

**MANGO HILL INFRASTRUCTURE
DEVELOPMENT CONTROL PLAN**

Precinct Plan No. 038

for

Western Residential Precinct North 038

North Lakes Development

13 November 2009

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1.0 Introduction and Statutory Context.

- 1.1** The Mango Hill Infrastructure Development Control Plan (DCP) provides a process for development of land in the DCP area and for the creation of a Precinct within any part of the DCP area chosen by the Principal Developer.
- 1.2** The Principal Developer must prepare and lodge a Precinct Plan with Council for approval in accordance with the relevant provisions of the DCP.
- 1.3** This document constitutes the Precinct Plan for the **Western Residential North Precinct 038** (Precinct Plan).
- 1.4** The area and boundaries of this Precinct are notional only. The general location of the Precinct within the DCP Structure Plan is shown on *Figure 1 – Planning Context*. The Precinct is bounded by
- (i) North South Arterial Road to the north;
 - (ii) North Lakes Golf Course to the east; and
 - (iii) Western Residential South Precinct 037 to the south;
 - (iv) Endeavour Boulevard along the western boundary;
- 1.5** This Precinct Plan must be read together with and in the context of the DCP.
- 1.6** The DCP, approved precinct plans and approved sector plans are to be read in conjunction with the planning scheme and Council’s local laws, policies and codes and to the extent the DCP, precinct plans and sector plans do not modify provisions of the Council’s planning scheme, local laws, policies and codes they will apply to the DCP area.
- 1.7** To the extent the provisions of the Council’s planning scheme, local laws, policies or codes are modified by the DCP, precinct plans or sector plans, then the provisions of the DCP, the precinct plans or sector plans will prevail.
- 1.8** Development in the precinct must comply with the provisions of the Precinct Plan.

2.0 Structure Plan Context

- 2.1 Western Residential North Precinct is located in the western part of the DCP area. The Precinct is comprised of Urban Residential Area land use element. It is bounded by the North South Arterial Road to the north; Residential Precinct Plan 037 to the south, North Lakes Golf Course to the east, Mixed Industry Business Area (MIBA) Precinct 030 over Endeavour Boulevard to the west. The location of the Precinct within the Structure Plan is shown on Figure 2.

3.0 General Desired Environmental Outcomes

- 3.1 In relation to the land use element of Urban Residential Area, the DCP states the following general desired environmental outcomes:

“(a) to establish residential villages that have a high level of amenity and sense of community;

“(b) to establish residential villages that are appropriately designed in the context of ecological sustainability and offer a range of dwelling types that are conveniently located with respect to community facilities, open spaces and public transport.”

4.0 Planning Intent

- 4.1 Clause 6.2 of the DCP provides an outline of the planning intent for the Urban Residential Area, including the following Summary

“The urban residential area is intended to provide for a wide range of housing needs in a variety of forms, styles and densities to reflect the prevailing market demands. Residential development will occur in a collection of residential villages reflecting a range of densities being low, standard and medium density. Each village will focus on a centrally located village park. Villages are to be progressively developed having particular regard to the timely, efficient and economic provision of engineering and social infrastructure.”

5.0 Development Concept

5.1 Development Context

The Precinct's location adjacent to the North Lakes Golf Course and its proximity to the Town Centre, have strongly influenced the design concept. Key principles to consider in the wider development context of the Precinct are outlined below:

- 5.1.1 A strong sense of arrival to the Precinct will be provided by a widened road reserve treated with character landscaping. The design entry road and surrounding streetscape aims to establish the built form and landscape character for this new residential Precinct through the incorporation of contemporary materials with existing elements.
- 5.1.2 The road pattern will provide enhanced legibility as well as permeable landscape connections with numerous movement and view corridors to the major open spaces within and adjoining the Precinct including the Village and Local Parks.

- 5.1.3** The Western Residential North Precinct is in proximity to the Town Centre Frame and Core with a community centre, child care centre, district playing field, convenience retail and other relevant services, and therefore has removed the need for such facilities to be provided within the Precinct.
- 5.1.4** Vehicular access is proposed from the existing round about on Endeavour Boulevard. This connection will reinforce opportunities for pedestrian and cyclist movements that have been allowed for by the surrounding Precinct plans.
- 5.1.5** Residents of this Precinct will have convenient access to a wide range of higher order retail, commercial, employment, community, educational and recreational facilities within the Town Centre Frame and Core via the comprehensive road, cycleway and pathway system.

5.2 Concept Overview

The Western Residential North Precinct is proposed to be developed as a high quality, residential community comprising medium density residential dwelling types (as anticipated by the DCP). It will integrate the medium density residential accommodation types with the future commercial and community facilities in the adjacent Town Centre Frame, consistent with the DCP, together with areas of parkland and supporting engineering infrastructure.

The planning study, prepared in support of the DCP, envisages that the following community needs will be served by facilities to be established within or in reasonable proximity of the Precinct:

Overview of Assessed Community Service Needs

A range of transport options will need to be provided, with emphasis on reducing dependence on private motor vehicles.

The Precinct Plan shows the Urban Residential land use and other structuring elements in sufficient detail to allow for the preparation of more detailed sector plans. The areas and locations of the various land uses, roadways, intersections, parkland and other elements are indicative only and will be subject to variation following detailed subdivision and engineering design. Consistent with the DCP, it is important that flexibility be maintained for future planning which needs to be responsive to changing requirements of the community and the market-place. Sector Plans to be prepared in the future will provide more detail on the precise locations of roads and the various types of residential development.

6.0 Precinct Plan

6.1 Introduction

Figure 3, Western Residential Precinct North Plan Map, provides a detailed interpretation of the land use planning and development intents for a part of the North Lakes Structure Plan. The key principles which have determined the urban design structure for the Precinct plan are summarised on Figure 4 and explained below:

6.2 Land Use Pattern

6.2.1 Background

In accordance with section 2.3.2(f) of the DCP, the desirable land uses are to be identified in generic terms during the preparation of this Precinct plan. The desirable land uses are described below. The Sector Plans stemming from this Precinct Plan will finalise the specific land use rights as required by section 2.4.9 of the DCP.

6.2.2 Urban Residential

A residential village is proposed with an overall capacity to accommodate approximately 320 dwellings or some 730 residents. The Precinct is to provide townhouse units and/or other forms of medium density residential development. Other Residential types including traditional, small lot housing/duplex and apartments to a maximum of 40 units/ha may be considered instead or in conjunction with Town houses. Rear lane access may also be provided to some small lots, which are typically located adjacent to parks, to achieve a distinctive architectural style and streetscape by removing garages and garbage collection to the rear of housing.

6.2.3 Open Space

The provision of open space in the Precinct is influenced by neighbouring elements of Major Open Space including Tributary B to the north-west and the North Lakes Golf Course to the east. In the context of the major open spaces both within and in proximity to the Precinct, lower order open spaces are also planned within the Precinct. To ensure residents are provided with convenient and efficient access to these open space areas a pedestrian/cyclist network in the form of open space corridors will provide access to major open space areas outside the Precinct.

Local open space will be provided in the form of notionally located Village and Local Parks serving adjacent housing in accordance with the residential planning principles established in the DCP. It is noted that Parks located outside the Precinct will supplement the Precinct's local open space facilities. Consequently, it is considered that Village Park and Local Park facilities will be located within 400 metres and 200 metres, respectively, of most residents.

The residents of the Precinct will therefore be well serviced by all levels of open space.

6.3 Summary of Assessed Needs

The following table (Table 1) provides an indicative summary of the key community needs and the services and facilities to be provided in reasonable proximity of the Western Residential North Precinct.

Table 1: Indicative Summary of Assessment Needs

Community Service Needs	Development to Provide
A range of transport options will need to be provided, with emphasis on reducing dependence on private motor vehicles.	<ul style="list-style-type: none"> • An effective community design to promote the viability of public transport. The Precinct is adjacent to a bus route. • Local accessibility to facilities and services, especially by pedestrian routes and cycle ways. • A developing regional public transport system to serve the growing residential population of the DCP area.
Housing diversity is essential	<ul style="list-style-type: none"> • A range of lot sizes and dwelling types, including town houses, and possibly rear lane housing, duplex dwellings, and detached houses and the like.
Provision will need to be made for the child care needs of the population.	<ul style="list-style-type: none"> • A range of long day and occasional child care services provided in local community facilities nodes and in the town centre located nearby.
Schools need to be provided for the residents of the DCP area and surrounding areas. Schools should be located adjacent to open space.	<ul style="list-style-type: none"> • Within the southern part of the DCP: • Existing and provision of facilities for pre-school and primary education. • An existing state and private primary/secondary school. • Possible shared use of facilities to minimise duplication and increase community accessibility. • Integration of some social infrastructure facilities may be possible, eg. child care, ministry centres and libraries.
Local community facilities and services should be integrated within Urban Residential Areas.	<ul style="list-style-type: none"> • Facilities and services, eg. child care and local shopping, provided in the northern, southern and central local community facilities nodes (as identified on the DCP Structure Plan) and Town Centre.
Access for people with disabilities.	<ul style="list-style-type: none"> • Facilities which take account of the accessibility needs of people with disabilities.
Playgrounds	<ul style="list-style-type: none"> • Provide meeting places for older children and the aged in Park.
Structured recreation facilities should also be located in or adjoining district parks or schools (opportunity for co-location).	<ul style="list-style-type: none"> • Structured recreation facilities outside the Precinct towards the north and east.

6.4 Transport and Circulation System

Consistent with the DCP Structure Plan, the internal road network is based on a modified grid layout. Roads are to be generally located along ridgelines or typically running along or perpendicular to the natural contours, wherever practicable, providing high connectivity throughout the Precinct. Residential development will be structured around, and defined by, a pattern of generally north-south and east-west running streets encouraging visual linkages, connectedness and continuity of movement from surrounding residential areas.

Special streetscape treatments along the internal roads will promote the concept of a landscaped environment, thereby enhancing the driving experience. Key entry points may also incorporate gateway signage and ornamental landscaping to create a sense of community identity.

The amenity of the Precinct is to be preserved by discouraging the amount of through traffic by the implementation of special streetscape treatments and traffic management techniques. The road network will be planned so that through traffic is generally limited to the sub-arterial and arterial roads associated with the wider road network.

The main external road connections (refer Figure 6) to the Precinct will be provided via Endeavour Boulevard.

Variations in the horizontal alignment of roadways within the Precinct and limited use of traffic management devices, together with the landscape treatment of verges and the use of special threshold treatments, will assist in controlling vehicle speed within the Precinct, particularly in local access streets.

All residents of Western Residential North Precinct will be within 400 metres (5 minutes walking time) of a local bus route. Endeavour Boulevard is a bus route.

Pedestrian and bicycle circulation within and through the Precinct is shown in notional terms on the Precinct Plan Map. Recreational pedestrian / cyclist pathways will be provided within the Precinct. These pathways will provide important linkages to surrounding residential villages and other major commercial, community and employment facilities throughout the DCP area.

6.5 Open Space and Landscape Concept

The landscape setting of the Precinct will be established to ensure its integration into the surrounding local and regional landscapes. Open space provisions within the Precinct, together with streetscape treatments, will form part of the comprehensive and integrated system of open space and landscaping planned for the DCP area, fulfilling aesthetic, recreation, transportation and environmental management functions. The principal spatial elements or key areas of the Landscape Concept Plan for the Precinct are illustrated on Figure 5 and summarised as follows:

Parks: Parks will be placed at a convenient location within the Precinct and provide landscaped open space focus for nearby residents. In addition the North Lakes Golf Course located along the eastern boundary will provide additional amenity. In accordance with the MHIA, parks will provide a range of recreational opportunities which could include play structures, picnic facilities, seating and drinking fountains. Stormwater Management devices will be incorporated within the Open Space.

Streetscape Planting: The streetscape treatments of local access roads will create a cohesive and positive impression of the development, with selection of plant materials for roadways based on aesthetic, practical, maintenance and safety considerations, and the intended scale and characteristics of each road. In particular, widened road reserves for collector streets within the Precinct may be provided to allow for additional special landscape treatments and visual linkages to the water body, as well as ensuring a meaningful way of reinforcing different road types in the road hierarchy.

The resulting open space system and streetscape treatments within and adjacent to the Precinct should have diversity and interest for a wide range of users while at the same time serving as a mechanism for restoring the DCP area's degraded landscape environment.

The Landscape Concept Plan promotes the planting of predominantly native species to reflect the original natural setting of the DCP area. This planting strategy will establish a landscape framework which enhances habitat values, reduces maintenance and water requirements, influences the built form in terms of visual integration and creates a landscaped environment for residents and visitors. Exotic and flowering species may be used primarily for special colour accents at significant entry points or as feature planting within parks.

6.6 Engineering Services

6.6.1 Water Supply

A trunk water main is located within the proposed Park/ Open Space to the southern portion of the Precinct and will service the Western Residential North Precinct. Individual lots will be served by a network of reticulation mains designed in accordance with Council's Design Manual and Policy WS.W13.

6.6.2 Sewerage

The sewerage system for the Precinct will be based on a gravity reticulation strategy which generally follows similar alignments to stormwater drainage paths for the trunk connection system.

The Precinct will be connected to the trunk gravity systems referenced as TM4A gravity trunk sewer mains referenced GTS4 on the Sewerage Headworks Plan (refer Figure 7).

6.6.3 Energy

Electricity supply will be provided by Energex or another appropriate supplier of electricity. The primary supply to the area is ultimately proposed to be augmented by a major high voltage line located along the North-South Arterial Road and via Anzac Avenue to a sub-station located outside the Precinct. The Precinct will be serviced by underground power to pad-mounted transformers located within the local road reserves.

Gas mains have been constructed along Endeavour Boulevard and will be extended to service the Precinct. An underground gas supply will be available to all lots.

Electrical and gas services will generally follow the alignment and timing of the Precinct's internal road network.

6.6.4 Communications

Communications and cable services will be installed underground. The network will be installed at each stage of subdivision development. Communication towers are not proposed to be located within this Precinct.

Communications services will generally follow the alignment and timing of the Precinct's internal road network.

6.7 Stormwater Management

Stormwater drainage in the Precinct will be handled by a conventional system of piped drainage in lots and roads. The system will be designed in accordance with Council's Design Manual and the Stormwater Management Plans for Tributary B as approved by Council. At appropriate locations the major drainage will be fed through a system of gross pollutant traps, stormwater filtration wetlands and detention basins as part of an overall stormwater management strategy to manage the impacts of development on stormwater flows and quality before discharging from the DCP area into adjoining land.

8.0 Environmental Management Objectives

8.1 Stormwater Discharge

Objectives

To ensure that stormwater infrastructure, constructed within the catchments of Tributary B are designed to meet agreed discharge standards for specific stormwater pollutants and that peak flow regimes are at pre-development levels.

Performance Indicators

Water discharged must meet the requirements of Environmental Protection Policy (EPP) Water, and in particular, must be designed to achieve the following Annual Mean Concentrations at Chelmsford Road:-

Total Phosphorous - 0.1 mg/l

Total Nitrogen - 0.75 mg/l

Suspended Solids - 50 mg/l

The design parameters for peak flows must not exceed the values in the Stormwater Management Plan approved by Council.

8.2 Flora & Fauna

Objectives

To re-establish fauna habitats and wildlife corridors.

To re-establish stands of native vegetation.

Performance Indicators

Retention of any significant remnant stands of native vegetation in areas of open space where reasonable and practicable.

Establishment of new stands of appropriate native vegetation which incorporates food species for indigenous fauna.

8.3 Air Quality

Objectives

To ensure people are protected from undue pollution of the air from smoke, dust, odour, fumes and gases generated by development within the Precinct.

Performance Indicators

Air quality must meet the requirements of Environmental Protection Policy (EPP) Air.

During construction of the Precinct:

- complaints in excess of one per week may indicate unacceptable work practices. For the purposes of this clause, a complaint is one resulting in the issue of an abatement notice under EPP (Air); and
- construction activities are to comply with Council's Policy LP32.

8.4 Noise

Objectives

To ensure noise generated is not unreasonable.

Performance Indicators

Noise generated from development is reasonable as provided by the Environmental Protection Policy (EPP) Noise.

Noise generated from development which is unreasonable is abated as required by EPP (Noise).

During construction of the Precinct, infrastructure complaints in excess of one per week may indicate unacceptable work practices. For the purposes of this clause, a complaint is one resulting in the issue of a noise abatement notice under EPP (Noise).

Provision of traffic noise amelioration in accordance with Council Policy LP25.

8.5 Lighting

Objectives

To ensure that lighting associated with development does not create a nuisance.

Performance Indicators

No person will cause, carry out or erect a light source in such a manner that light emanating from the source is a nuisance.

All lighting other than public lighting (e.g. road lighting) is to comply with AS4282-1997 Control of the obtrusive effects of outdoor lighting. The curfew hours applicable to this Precinct are to be 10pm - 6am, unless otherwise varied by a sector plan or Council resolution.

9.0 Special Design Criteria

During the course of development and as contemplated by the DCP, variations to Council's existing development standards are anticipated and will be considered on their technical merits with reference to the intents and performance criteria outlined in previous sections of this Precinct plan. Technical details and supporting information on design variances will be recorded in Council's North Lakes Register of Alternative Acceptable Design Solutions.

10.0 Infrastructure Obligations of the Principal Developer

10.1 Overview of Infrastructure Obligations

The infrastructure required to be provided by the principal developer to serve the Precinct includes internal and external infrastructure to be provided in accordance with the Mango Hill Infrastructure Agreement 1999 (MHIA) and agreements made with the State Government in accordance with the DCP. Initial infrastructure works have been completed as part of development of adjacent residential Precincts. The infrastructure obligations relevant to the Western Golf Residential South Precinct are summarised as follows:

10.1.1 Roads

Construct the following roads including carriageways, stormwater drainage, verges, bus setdowns, footpaths, bikeways, landscaping, traffic control devices and street lighting. Any reference to initial construction in this section is a reference to construction approved by Council in accordance with the rezoning conditions and the MHIA.

- 1 All internal collector roads and access streets; and
- 2 Bikeways and pathways, including commuter and recreational bikeways generally as shown on Figure 4, in accordance with the MHIA.

The construction of the abovementioned infrastructure to the final standard is to be undertaken in accordance with the staging and timing outlined in the MHIA. The initial standard of construction referred to above will be undertaken to suit the rate of development of the Precinct. Where initial construction is not stated, the road is to be constructed to the standard described above to suit the rate of development of the Precinct.

10.1.2 Water

- 1 Construct internal reticulation systems to service all properties in the Precinct.
- 2 Construct a water supply network within the DCP area, including those sections of the mains shown on Figure 6, necessary to service the anticipated demand in the Precinct; and

- 3 Provide contributions towards water headworks and bulk water supply in accordance with the MHIA.

10.1.3 Sewerage

Construct all internal sewerage systems to service the properties in the Precinct and make contributions towards sewerage headworks and unless otherwise agreed with Council:

- 1 Construct the trunk gravity main TM4A from the connection point with the internal sewerage system to the existing gravity trunk sewer main GTS4;
- 2 Construct the trunk gravity main TM4A from the connection point with the internal sewerage system to the proposed gravity trunk sewer main GTS4 as shown on *Figure 7 – Sewerage Headworks*;

10.1.4 Stormwater

- 1 Construct stormwater management works progressively in accordance with the Stormwater Management Plans for Tributary B as approved by Council; and
- 2 Construct stormwater drainage systems to roads, parks and lots as required by the MHIA and Council's Design Manual.

10.1.5 Park

- 1 Provide one Village Park as shown on Figure 3;
- 2 Provide Park Enhancement Works in all parks.

10.1.6 Electricity Supply and Lighting

- 1 Provide underground electricity distribution to all properties within the Precinct to Energex (or another appropriate supplier of electricity) and Council standards;
- 2 Provide public lighting to all roads, streets, parks and other public areas and facilities within the Precinct to Energex (or another appropriate supplier of electricity) and Council standards; and
- 3 Provide high voltage electricity services to service the Precinct to Energex (*or another appropriate supplier of electricity*) and Council standards.

10.1.7 Communications

- 1 .Arrange for the installation of underground telephone communications services for all properties in the Precinct.

10.2 State Government Infrastructure Requirements

10.2.1 There are no items of State Government infrastructure to be provided by the principal developer in conjunction with the development of the Precinct.

10.2.2 The principal developer must contribute towards the cost of providing kerbside infrastructure associated with the public transport system. Such contribution is to be in accordance with the agreement with the State Government.

10.3 Infrastructure Affected by Precinct Development

10.3.1 The development of this Precinct may place demands on the following infrastructure:

- 1 Roads external to the DCP area and accessing to the Precinct;
- 2 Water supply infrastructure;
- 3 Sewerage infrastructure;
- 4 Stormwater;
- 5 Parks;
- 6 Community facilities;
- 7 Electricity and gas supply;
- 8 Communications systems; and
- 9 State Government infrastructure.

10.3.2 The infrastructure described in clauses 10.1 and 10.2, together with the obligations of the principal developer under the MHIA, is required to mitigate the adverse affects on such infrastructure.

10.4 How the Required Infrastructure Relates to the Infrastructure Agreements

10.4.1 The MHIA describes the infrastructure which must be provided by the principal developer as part of its obligations to provide infrastructure, as envisaged by Chapter 12 of the DCP. The works described in clause 10.1 are the principal developer's obligations under the MHIA.

10.4.2 Infrastructure Agreements have been entered into by the principal developer with the Department of Main Roads and Queensland Transport. Any infrastructure requirements of those State Government Departments relating to this Precinct will be provided in accordance with the existing agreements.

10.5 Preliminary Program for Infrastructure Provision

10.5.1 The principal developer will provide all the infrastructure referred to in clause 10.1 at times to satisfy the requirements of the MHIA which provides for the infrastructure to be constructed to meet the rate of development in the Precinct. Initial infrastructure works are anticipated to be constructed by February 2010. The completion of the roadworks where approved by Council will be as described in clause 10.1.1 and the MHIA.

Except as described elsewhere in this clause, no other works depend on the provision of this infrastructure.

10.5.3 Council is to use its best endeavours, including its powers of resumption if lawful, to obtain all necessary rights to permit the construction of water and sewerage infrastructure if such infrastructure is constructed on land external to the DCP area over which Council does not have such rights.

10.6 Estimated Water and Sewerage Demands

10.6.1 As required by the MHIA, the principal developer states as follows:

- 1 For the purpose of assessing water supply capacity, the estimated number of Equivalent Tenements for this Precinct is 108.54ET;
- 2 For the purpose of assessing sewerage capacity, the estimated number of Equivalent Persons for this Precinct is 434.16 EP.