes should be of the same order.
- Combined horizontal and vertical stopping sight distance and minimum sight distance should be considered three dimensionally.
- Sharp horizontal curves should not be introduced at or near the crest of a vertical curve. A horizontal curve should leave the vertical curve and be longer than the vertical curve.
- A short vertical curve on a long horizontal curve or a short tangent in the gradeline between sag curves may adversely affect the road's symmetry and appearance.

Roads having both horizontal and vertical curvature should be designed to conform with the terrain to achieve desirable aesthetic quality and harmony with the landform.

Sustained crossfalls should not exceed 4%, although up to 6% may be used where unavoidable. The rate of change of crossfall should not exceed: 6% per 30m for through traffic; 8% per 30m for free flowing turning movements; or 12% per 30m for turning movements for which all vehicles are required to stop. The crossfall on a distributor road should take precedence over the grade in side roads.

The design of intersections or junctions should allow all movements to occur safely without undue delay. Where an intersection with an existing public road is required to serve a development complete reconstruction of the intersection will be necessary where the speed environment and irregularity of the existing road pavement may endanger the safety of traffic in the locality.

Intersections should be generally located in such a way that:

- The roads intersect preferably at 90° and not less than 70°.
- The landform allows clear sight distance on each of the approaches to the intersection.
- The minor road intersects the convex side of the major road.
- The vertical grade lines at the intersection do not impose undue driving difficulties.
- The vertical grade lines at the intersection allow for direct surface drainage.
- Adequate stopping and sight distances are provided for horizontal and vertical curves.

Adequate provision should be made for vehicles to turn around at the end (termination) of the road. The minimum cul-de-sac radius shall be 6m seal.

Table 2

Minimum Design Standards for new roads serving:

- (a) **No more than 10 existing and potential portions (i.e. the maximum potential number of portions served by the new road based on the subdivision standards for the relevant zone(s); or**
- (b) **Residence – Accommodation Unit(s) or Residence – Multiple Dwelling(s) or Residence – Dual Occupancy/ies that comprise, or have the potential to comprise, a number of units, which combined with the total in (a) above, would result in a number no more than 10; or**
- (c) **Minor commercial, light industrial or other types of development which, when combined with the portions and/or residences served by the new road (i.e. (a) and (b) above), would not result in a volume of traffic greater than that generated solely by the limits imposed under (a) or (b).**

Design Element	Standard Required	Rationale
Single lane: carriageway width	4m sealed	Must be sealed for dust abatement.
Shoulder width	3m unsealed	To provide for passing vehicles. May also be used as a corridor for public utilities.
Minimum Total Road Reserve	10m	Minimum to allow for installation of public utilities, drainage and traffic control devices and for pedestrian movement.
Clearance between boundary of road reserve and tops of cuttings and toes of batters	3m	Cuttings and batters shall be accommodated within the road reserve. Adequate clearance between the tops of cuttings and the toes of batters and the boundary between the road reserve and adjoining properties.
Maximum Longitudinal Gradient	16%	Safe sight distances, traction and property access. Approval of steeper grades up to 20% over a maximum distance of 30m may be given in extreme cases, subject to specific design requirements.
Crossfall	4%	To facilitate drainage run-off, while being of a gradient not affecting safety and property access. Up to 6% if unavoidable.
Maximum slope of batters and cuttings	1:1	To maintain slope stability, prevent erosion and facilitate re-grassing.
Design Speed	40km/h	Maximum safe speed.
Safe Stopping Sight Distance	60m	Minimum line of sight distance measured from the driver's eye, 1m above the road to an object 150mm above the road in the centre of the same traffic lane.
Minimum horizontal curve radius	20m	Visibility may be restricted on horizontal curves due to an obstruction on the inner side of the curve.
Minimum vertical curve radius	25m	Visibility may be restricted on vertical curves due to an obstruction beyond a curve crest, or as with a sag curve, beyond the headlight illumination on the ascending side of the road.
Kerb Type		Layback or grass swale

Sources: Road Planning and Design Manual, Qld Main Roads; AUSPEC Geometric Road Design (Urban and Rural) D1: Northern Rivers – Local Government, February 1997.

* The applicability of these standards shall be determined for each development application, taking into consideration the particular requirements of that proposed development together with the topography and geology of the site.

Table 3
Minimum Design Standards for new roads serving land and developments beyond the limits applicable for Table 2.

Design Element	Standard Required	Rationale
Single lane: carriageway width	6m sealed	Must be sealed for dust abatement.
Shoulder width	5m unsealed	To provide for passing vehicles. May also be used as a corridor for public utilities.
Minimum Total Road Reserve	16m	Minimum to allow for installation of public utilities, drainage and traffic control devices and for pedestrian movement.
Clearance between boundary of road reserve and tops of cuttings and toes of batters	3m	Cuttings and batters shall be accommodated within the road reserve. Adequate clearance between the tops of cuttings and the toes of batters and the boundary between the road reserve and adjoining properties.
Maximum Longitudinal Gradient	16%	Safe sight distances for design speed. and property access issues. Approval of steeper grades up to 20% over a maximum distance of 30m may be given in extreme cases, subject to specific design requirements.
Crossfall	4%	To facilitate drainage run-off, while being of a gradient not affecting safety and property access. Up to 6% if unavoidable.
Maximum slope of batters and cuttings	1:1	To maintain slope stability, prevent erosion and facilitate re-grassing.
Design Speed	40km/h	Maximum safe speed.
Safe Stopping Sight Distance	60m	Minimum line of sight distance measured from the driver's eye, 1m above the road to an object 150mm above the road in the centre of the same traffic lane.
Minimum horizontal curve radius*	20m	Visibility may be restricted on horizontal curves due to an obstruction on the inner side of the curve.
Minimum vertical curve radius*	25m	Visibility may be restricted on vertical curves due to an obstruction beyond a curve crest, or as with a sag curve, beyond the headlight illumination on the ascending side of the road.
Kerb Type		Layback or grass swale

Sources: Road Planning and Design Manual, Qld Main Roads; AUSPEC Geometric Road Design (Urban and Rural) D1: Northern Rivers – Local Government, February 1997.

* The applicability of these standards shall be determined for each development application, taking into consideration the particular requirements of that proposed development together with the topography and geology of the site.

9. Road Standards

The applicability of a particular standard shall be determined for each development application, taking into consideration the particular requirements of that proposed development together with the topography and geology of the site.

Australian Standards reference numbers to be used in conjunction with other road work specifications.

Road Engineering Element	Australian Standards Reference	Norfolk Island Requirement (if different from AS)
ROAD CONSTRUCTION		
Earthworks Specification for earthworks and formation (including surface design) General Earthworks	Refer to AS2187 Parts 1 & 2, 1152 Refer to AS2868 – 1986	
Bituminous Surfacing Specification for supply and delivery of residual bitumen Specification for supply and delivery of bitumen emulsion (cationic and anionic)	Refers to AS2008 – 1980 AS2341 - 1992 Refer to AS1160 AS2341	
DRAINAGE Drainage, Retaining Structures and protective treatments		Talbot's formula shall be applied: see Tables below.
FENCING General	AS2423 — 1991	
TRAFFIC MANAGEMENT Specification for control of traffic at road and bridge works Specification for road marking paint Specification for plastic guide posts Specification for raised pavement markers Specification for reflective post delineators Road Furniture Road furniture Grid construction	Refer to AS1742.3 AS1342.3 AS1650 AS1627 AS1143 Refer to AS1433 AS1580 Refer to AS1906 Refer to AS1906 AS1743 - 2001 AS1111 – 1980 AS1906 – 1981 Refer to AS1348.1 – 1986	
DRIVEWAYS		
PARKING		
UTILITIES		
Roadside and Public Reserves Vegetation control Litter bins and stands	Refer to AS1348.1 ASK126 – 1984	
Concrete Procedure for design of Portland cement concrete construction	Refer to AS1012 AS1129 AS1130 AS1315 AS1317	

**DRAINAGE TABLE FOR SIZING CULVERTS
TALBOT'S FORMULA
(2.5 inches/hour rainfall)**

AREA (sq feet) REQUIRED FOR WATERWAY

No. of Acres	Steep Slopes Heavy Soils Moderate Cover	Moderate Slopes Heavy to Light Soils Dense Cover	Gentle Slopes Agricultural Soils & Cover
2	0.8	0.6	
4	1.4	1.0	
6	1.9	1.4	0.9
8	2.3	1.7	1.2
10	2.7	2.0	1.4
20	4.6	2.5	2.3
30	6.3	4.8	3.2
40	7.8	5.9	3.9
50	9.3	7.0	4.6
60	10.7	8.0	5.3
70	12.0	9.0	6.0
80	13.3	10.0	6.6
90	14.5	11.0	7.2
100	15.8	11.8	7.8
150	21.2	16.0	10.7

CULVERT SIZES FOR WATERWAYS LISTED ABOVE

Area of Waterway (sq ft)	Diameter of Round Pipe (inches)
1.25	15
1.80	18
3.10	24
4.90	30
7.10	36
9.60	42
12.60	48
15.90	54
19.60	60
23.80	66
28.30	72

Appendix A – References and Australian standards

RTA – Sprayed Sealing Guide, Edition 2
NAASRA – Part 6, Roundabouts
NAASRA – Part 8, Traffic Control Devices
NAASRA – Part 11, Parking
NAASRA – Part 12, Roadway Lighting
AUSTROADS 1992 – Pavement Design Manual
Queensland Main Roads – Standard Drawings Roads, No.30 12/00
AUSPEC Geometric Road Design (Urban and Rural) D1: Northern Rivers – Local Government,
February 1997