

**MANGO HILL INFRASTRUCTURE  
DEVELOPMENT CONTROL PLAN**

**Precinct Plan No. 031**

**for**

**Northern Residential South Eastern Precinct**

**North Lakes Development**

**16 February 2010**

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## **1.0 Introduction**

- 1.1 The Mango Hill Infrastructure Development Control Plan (DCP) provides for the creation of a Precinct within any part of the DCP area chosen by the principal developer. The principal developer may then prepare a Precinct Plan and lodge it with Council for approval in accordance with the relevant provisions of the DCP.
- 1.2 The purpose of a Precinct Plan, as provided for in the DCP, is to show in indicative terms more detail for a planning area within one land use element of the DCP Structure Plan or across a number of elements. This planning area is created to allow for a more detailed interpretation of a part of the structure plan.
- 1.3 The principal developer has created a Precinct to be known for planning purposes as the *Northern Residential South Eastern Precinct*. This document constitutes the Precinct Plan for the Northern Residential South Eastern Precinct.
- 1.4 The location of the Precinct within the DCP area is shown on Figure 1. The area of the Precinct is approximately 34.36 hectares although, consistent with DCP requirements, the areas and boundaries shown on the plan are only notional.
- 1.5 Where a discrepancy arises between the performance criteria of this Precinct Plan and the requirements of the DCP or Mango Hill Infrastructure Agreement (MHIA), the requirements of the DCP or MHIA will prevail.

## **2.0 Structure Plan Context**

Northern Residential South Eastern Precinct is located in the north western area of the DCP area, the eastern portion of the Northern Residential Precincts. The Precinct is comprised of Urban Residential Area and Major Open Space Area land use elements. It is broadly bounded by the proposed Precinct 047 to the north, Tributary 1 to the east beyond which is Bridgehaven Residential Precinct (Plan No. 021), Hilltop Residential Precinct (Plan No. 029) to the South and the Northern Residential West Precinct (Plan No. 044) area to the west. The location of the Precinct within the Structure Plan is shown on Figure 2.

## **3.0 General Desired Environmental Outcomes**

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.”*

In relation to the land use element of Major Open Space Area, the DCP states the following general desired environmental outcomes:

- “(a) to provide a comprehensive and integrated system of open space fulfilling aesthetic, recreation, conservation, transportation and environmental management functions for the DCP area”*

In relation to the land use element of Community Facilities, the DCP states the following general desire environmental outcomes:

- “(a) to encourage the provision of an appropriate range of community facilities in convenient locations and in step with residents’ needs, integrated with the overall development of the DCP area;*
- (b) to maximise the use and community benefits of community facilities through the provision of multi-purpose premises, the co-location of uses and establishing high levels of accessibility;*
- (c) to achieve an integrated network of pleasant, safe public places for cultural and social interaction.*

## **4.0 Planning Intent**

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.”*

The Major Open Space Area is intended to provide a “...full range of open space opportunities will be conveniently available to the community as it develops”. Within the Local Community designation, it is intended that community facilities would be provided that “...primarily intended for the residents within the DCP area...” and in particular, the immediate residents.

## **5.0 Development Concept**

### **5.1 Development Context**

The location of a major Tributary (Trib A) within the Precinct and the proximity of future district sporting fields, Major Open Space Areas including Tributary 1 and the North Lakes Golf Course, the adjacent MIBA Area and the Local Community Facilities, 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 high level of connectivity of the Precinct is proposed via the sub-arterial or trunk collector road being the MIBA Connection Road (Aurora Boulevard). Located along the southern Precinct boundary, this road will integrate with established sub-arterial roads including Bounty Boulevard and the North South Arterial.
- 5.1.2 This high connectivity will be further expanded as development of this Precinct includes connections with the North South Arterial Road which is located within the Precinct along the western boundary providing links with the future MIBA and town centre employment nodes.
- 5.1.3 This road pattern will also 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, Linear Parklands and district playing fields.
- 5.1.4 The major open space area running through the centre of the Precinct and network of different park types across the Precinct will provide important structural landscape elements and open space focal points for each sub-Precinct of housing development.
- 5.1.5 The design of residential areas in the northern portion of the Precinct needs to be cognisant of the potential industrial development to the north of North Lakes through the provision of Open Space/park, roads and larger lot types/ or lower density.
- 5.1.6 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 Hilltop Local Community Facilities node and North Lakes Town Centre via the comprehensive road, cycleway and pathway system.

## **5.2 Concept Overview**

The Northern Residential South Eastern Precinct is proposed to be developed as a high quality, residential community comprising a mix of residential dwelling types. It will integrate a range of low to medium density residential dwelling types with a range of active and passive recreational open spaces 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.
- Housing diversity is essential.
- Provision will need to be made to largely self contain the child care needs of the population of the DCP area.
- Local community facilities and services should be integrated with Urban Residential Areas

- Playgrounds are to be provided.
- Structured recreational facilities should also be located in or adjoining district parks or schools (providing possible opportunities for co-location).

The development concept for the Precinct will include:

- A residential village which has capacity to accommodate approximately 250 dwellings or some 700 residents;
- The design of residential areas in the northern portion of the Precinct needs to be cognisant of the potential industrial development to the north of North Lakes through the provision of Open Space/park, roads and larger lot types/ or lower density;
- A number of major open space areas including the district playing fields. This area is a key component to the open space network within the DCP area and is linked to the balance of the DCP area by Major Open Space (Tributary 1 and A) to the east and west.
- Convenient access for residents to major open space areas both within the Precinct and in neighbouring Precincts, including Tributary A located in the west of the Precinct, Tributary 1 located adjacent to the eastern Precinct boundary and the future District Sporting Fields to the south-east.
- Convenient access for residents to the next level of open space in the form of Village Parks and Local Parks. Village Parks will be located centrally to the Precinct, which are separated by the major open space area being Tributary A. The Village Park will be centrally located with the residential land use element and will be within easy walking distance of most residents. Three Local Parks will supplement the Village Parks and will be located within easy walking distance of residents in the northern and southern portions of the Precinct surrounding. Residents will therefore be served by a range of conveniently located park types.
- An internal road network with a legible geometry providing safe and convenient access for local traffic within the Precinct and to a wide range of planned facilities in nearby Precincts. These include:-
  - (i) The Local Community Facilities node which is to be developed in the Hilltop Precinct to the south;
  - (ii) the nearby Central Open Space Precinct to the south-east which has been developed as a golf course and incorporates east-west pedestrian/cyclist crossings between the Golf Course East 'B' Residential Precinct and future major open space area and urban residential areas in the western part of the DCP area;
  - (iii) the future District Sporting Fields adjoining the Precinct to the east and the private and/or State schools to the south-east (integrated with the convenience centre in the north-eastern corner of the Hilltop Precinct);
  - (iv) future MIBA development to the west; and
  - (v) The North Lakes Town Park and Town Centre development to the south.

Most of the above facilities will be within a 15 to 30 minute walk (i.e. approximately 3.5km radius) of the Precinct.



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, Northern Residential South Eastern Precinct 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 250 dwellings or some 700 residents. The Precinct is to provide for a range of housing choices from traditional to small lot housing and, where appropriate, duplex dwellings, townhouse units and/or other forms of medium density residential development. 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.

It is noted that the whole Precinct has been nominated as Standard and/or Medium Density Residential. It is anticipated that in the development of the Sector Plan for this Precinct, that suitable sites for Medium Density Residential will be determined through assessment against a number of criteria relating to accessibility to open spaces, community facilities and major roads, public transport and pedestrian/cyclist networks. It is expected that generally not more than 20% of the area of the Precinct will be developed for Medium Density Residential purposes.

#### **6.2.3 Open Space**

The provision of open space in the Precinct is influenced by neighbouring elements of Major Open Space including Tributary A within the Precinct on the western boundary and elements external to the Precinct including Tributary 1 to the east, the future District Sporting Fields to the south-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. The higher order major open spaces will include the district playing fields. 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. The Precinct will provide a total of a Village Parks and three Local Parks centrally located to serve the northern and southern portions of the Precinct, being within 400 metres and 200 metres, respectively, of most residents.

In addition, the future District Sporting Fields are proposed to the south-east of the Precinct, which provides an opportunity for active recreation for residents and the wider regional community. The District Sporting Fields may be supported with amenities buildings, clubhouse facilities and car parking.

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 Northern Residential South Eastern Precinct.

**Table 1: Indicative Summary of Assessed 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"> <li>• An effective community design to promote the viability of public transport.</li> <li>• Local accessibility to facilities and services, especially by pedestrian routes and cycle ways.</li> <li>• A bus service will cater for residents of the DCP area and links to the regional public transport system will continue to be expanded.</li> </ul>
Housing diversity is essential.	<ul style="list-style-type: none"> <li>• A range of lot sizes and dwelling types, including detached houses, and possibly rear lane housing, duplex dwellings, townhouses and the like.</li> </ul>
Provision will need to be made for the child care needs of the population.	<ul style="list-style-type: none"> <li>• A range of long day and occasional child care services provided in local community facilities nodes and in the town centre.</li> </ul>
Schools need to be provided for the residents of the DCP area and surrounding areas. Schools should be located adjacent to open space.	<p>Within the southern part of the DCP area and potentially in proximity of the Precinct to the south-east:</p> <ul style="list-style-type: none"> <li>• Existing and provision of future facilities for pre-school and primary education.</li> <li>• A possible primary/secondary school by either the State and/ or a private provider.</li> <li>• Possible shared use of facilities to minimise duplication and increase community accessibility.</li> <li>• Integration of some social infrastructure facilities may be possible, eg. child care, ministry centres and libraries.</li> </ul>
Local community facilities and services should be integrated within Urban Residential Areas.	<ul style="list-style-type: none"> <li>• 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).</li> </ul>
Access for people with disabilities.	<ul style="list-style-type: none"> <li>• Facilities which take account of the accessibility needs of people with</li> </ul>

Community Service Needs	Development to Provide
	disabilities.
Playgrounds	<ul style="list-style-type: none"> <li>• Provide adventure play spaces for 7 - 11 year olds.</li> <li>• Provide meeting places for older children and the aged.</li> <li>• Create larger district parks (i.e. linear park and town park) incorporating a range of activity settings within reasonable proximity of the Precinct.</li> </ul>
Structured recreation facilities should also be located in or adjoining district parks or schools (opportunity for co-location).	<ul style="list-style-type: none"> <li>• Structured recreation facilities outside the Precinct towards the south west and east.</li> </ul>

## 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.

A hierarchy of roadways related to traffic function, including bus movements, is to be adopted in the detailed design. 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:

- Sub-arterial or trunk collector roads forming part of the works associated with surrounding residential Precincts including Hilltop 029 and Bridgehaven 021; and
- The future North-South Arterial Road along the western boundary of the Precinct including a controlled intersection with Boundary Road. Other controlled intersections along the North-South Arterial Road at Endeavour Boulevard, Bounty Boulevard and the MIBA Connection Road form part of Hilltop Precinct Plan 029.

The local collector roads will be designed to link this precinct to adjacent major roads, and ultimately to the Town Centre, and the MIBA. Traffic lights are proposed at the intersection of the North – South Arterial Road to ensure the safe and efficient movement of vehicular traffic along these two major roads. 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.

Most residents of Northern Residential South Eastern Precinct will be within 400 metres (5 minutes walking time) of a local 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. At the local level, residential streets and/or local pathways will provide a network of linkages from homes to the major pedestrian / cyclist system.

## **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:

- *District Playing Fields:* The major playing fields within the DCP area will be provided adjacent to the southeastern boundary. The fields proposed in this precinct will enable greater accessibility to such facilities in the north of the DCP area.
- *Major Open Space:* A major open space area is to form the central focus of the Precinct and will accommodate recreational pedestrian/cyclist pathway and associated parkland facilities. The east-west connections through this open space area will provide convenient pedestrian / cyclist connections between the adjacent residential areas of the Precinct. In addition, an integrated linear open space corridor located along the eastern boundary of the major open space area will provide strong north-south pedestrian / cyclist permeability through the Precinct and connections with adjoining residential, employment and District Sporting Fields.

- *Village and Local Parks:* Village Parks and two Local Parks are proposed, with minimum areas of 5,000 square metres and 2,000 square metres, respectively. These parks will be placed at convenient locations across the Precinct and provide landscaped open space focus for nearby residents. In accordance with the MHIA, the Village and Local Parks will provide a range of recreational opportunities which could include play structures, picnic facilities, seating and drinking fountains.
- *Streetscape Planting:* The streetscape treatments of local collector and access streets 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.
- *Linear Park:* Linear Park adjacent to Tributary A may be included.

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 being constructed along the MIBA Connection Road and will service the Northern Residential East Precinct. This extension to the trunk water main will be built by the principal developer in accordance with the MHIA. 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 TM6, and gravity trunk sewer mains referenced as GTS5 and GTS6 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 Discovery Drive and will be extended to service the Precinct. Gas will be available as an underground supply to individual 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 Tributaries 1 and 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.

## **7.0 Design Intents and Performance Criteria - Urban Residential Area Land Use Element**

*Queensland Residential Design Guidelines (QRDG)*, Queensland Department of Local Government and Planning, provides statements of intent and performance criteria for a range of design elements which are applicable to housing development and residential street design within the Precinct. The QRDG criteria cover the range of urban residential development forms, including detached housing, attached housing (eg. duplex dwellings, townhouses and residential units up to 3 storeys over carparking), and residential components of mixed use projects. Both the QRDG and *AMCORD - a National Resource Document for Residential Development* (the basis of QRDG with modifications to suit Queensland conditions) are recognised by the DCP as providing appropriate design and siting principles for residential development within the DCP area. By adopting this Precinct Plan, Council has resolved to apply the provisions of QRDG to this Precinct and has therefore identified alternative provisions in accordance with Section 34 of the Standard Building Regulation.

The performance criteria outlined in the QRDG are intended to promote best practice in urban residential design and enable more creative and efficient use of land in relation to a wide choice of housing styles. Compliance with these criteria is required for all development works in the Urban Residential Area land use element.

## **8.0 Environmental Management Objectives**

### **8.1 Stormwater Discharge**

#### *Objectives*

To ensure that stormwater infrastructure, constructed within the catchments of Tributaries A and 1, 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. Council may choose to provide lighting for sporting activities in the district playing fields. Surrounding development should acknowledge the use of the district playing fields which may include lighting in the future.

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 Northern Residential South Eastern 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;

- .2 A four lane median divided road (North-South Arterial Road) with provision for a public transport corridor between its intersection with the MIBA Connection Road and Node G and the northern point of the Precinct in accordance with the MHIA. The initial standard of construction will be a two lane road which may be required earlier than the lot turnoff threshold in the MHIA if a transport study demonstrates a need for this facility to provide relief for internal roads in the Precinct. An initial stage may also be work on road verges abutting the Precinct
- .3 Intersections at the intersection points along the above mentioned roads (refer Figure 6) to suit the standard of construction of adjacent roads including, if required, auxiliary left turn, right turn, stand-up lanes, traffic signals and traffic lights at the major intersections of N-S Arterial Road and Boundary Road. The staging of traffic signals may be undertaken in accordance with a timetable approved by Council as per the MHIA; and
- .4 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 8, 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 gravity trunk sewer main GTS6 from the connection point with the internal sewerage system to the proposed GTS5 as shown on **Figure 7 – Sewerage Headworks**;
- .2 Construct the trunk gravity main TM6 from the connection point with the internal sewerage system to the proposed gravity trunk sewer main GTS6.
- .3 Construct an Interim Sewerage Discharge Scheme to cater for sewerage discharge until scheme in points 2 and 4 above is completed, if required.

#### 10.1.4 Stormwater

- .1 Construct stormwater management works progressively in accordance with the Stormwater Management Plans for Tributaries A and 1 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 a Major Open Space Area, two Village Parks and three Local Parks generally as shown on Figure 3;
- .2 Provide the district playing fields that are generally as shown on Figure 3;
- .3 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.
- 10.5.2 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 399.3 ET;
- .2 For the purpose of assessing sewerage capacity, the estimated number of Equivalent Persons for this Precinct is 798.6 EP.