

# **MANGO HILL INFRASTRUCTURE DEVELOPMENT CONTROL PLAN**

**Precinct Plan No. 022**

**for**

**Town Centre Frame “E” Precinct -  
Endeavour Boulevard Southern Frontage**

**North Lakes Development**

**1 December 2009**

(Approved by Council under delegated authority on 03/04/2006 and amended on 1 December 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 **Town Centre Frame “E” Precinct – Endeavour Boulevard Southern Frontage** (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) Endeavour Boulevard to the north;
  - (ii) Lakefield Drive to the east;
  - (iii) Bergin Street to the west; and
  - (iv) North Lakes Drive and the balance of the Town Centre Frame area to the south.
- 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 DCP Interpretation**

### **2.1 STRUCTURE PLAN**

The Precinct is located within the Town Centre Frame area of the DCP as depicted on *Figure 2 – Structure Plan Context*.

*Figure 3 – Precinct Plan Map* and the associated text, provide a more detailed interpretation of the Structure Plan by providing information about the general location and interrelationship of structural elements such as land uses, major roads and open space for the Precinct. The Precinct Plan illustrates the generalised design intent and development layout of the Precinct in accordance with the planning framework set out in the DCP.

### **2.2 DESIRED ENVIRONMENTAL OUTCOMES (DEOS)**

The DEOS of relevance to the Precinct are outlined in the following sections of the DCP:

- Section 5.1 (Town Centre Frame) - section 5.1.1 (a), (b) and (c) and section 5.1.2 (a), (b), (c), (d), (e), (f) and (g);
- Section 10.1 (Transport and Circulation) – section 10.1.2 (a), (b),(d), (e) and (f) and
- Section 11.1 (Environmental Protection) – section 11.1.2 (a), (c), (d) and (e).

This Precinct Plan satisfies the relevant DEOs by providing-

- (i) a range of complimentary employment opportunities, facilities and services that are not provided for in the Town Centre Core, as well as a gradual transition in land use and intensity from the Town Centre Core to the edge of the Town Centre Frame, to reinforce the role of the Core;
- (ii) a high standard of urban amenity through quality siting, design and finish of buildings and structures, suitable advertising signage and extensive landscaping;
- (iii) a high level of flexibility in planning for future development within the Precinct via development which is designed to be easily adapted for a range of alternative uses as circumstances change over time;
- (iv) opportunities to diversify housing in the DCP area by allowing some mixed use development in the Precinct;
- (v) secondary access roads including Lakefield Drive, which provides high levels of pedestrian activity and maximises vehicular, bicycle and pedestrian safety, convenience and efficiency;
- (vi) a high degree of accessibility within the regional transport network through connections to the public transit centre which is expected to be developed to the south of this Precinct, road networks, public transport corridors and pedestrian and cycle networks; and
- (vii) sustainable development initiatives for the management of environmental risks within the Precinct.

## **2.3 PLANNING INTENT**

The Planning Intent of the Town Centre Frame is set out in Section 5.2 of the DCP. This Precinct is intended to provide lower density development than in other areas of the Town Centre Frame and the Town Centre Core, however the density is expected to increase with proximity to the Core. In order to maintain amenity and avoid conflict between uses, consideration is to be given to the transitional role of the Precinct between the predominantly commercial environment of the Town Centre Frame and the lower order residential development to the north of the Precinct.

Land uses are to generally complement the uses within the Town Centre Core and should be integrated in functional and urban design terms with adjacent Precincts. The full range of Town Centre Frame land uses may be considered if such land uses are compatible with the proposed built form.

This Precinct contains Endeavour Boulevard, Bergin Street, Lakefield Drive and part of North Lakes Drive to the south. Each of these roads has a different streetscape, character and traffic function. The planning intent of each of these roads is dealt with in turn below:

### *(i) Endeavour Boulevard Frontage*

The Endeavour Boulevard frontage of the Precinct forms a corridor of development that provides a strong link to the Town Centre Core as well as transitioning in scale and intensity between the Core and the lower intensity residential Precinct to the north of the Precinct. It is envisaged that the predominant land uses along Endeavour Boulevard include medical, retail, commercial, educational, office and mixed-use development. Uses that support, complement and minimise impacts upon the adjacent residential environment (Southern Residential Precinct – Precinct Plan 004) are encouraged along this frontage.

### *(ii) North Lakes Drive & Lakefield Drive Frontage*

North Lakes Drive and Lakefield Drive are located in a functionally and visually prominent part of the town centre. It is an important link between the Town Centre Core and the balance of the Town Centre Frame through from Endeavour Boulevard to North Lakes Drive. The density along this frontage is expected to be higher than in other areas of the Town Centre Frame but with lower levels of activity than the Town Centre Core. Uses located along this frontage should take advantage of the proximity to the Town Centre Core and its highly urbanised and pedestrian friendly environment. Mixed-use developments along with small-scale retail and office uses are encouraged within this area.

### *(iii) Bergin Street Frontage*

Bergin Street frontage divides the Precinct into two (2) portions and provides an additional link between Endeavour Boulevard and North Lakes Drive. The intensity of development along this frontage is expected to be slightly lower than Lakefield Drive as it is located further from the Town Centre Core. This area is encouraged to develop as a mixed-use environment, providing a range of opportunities for retail and business services, community infrastructure, recreation and leisure activities and residential development (above ground floor level).

### **3.0 Development, Planning and Design Principles**

#### **3.1 GENERAL FORM OF DEVELOPMENT WITHIN PRECINCT**

The architecture of any development within the Precinct should be contemporary with variations in building form achieved by the use of rooflines, shading and other features. Where possible, indoor and outdoor spaces should be linked by transition areas. A consistent and modern overall design character is required within the Precinct and is to be achieved through, the integration of building design and urban spaces as well as the use of high quality materials, finishes, colours and details.

Buildings within the Precinct are to exhibit architecture in keeping with the town centre location and are encouraged to be at least two (2) storeys above street level in height. Or include an extended vertical podium or parapet. Any buildings taller than two (2) storeys may be required to be stepped back on upper levels from the frontage creating a podium to reduce shadowing and scale impacts upon the pedestrian streetscape.

In order to strengthen the urban form of the Precinct, buildings located on corner allotments, particularly North Lakes Drive & Lakefield Drive should define the street environment by presenting an alternative façade to each frontage. Corner buildings should have an outward orientated building design and a high quality streetscape urban design character. Unsightly functional elements, including loading docks, waste storage, collection areas, air conditioning, roof plants and plant and building service areas require appropriate screening measures and are to be incorporated into overall building design.

The focal point of the Precinct is to be at the intersection of Lakefield Drive with North Lakes Drive. This corner is to be emphasised through design, height and placement of significant features, whether a building or other element. The feature is intended to assist legibility and strengthen the urban form of the Precinct, as understood from a town planning and urban design perspective.

Shared vehicular access is to be encouraged between neighbouring sites within the Precinct and may be achieved via easement arrangements, if required. Direct vehicular access to sites fronting North Lakes Drive and Endeavour Boulevard is to be restricted to areas that minimise interruptions to traffic flow and maximise vehicular, bicycle and pedestrian safety. Reciprocal left in/left out access arrangements are proposed for Endeavour Boulevard and North Lakes Drive, to reinforce the primary role of these thoroughfares.

Car parking areas should be designed as an attractive setting which integrates paving, landscaping, shading, shade trees and car parking spaces. Car parking is to be unobtrusive and is intended to create minimal interruption to the streetscape and pedestrian routes through siting, landscaping and/or screening. Where car parking areas are located to the rear of buildings, the rear façade must present an attractive interface to the car parking area. Where surface car parks are located adjacent to the street, these areas are to be screened, where possible, with vegetation including canopy shade trees. Any planting adjacent to vehicular and pedestrian access points is to ensure vehicle drivers' sightlines are maintained.

Canopy shade trees are to be provided through any open hardstand area at a rate of one (1) tree per six (6) car park spaces on an open grid pattern. Undercroft car parking should, where possible, be screened from view if visible from the street or residential areas.

Where possible, buildings should incorporate sustainable development initiatives. Buildings are generally to be orientated to maximise energy efficiency and outdoor areas shall be located to receive adequate exposure to sunlight. Buildings are to be designed to accommodate a variety of different uses through techniques such as innovative floorplate design to allow flexible separation of spaces and compatible ceiling heights.

Consistent with the DCP, it is important that flexibility be maintained in order to enable future planning to respond to changing requirements of the community and the marketplace. Unless otherwise explicit in the Precinct Plan’s text, the Precinct Plan does not necessarily define the final nature or location of specific land uses, nor does it show the final location and extent of road networks.

### **3.2 ENDEAVOUR BOULEVARD FRONTAGE**

Endeavour Boulevard is to be characterised by its traffic role serving the town centre, the Mixed Industry and Business Area (MIBA) and the residential area to the north of the Precinct. The through-route nature of Endeavour Boulevard is to be emphasised through street treatments including the use of open landscaping along the verges and median strips, which allow visual exposure of the buildings from the road.

Development along the Endeavour Boulevard frontage of the Precinct must provide a defined edge and a transition between the predominantly commercial activities of the Precinct and the residential areas to the north of Endeavour Boulevard. This is to be achieved by providing a scale, density and level of activity that is appropriate to the proposed setting and use, whilst ensuring that development also has a complementary interface with the retirement village (Southern Residential Precinct 004) to the north. The transitional nature of the Precinct may also be emphasised through the use of architectural features and building designs that are compatible with the adjoining retirement village development such as the use of similar building materials, building height, building scale and roof pitch.

Endeavour Boulevard is anticipated to be a high traffic road but consistent with the general amenity and safety standards expected in an urban area. Left in/left out access arrangements are proposed for development accessed from this frontage to reinforce the primary role of Endeavour Boulevard. Pedestrian thoroughfares and linkages are encouraged in order to maintain an association with the adjacent retirement village, nearby community orientated Precincts and the Town Centre Core. However, in order to clearly define the through-route nature of Endeavour Boulevard, pedestrian crossings are to be limited to intersections. Landscaping should be integrated with the design of the building to provide screening or relief to retaining walls or long flat building walls.

Car parking shall generally be located behind the building. Where public car parking areas (not staff parking) are located to the rear of buildings, the rear façade must be well-presented to the car parking area. Where surface car parks are located adjacent to the street, these areas are to be screened, where possible, with vegetation including canopy shade trees. Any planting adjacent to vehicular and pedestrian access points is to ensure

vehicle drivers’ sightlines are maintained. Pedestrian safety is to be paramount through the use of paving treatments to define and encourage the use of pedestrian movement areas.

### **3.3 NORTH LAKES DRIVE & LAKEFIELD DRIVE FRONTAGE**

The built form of development with frontage to Lakefield Drive is to be of a higher density and diversity in comparison to other development within the Town Centre Frame but of a lower density than the Town Centre Core. The mixed-use and varied nature of development along this frontage and the community development within and adjacent to the Precinct (Precinct Plans 020, 008 and 015) should contribute to high levels of activity during the day and night. Where mixed-use development is proposed, the residential components are required to be located above ground floor level. Mixed-use developments incorporating a residential use must address acoustic impacts, along with security, privacy, opportunities for views and access to units that is separate from access to other uses. Development located along North Lakes Drive is required to be at least two storeys in height, while development along Lakefield Drive is encouraged to be at least two (2) storeys in height, as discussed in section 3.1 of the Precinct Plan. Further increased heights are particularly encouraged on the corner of Lakefield and North Drive where it contributes to the envisaged focal point for this area.

Development on North Lakes Drive is required to be built up to the front boundary. It is also desirable that built form along Lakefield Drive be built up to the front boundary and feature a continuous edge to the streetscape. Active frontages, which provide direct business and social activity along both streets, provide opportunities for people to meet, ensure ground floor uses face and address the street to undertake business (not from within a separate shopping centre or arcade) and have well-proportioned access doorways which remain open during normal trading hours, are encouraged. Premises are also encouraged to have frontages that are visually interesting, display activity inside and are generally transparent. Pedestrian access from the street is to be ‘at grade’ to encourage active frontages in the development. Pedestrian comfort at ground level must be considered with any development with frontage to North Lakes Drive or Lakefield Drive. To achieve this outcome, appropriate responses should include a combination of continuous pedestrian shelter provided by building awnings (first storey) or colonnades, shade structures, street furniture and landscaping.

North Lakes Drive will function as a main street environment. Lakefield Drive is intended to function as a commercial street providing access to the Town Centre Core.

Car parking is to be unobtrusive and is intended to create minimal interruption to the streetscape and pedestrian routes through siting, landscaping and/or screening. Car parking areas are to be located behind, or underneath buildings, where possible, in order to maximise shading of these areas. Where car parking areas are located to the rear of buildings, the rear façade must present an attractive façade to the car parking area. Where surface car parks are located adjacent to the street, these areas are to be suitably screened, where possible, with dense vegetation including canopy shade trees but with due concern for maintaining drivers’ sightlines. Where utility/service areas are proposed, they are appropriately screened and landscaped to minimise negative impacts on visual amenity and character.



### **3.4 SECONDARY ACCESS ROAD FRONTAGE (BERGIN STREET)**

The desired character of development fronting the Secondary Access Road (Bergin Street) is to be achieved through a variety of landscape and architectural designs and features for each individual building. However, some consistent elements to achieve architectural harmony are required. Integration of building design and urban spaces with appropriate lighting, signage and landscaping, contribute to a desired sense of place along this road frontage. Additionally, consistency in the overall design character of proposed buildings is to be reinforced by materials, finishes colours and details.

## **4.0 Landscape Concept**

### **4.1 LANDSCAPE CONCEPT PLAN MAP**

*Figure 4 – Landscape Concept Plan* provides a diagrammatic framework for the creation of a distinctive urban setting and character for the Precinct.

### **4.2 CONCEPT OVERVIEW**

The landscape concept for this Precinct can generally be described as having an informal planting character, incorporating distinctive key character elements already established in the DCP area. These key character elements include predominantly native planting and the use of natural materials such as stone and wood within the landscape and streetscape elements.

The streetscape character of the Precinct should reflect the through-route nature of Endeavour Boulevard and the changes in land-use, character and traffic level between the balance of the Town Centre Frame and the residential development to the north of the Sector as well as the “Main Street’ Character or North Lakes Drive. Landscaping should address the transitional nature of the proposed Secondary Access Road within the Precinct to the through-route nature of Endeavour Boulevard. Landscaping shall promote safety and low speeds but with due concern for maintaining drivers’ sightlines.

Landscaping within the Precinct should be used to soften the edge of built form and to disguise the anticipated building bulk, scale and mass of uses within the Precinct. Planting species should be selected to achieve this purpose.

Landscaping should enhance public comfort in all publicly accessible areas, through the provision of shade trees, adequate seating, appropriate paving and lighting treatments and where possible, segregation of the vehicle and pedestrian environments.

Hard landscape elements are to be constructed of high quality materials and designs and coordinated with the architectural design and landscape. Lighting is to be used to accentuate entries to buildings and car parking areas. Lighting of other facades is to be subdued. All pedestrian areas and paths must be provided with a safe level of lighting.

Footpath paving treatments within the road reserve are to achieve a consistent theme between adjacent and surrounding development and require continuity of materials and elements while permitting easy and even-surfaces for desirable walking conditions for pedestrians.

#### **4.2.1 Frontage to Endeavour Boulevard**

The streetscape and planting theme along Endeavour Boulevard should be distinct from other streets within the Town Centre and the Precinct. Streetscape treatments and landscaping should clearly indicate the through-route nature of this road and give views to the parking entrances of development. As such, Endeavour Boulevard is envisaged as wide streetscapes with a very open character.

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Landscape planting along Endeavour Boulevard is to be used to provide an accent to

buildings in the Precinct, rather than a screen. Landscaping is to include planting along the median strip of Endeavour Boulevard and along the verges. Landscaping should reflect the major traffic role and function of the road, filter the impacts of the anticipated traffic flows and recognise the transition in development scale and intensity between the predominantly commercial environment of the Town Centre Frame, the residential development to the north of the Precinct and the MIBA likely to be established to the north-west of the Precinct.

Any plantings adjacent to vehicular and pedestrian access points within the Precinct must address the transitional nature of proposed secondary access road to the through-route nature of Endeavour Boulevard. Landscaping shall promote safety and low speeds but with due concern for maintaining sightlines.

Planting should be selected to provide shade and should be of sufficient height and density to mitigate the potential visual impact of the building bulk within the Precinct. Landscaping may be required to buffer and screen functional elements along these frontages to reduce impacts upon the amenity and visual character of the Precinct.

#### **4.2.2 Lakefield Drive Frontage and Secondary Access Road (Bergin Street)**

The streetscape treatment of the intersections of both Lakefield Drive and the Secondary Access Road (Bergin Street) with Endeavour Boulevard should address the transitional nature of these secondary roads to the through-route nature of Endeavour Boulevard. Landscaping shall promote safety and low speeds but with due concern for maintaining sightlines.

The verges on both sides of Lakefield Drive and the Secondary Access Road are to be consistently framed with appropriate landscape and canopy trees to establish a “day one effect”. The landscape character is to be consistent with a local commercial street and is to be closed and shaded, with tree canopies desirably arching across the carriageway. This is to be in contrast to the more open traffic orientated environment along Endeavour Boulevard.

Landscaping along the Lakefield Drive frontage should reinforce the pedestrian activity along this frontage, linking from the Town Centre Core to the Town Centre Frame “D” Precinct (Precinct Plan 020) and the wider Town Centre Frame.

Landscape planting should soften the appearance and give scale to buildings within the Precinct, articulate urban spaces, provide shade for on-street car parks and adjacent pedestrian areas and reduce glare from parked vehicles and nearby buildings. Landscaping may be required to buffer and screen functional elements of uses along these frontages to reduce their impacts upon the amenity and visual character of the Precinct.

Landscaping and street furniture are to exhibit a general design theme and continuity of materials and elements, as well as create a comfortable and attractive environment. They are to contribute to the town centre identity and assist with visitor orientation and identification.

#### **4.2.3 Frontage to North Lakes Drive**

Landscape planting along North Lakes Drive should soften the appearance of built form and give scale to buildings within the Sector, articulate urban spaces and provide shade for on-street car parks, bus stop waiting areas and adjacent pedestrian areas.

The 6.5 metre verges on both sides of North Lakes Drive are to be consistently framed with appropriate landscape and canopy trees to establish a “day one effect”. It is proposed to have an open landscape character with themed shade trees spaced along the verges to provide partial shade to the kerbside car parking and the street furniture. Streetscape treatment must include generous footpaths, street trees, street furniture and street lighting.

Landscaping and street furniture are to exhibit a general design theme and continuity of materials and elements, as well as create a comfortable and attractive environment. They should contribute to the town centre identity and assist with visitor orientation and identification.

#### **4.2.4 Pedestrian Linkages and Plazas**

Pedestrian connectivity within the Precinct is to be provided within the public road network. There may also be an opportunity to provide further links through the built form between public and private spaces, particularly along Lakefield Drive and North Lakes Drive. Where pedestrian links are identified as serving an overall purpose to assist pedestrian connectivity, provision is to be made to create an interconnected landscaped, open space and pedestrian system

Subsequent Sector Plan(s) and applications for Material Change of Use will specify how this shall occur in particular circumstances but it may be for example, by common pedestrian pavement surfaces, special treatment of roadway surfaces, or a particular integrated style of landscaping for pedestrian legibility.

#### **4.2.5 Landscaped Car Park Areas**

Landscaping within car parking areas is to be provided in accordance with the DCP provisions and to define pedestrian connections between car parking areas, the streetscape and buildings. Landscaping of car parking areas is to be varied and interesting through the use of different landscape treatments, to contribute to the visual interest and character of the Precinct and minimise the potentially negative appearance of the car parking facilities. Car parking aisles should also be landscaped with low planting to enhance the appearance of car parking areas, while seeking to avoid reducing visibility. Outdoor areas such as surface car parking must be planted with canopy shade trees and integrated with the planned network of landscaped pedestrian and road frontage treatments.

The use of shade trees and screening through car parking areas must provide visual and

physical relief from heat and glare, as well as contribute to the creation of an attractive urban landscape setting for all roads surrounding the Precinct. Shade trees are to be provided at the rate of not less than one (1) tree per six (6) parking spaces in all car park areas. Car park areas are encouraged to include appropriate shade structures integrated within the overall development, if appropriate. Undercroft car parking is to be screened from street and residential vistas.

#### **4.2.6 Landscape Buffer Planting**

Unsightly functional elements, including loading docks, waste storage, collection areas and plant and building services areas require appropriate screening measures. These should be incorporated into overall building design and integrated with appropriate landscaping.

## **5.0 Environmental Management**

The following objectives and performance criteria provide a summary of the environmental issues that will need to be considered as part of the detailed planning and design for development within the Precinct, particularly at the Sector Plan stage.

### **5.1 ENVIRONMENTAL MANAGEMENT OBJECTIVES**

#### **5.1.1 Objectives**

- (i) To encourage energy efficiency in order to minimise greenhouse gas generation;
- (ii) To encourage development which incorporates environmentally sustainable initiatives; and
- (iii) To manage and mitigate environmental risk.

#### **5.1.2 Performance Indicators**

For all development within this Precinct, environmental management during the design phase, construction and post-construction phases, should:

- (i) implement energy efficient design elements in buildings, including overall building design, building orientation to maximise use of positive climatic conditions such as access to sunlight and prevailing breezes, shading including overhangs, skylights and non-reflective materials, building materials and mechanical and electrical plants to improve energy efficiency;
- (ii) implement building energy management systems which contribute to overall building energy efficiency;
- (iii) adopt effective air pollution mitigation measures to comply with the Environmental Protection Act, Environmental Protection Policy (Air) and other relevant legislation in relation to dust, smoke, fumes and gases, where necessary;
- (iv) ensure construction activities comply with Council's Policy LP32;
- (v) implement effective noise mitigation measures to comply with the Environmental Protection Act, Environmental Protection Policy (Noise) and other relevant legislation where necessary;
- (vi) ensure high levels of environmental quality are achieved through water management for example in the maintenance of landscaped areas;
- (vii) ensure noise generated from development is reasonable for the type of use;
- (viii) ensure buildings used for purposes that require low noise intrusion, including residential uses, are designed to adequately ameliorate noise from external sources within and external to the Precinct;
- (ix) implement suitable waste storage and disposal measures in accordance with Council regulations;

- (x) implement design elements and buffer treatments to control the obtrusive effects of outdoor lighting where it is likely to adversely affect residential amenity and traffic safety;
- (xi) implement management and maintenance actions in accordance with Best Management Practice to minimise site-generated dirt/mud on public roads, particularly after rain periods; and
- (xii) ensure environmental management structures or control devices, such as gross pollutant traps, waste disposal bins, flues and the like, do not detract from the overall visual character of the Town Centre Frame or the immediate locality.

## **5.2 STORMWATER MANAGEMENT OBJECTIVES**

### **5.2.1 Objective**

To manage the quality and quantity of stormwater within and from the Precinct so as not to cause a nuisance or annoyance to any person, prevent erosion and flooding, maximise soil infiltration and minimise overland flow.

### **5.2.2 Performance Indicators**

Implement management systems which seek to control the quality and quantity of surface water in compliance with the:

- (i) *Environmental Protection Act 1994* and the *Environmental Protection Policy (Water)* and other relevant legislation;
- (ii) Planning Scheme, Local Laws, the Design Manual and policies except where Clause 2.6 of the Mango Hill Infrastructure Agreement applies;
- (iii) Mango Hill Infrastructure Agreement;
- (iv) Performance objectives of both the Freshwater Creek Catchment Management Plan and the Saltwater Creek Catchment Management Plan;
- (v) Stormwater Management Plan for Freshwater Creek; and
- (vi) Stormwater Management Plan for Tributary C.

### **5.3 EARTHWORKS MANAGEMENT OBJECTIVES**

#### **5.3.1 Objective**

To adopt appropriate environmental management practices to avoid, or mitigate and manage, the potential adverse affects of earthworks and related land development activities.

#### **5.3.2 Performance Indicators**

For all development within this Precinct, earthworks management during construction and post-construction should:

- (i) identify the extent of acceptable earthworks activities consistent with the protection of overall environmental values and prepare designs complying with these limitations;
- (ii) implement appropriate soil erosion and sediment control protection measures and monitor and maintain these;
- (iii) manage the excavation and reshaping (bulk earthworks) to establish a finished surface profile that seeks to minimise the environmental impact of the earthworks on the surrounding environment; and
- (iv) comply with the Environmental Protection Act 1994, Environmental Protection Policies and other relevant legislation, as necessary.



## **6.0 Generic Land Uses**

As required by Section 2.3.2 (f) of the DCP, the intended desirable and undesirable generic land uses for the Precinct are:

### **6.1 DESIRABLE LAND USES**

- (i) car park;
- (ii) commercial services;
- (iii) community infrastructure such as emergency services facilities and civic and cultural uses;
- (iv) educational;
- (v) hotel / motel;
- (vi) office;
- (vii) medical;
- (viii) medium to high density residential (above ground level);
- (ix) mixed use development;
- (x) recreation and leisure facilities;
- (xi) restaurant and café; and
- (xii) retail.

### **6.2 UNDESIRABLE LAND USES**

- (i) recycling depot where not associated with an existing building; and
- (ii) display home.

## **7.0 Infrastructure**

### **7.1 INFRASTRUCTURE TO BE PROVIDED**

The following infrastructure is to be provided in the Precinct in accordance with the Mango Hill Infrastructure Agreement (MHIA), the Mango Hill Infrastructure Agreement – Main Roads (MHIA-MR), the Mango Hill Infrastructure Agreement (Queensland Transport) and the rezoning conditions.

#### **7.1.1 Roads**

- (i) All internal public roads; and
- (ii) Pathways and bikeways.

(refer to *Figure 5 – Road Layout*)

#### **7.1.2 Water Supply**

- (i) Reticulation systems along all internal roads to service all properties in the Precinct;
- (ii) Those sections of the mains shown on *Figure 6 – Water Supply Headworks*, necessary to service the anticipated demand in the Precinct; and
- (iii) Water headworks contributions.

#### **7.1.3 Sewerage**

- (i) Trunk gravity main from the existing Council sewerage infrastructure to connect with each lot in the Precinct as shown on *Figure 7 – Sewerage Headworks*; and
- (ii) Sewerage headworks contributions.

#### **7.1.4 Stormwater**

- (i) Stormwater management works progressively in accordance with the Stormwater Management Plan for Tributary C and the Stormwater Management Plan for Freshwater Creek as approved by Council; and
- (ii) Stormwater drainage systems to roads and lots.

#### **7.1.5 Open Space**

Provide open space for the purposes of a detention basin in accordance with *Figure 3 – Precinct Plan Map*.

### **7.1.6 Electricity Supply and Communications**

- (i) Allow for underground electricity distribution to all properties within the Precinct, by Energex or another appropriate supplier of electricity; and
- (ii) Arrange for the provision of underground conduits along all road verges within the Precinct and adjacent roads to meet the anticipated demands of the DCP area.

## **7.2 INFRASTRUCTURE AFFECTED OR REQUIRED BY PRECINCT DEVELOPMENT**

- (i) The development of the Precinct may place demands on the following infrastructure:
  - Roads external to the DCP area and the Precinct;
  - Water supply infrastructure;
  - Sewerage infrastructure;
  - Stormwater infrastructure;
  - Parks;
  - Community facilities;
  - Electricity and gas supply;
  - Communications systems; and
  - State Government Infrastructure.
- (ii) The infrastructure described in clause 7.1 above, together with the obligations of the Principal Developer under infrastructure agreements will mitigate the adverse affects on the above infrastructure.

## **7.3 HOW THE REQUIRED INFRASTRUCTURE RELATES TO THE INFRASTRUCTURE AGREEMENTS**

The infrastructure agreements describe the infrastructure that 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 7.1 of this document are the Principal Developer's obligations under the rezoning conditions and the infrastructure agreements.

## **8.0 Preliminary Infrastructure Program**

### **8.1 PRELIMINARY PROGRAM FOR INFRASTRUCTURE PROVISION**

- (i) The Principal Developer will provide all infrastructure referred to in clause 7.1 of this document at times to satisfy the requirements of the MHIA. Initial infrastructure works are estimated to be constructed by December 2006;
- (ii) The local bus service will be provided in accordance with clause 8.2 (i) of this document; and
- (iii) The public transport interchange and provision of land for park and ride facilities within the Town Centre Frame will be provided in accordance with clause 8.2 (ii) of this document.

### **8.2 INFRASTRUCTURE TO BE PROVIDED AND THE INTENDED PROVIDER**

The following items of State Government infrastructure are to be provided by the Principal Developer in conjunction with the development of the Precinct in accordance with Infrastructure Agreements with the State Government. These include the provision of works to State-Controlled Roads.

- (i) A local bus service will service the Precinct in accordance with the Infrastructure Agreement with Queensland Transport;
- (ii) A public transport interchange and park and ride facilities are to be provided in accordance with the Infrastructure Agreement with Queensland Transport; and
- (iii) 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 Infrastructure Agreement with the State Government.

### **8.3 OTHER WORKS DEPENDENT ON INFRASTRUCTURE PROVISION**

There are no other works necessary to ensure the infrastructure required to service the development of this Precinct is provided.

### **8.4 ESTIMATES OF WHEN OTHER WORKS DEPENDENT ON INFRASTRUCTURE PROVISION WILL NEED TO BE PROVIDED**

Not applicable – refer to Section 8.3 above.

## **8.5    OTHER RELEVANT INFORMATION**

### **8.5.1    Estimated Water and Sewerage Demands**

As required by the MHIA, the Principal Developer states as follows:

- (i)    For the purpose of assessing water supply capacity, the estimated number of equivalent Tenements for this Precinct is 195 ET; and
- (ii)   For the purpose of assessing sewerage capacity, the estimated number of Equivalent Persons for this Precinct is 530 EP.