

# **MANGO HILL INFRASTRUCTURE DEVELOPMENT CONTROL PLAN**

**Precinct Plan No. 032**

**for**

**Town Centre Frame “H” Precinct -  
Memorial Drive**

**North Lakes Development**

**23 May 2008**

**CONTENTS PAGE**

<b>1.0</b>	<b>Introduction and Statutory Context .....</b>	<b>3</b>
<b>2.0</b>	<b>DCP Interpretation.....</b>	<b>4</b>
<b>2.1</b>	<b>STRUCTURE PLAN</b>	<b>4</b>
<b>2.2</b>	<b>DESIRED ENVIRONMENTAL OUTCOMES (DEOs)</b>	<b>4</b>
<b>2.3</b>	<b>PLANNING INTENT</b>	<b>5</b>
<b>3.0</b>	<b>Development, Planning and Design Principles.....</b>	<b>6</b>
<b>3.1</b>	<b>GENERAL FORM OF DEVELOPMENT</b>	<b>6</b>
<b>3.2</b>	<b>GENERAL FORM OF DEVELOPMENT ALONG MEMORIAL DRIVE</b>	<b>8</b>
<b>3.3</b>	<b>GENERAL FORM OF DEVELOPMENT ALONG ENDEAVOUR BOULEVARD</b>	<b>9</b>
<b>3.4</b>	<b>GENERAL FORM OF DEVELOPMENT ALONG DISCOVERY DRIVE</b>	<b>10</b>
<b>4.0</b>	<b>Landscape Concept.....</b>	<b>11</b>
<b>4.1</b>	<b>LANDSCAPE CONCEPT PLAN MAP</b>	<b>11</b>
<b>4.2</b>	<b>CONCEPT OVERVIEW</b>	<b>11</b>
<b>5.0</b>	<b>Environmental Management .....</b>	<b>14</b>
<b>5.1</b>	<b>ENVIRONMENTAL MANAGEMENT OBJECTIVES</b>	<b>14</b>
<b>5.2</b>	<b>STORMWATER MANAGEMENT OBJECTIVES</b>	<b>15</b>
<b>5.3</b>	<b>EARTHWORKS MANAGEMENT OBJECTIVES</b>	<b>16</b>
<b>6.0</b>	<b>Generic Land Uses .....</b>	<b>17</b>
<b>6.1</b>	<b>DESIRABLE LAND USES</b>	<b>17</b>
<b>6.2</b>	<b>UNDESIRABLE LAND USES</b>	<b>17</b>
<b>7.0</b>	<b>Infrastructure.....</b>	<b>18</b>
<b>7.1</b>	<b>INFRASTRUCTURE TO BE PROVIDED</b>	<b>18</b>
<b>7.2</b>	<b>INFRASTRUCTURE AFFECTED OR REQUIRED BY PRECINCT DEVELOPMENT</b>	<b>19</b>
<b>7.3</b>	<b>HOW THE REQUIRED INFRASTRUCTURE RELATES TO THE INFRASTRUCTURE AGREEMENTS</b>	<b>19</b>
<b>8.0</b>	<b>Preliminary Infrastructure Program.....</b>	<b>20</b>
<b>8.1</b>	<b>PRELIMINARY PROGRAM FOR INFRASTRUCTURE PROVISION</b>	<b>20</b>
<b>8.1</b>	<b>Preliminary Program for Infrastructure Provision</b>	<b>20</b>
<b>8.2</b>	<b>Infrastructure To Be Provided And The Intended Provider</b>	<b>20</b>
<b>8.3</b>	<b>Other Works Dependent On Infrastructure Provision</b>	<b>20</b>
<b>8.4</b>	<b>Estimates Of When Other Works Dependent On Infrastructure Provision Will Need To Be Provided</b>	<b>20</b>
<b>8.5</b>	<b>Other Relevant Information</b>	<b>20</b>

**List of Figures**

1. Planning Context
2. Structure Plan Context
3. Precinct Plan Map
4. Landscape Concept Plan Map
5. Road Layout
6. Water Supply Headworks
7. Sewerage Headworks

**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 “H” Precinct – Memorial Drive** (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) Town Centre Frame “C” Precinct – Discovery Drive (Precinct Plan 019) to the east and south east;
  - (ii) The balance of the Town Centre west and Westfield Shopping Centre (Precinct Plan 002) and the Town Centre Frame “B” Precinct – Town Centre (Precinct Plan 018) to the west and south-west;
  - (iii) Memorial Drive and Lake Eden to the North; and
  - (iv) Endeavour Boulevard and Town Centre Frame “F” Precinct to the South
- 1.5** 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.
- 1.6** 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.
- 1.7** 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 this Precinct are outlined in the following sections of the DCP:

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

This Precinct 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) secondary access roads which maximise vehicular, bicycle and pedestrian safety, convenience and efficiency; and
- (v) 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 other areas within the Town Centre Frame.

It is anticipated that the location of the Precinct, adjacent to major movement corridors, should encourage uses that benefit from high visibility and accessibility. The commercial pedestrian orientated uses are expected to be located along the Memorial Drive frontage. However, commercial uses that require accessibility, without requiring the exposure to passing traffic, are expected to occupy the land fronting the Endeavour Boulevard frontage. The full range of Town Centre Frame land uses may also be considered if such land uses are compatible with the proposed built form. It is envisaged that a mix of commercial/retail and residential uses, be located within this Precinct as it is considered that the commercial and retail uses proposed within the Precinct would be considered compatible with residential amenity. It is considered housing of varying densities would complement the Town Centre Frames retail and commercial uses. Given the integration of residential uses within the precinct it would be considered that after hours activities be encouraged (i.e. restaurants and convenience outlets) through this precinct ensuring the site remains active both in the evenings and on weekends whilst serving to provide an extension to the monthly weekend markets held near Lake Eden (and within close proximity to the site).

Land uses are to generally integrate with the Town Centre Core and should be integrated in functional and urban design terms with adjacent Precincts.

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

#### **3.1 GENERAL FORM OF DEVELOPMENT**

The Precinct is located in a highly accessible and visually prominent location within the Town Centre Frame. It is also located at a key junction within the North Lakes development and is an important area for aesthetic and functional reasons given the location of the Precinct to Lake Eden. Memorial Drive, Discovery Drive and Endeavour Boulevard link the Precinct to the balance of the Town Centre, Lake Eden and the residential community located to the north, in terms of community functions, streetscape and visual connections.

Distinctive architectural features and/or signage that generally announce the location of the Town Centre and the North Lakes development are encouraged to be located within the Precinct in order to capitalise on the Precinct's visibility from the wider Town Centre. Signage that is visible from key roads is to be controlled to maintain an appearance appropriate to the overall image of North Lakes.

The architecture of any development within the Precinct should be contemporary, with variations in building form achieved by use of roof lines, shading and other features. Indoor and outdoor spaces should be linked by transition areas where possible. All buildings within this Precinct will have a compatible architectural character, with the consistency of the overall design character reinforced by materials, finishes, colours, and details that will combine to promote a strong sense of place.

Development within the Precinct should relate physically and functionally with each other in terms of architecture, location of major entries and changes in level. The development should feature the incorporation of horizontal and vertical variations in the facades with attractive entries and well-lit pedestrian access.

The built form and landscaping within the Precinct are to emphasise lower speed nature of development within North Lakes. Landscaping treatments are to assist in clearly indicating the lower speed environment of secondary entry roads.

The built form of the Precinct is intended to be of a higher density in comparison to other development within the Town Centre Frame. This is to be achieved through the integration of buildings and landscaped areas. Smaller tenancies are envisaged for this Precinct than in the commercial development to the south and east. Articulation is encouraged through the variation in building materials and landscaping around the building to contribute to an attractive streetscape. Building setbacks are to accommodate changes any level between road pavement and building platforms.

Proposed buildings are to have street presence and provide for active frontages, and due to the characteristics of the preferred land uses listed in Section 2.3 above, buildings should also promote increased integration with the pedestrian streetscape. Where larger building façades facing the street do not incorporate entries, windows or similar elements providing visual relief; such facades must incorporate attractive visual elements by detail, articulation, materials, features etc, or incorporate varying setbacks that allow for additional landscaping.

Buildings are generally to be orientated to maximise energy efficiency and outdoor areas shall be located to receive adequate exposure to sunlight. Where possible, buildings shall incorporate sustainable development initiatives. 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.

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. In particular roof plant is to be screened from major roads.

The built form within the Precinct should allow a high level of accessibility and convenience for pedestrians, cyclists and motor vehicles. The Precinct is to feature a highly inter-connected road and pathways network in order to minimise conflicts between vehicles and pedestrians, and to provide more direct access to uses. Shared access is to be encouraged between all proposed uses within the Precinct and may be achieved via easement arrangements. Direct access to the site from the two roundabouts located along the western boundary of the site and the proposed service road, Memorial Drive and Discovery Drive is to be restricted to minimise interruptions to traffic flow and maximise vehicular, bicycle and pedestrian safety. An internal access road services the site and will be accessed via the round-a-bout located along Memorial Drive and half way along Endeavour Boulevard.

Consistency of overall design character within the Precinct and adjoining Precincts is to be achieved through integration of building design and urban spaces, and use of high quality materials, finishes, colours and details in order to promote a modern town centre with a strong sense of place.

The visual focus points of the Precinct are to be located at the corner of Endeavour Boulevard and Memorial Drive and Discovery Drive and Memorial Drive. It is intended that the Principal Developer provide entry features and landscaping to assist legibility and to strengthen the urban form of the Precinct, as well as the North Lakes development as a whole.

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 GENERAL FORM OF DEVELOPMENT ALONG MEMORIAL DRIVE**

Memorial Drive is to be a key link between the Town Centre Frame and urban residential areas to the north. The through-route nature of Memorial Drive is to be emphasised through a ‘boulevard’ street treatment including the use of dense landscaping along the verges and median strips. Additionally, left in/left out access arrangement is proposed for development accessed from Memorial Drive to reinforce the primary role of this thoroughfare. Landscaping should be integrated with the design of the building to allow visual exposure of the buildings from the road, but still provide screening or relief to retaining walls or long flat building walls.

Buildings along Memorial Drive are to have a high level of architectural design to the street in order to contribute to its ‘boulevard’ character. While car parking is permitted along Endeavour Boulevard, further car parking shall generally be located behind the building and otherwise screened from view. Pedestrian safety is to be a priority with the use of paving treatments to define and encourage the use of pedestrian movement areas.

In order to strengthen the urban form of the Precinct, buildings located on the corner of the site should define the street environment by presenting an alternative façade to each frontage. Corner buildings should have an outward orientated building design and where appropriate, have generous footpaths, awnings and display windows and a high quality streetscape urban design character providing integration at the pedestrian scale.

Development within proximity to the Memorial Drive frontage should be emphasised through the placement of a distinctive architectural feature and/or signage that generally announce the location of the town centre frame at its northern most entry point. Built form at this location must create a transition between the primarily commercial environment of the town centre area and the lower density residential development on the edge and outside the town centre.

Development within proximity to the intersection of Memorial Drive and Discovery Drive should be emphasised through the placement of a distinctive architectural feature and/or signage that generally announce the location of the town centre at its northern most entry point. Built form at this location must create a transition between the primarily commercial environment of the town centre area and the lower density residential development on the edge and outside the town centre. This may be achieved through the inclusion of architectural features and building design that are compatible with the residential; development to the north of this intersection such as the use of similar building materials, building height, building scale and roof pitch.



### **3.3 GENERAL FORM OF DEVELOPMENT ALONG ENDEAVOUR BOULEVARD**

It is anticipated that uses located along Endeavour Boulevard will service both local residents and visitors from the wider region due to the location within the Town Centre Frame.

Traffic on Endeavour Boulevard is intended to be busy but consistent with the general amenity and safety standards expected in an urban area. Endeavour Boulevard should form a transition of a low speed environment between Memorial Drive and Discovery Drive. The spacing of signalised intersections, roundabouts and landscaping treatment are intended to assist in clearly defining the lower speed, pedestrian compatible environment of Endeavour Boulevard where street treatments and landscaping should clearly indicate the through-route nature of the road, and give views to the parking entrances of the development.

The appearance of the development along Endeavour Boulevard is also important in maintaining the perceived amenity and atmosphere of North Lakes. Whilst Memorial Drive serves as the primary frontage, buildings should also present an attractive façade to the Endeavour Boulevard frontage. The less attractive components of development along this frontage, such as storage areas and loading docks, shall be located towards the rear of buildings and effectively screened from view.

The frontage treatment along Endeavour Boulevard is envisaged to include a landscape strip, surface carparks containing landscaping, and vehicular and pedestrian movement aisles with built form set in behind the frontage treatment. Additional car parking could be located behind buildings and pedestrian movement areas and are to be clearly defined. All surface carparks (including vehicle parking proposed for the recurring markets held at Lake Eden) are to be shaded by canopy trees in accordance with the provisions of the DCP.

Given Memorial Drive being identified as a primary access route to the residential development to the north; Endeavour Boulevard is expected to provide improved site access whilst serving to minimise disruption to traffic flows. Access points are to be proposed along the Endeavour Boulevard frontage but where possible, shared access is to be encouraged.

**3.4 GENERAL FORM OF DEVELOPMENT ALONG DISCOVERY DRIVE**

Discovery Drive is to be a key entry to the North Lakes development, accessing both the Town Centre Frame and urban residential areas to the north. The through-route nature of Discovery Drive is to be emphasised through a 'boulevard' street treatment including the use of dense landscaping along the verges and median strips. Landscaping should be integrated with the design of the building to allow visual exposure of the buildings from the road, but still provide screening or relief to retaining walls or long flat building walls.

Traffic on Discovery Drive is intended to be busy but consistent with the general amenity and safety standards expected in an urban area. Discovery Drive should form a transition from the high-speed environment of Anzac Avenue to the residential traffic environment north of Lake Eden. The spacing of signalised intersections, roundabouts and landscaping treatment are intended to assist in clearly defining the lower speed, pedestrian compatible environment of Discovery Drive. Street treatments and landscaping should clearly indicate the through-route nature of the road, and give views to the parking entrances of development.

Buildings along Discovery Drive are to have a high level of architectural design to the street in order to contribute to its 'boulevard' character. While car parking is permitted between Discovery Drive and any building, further car parking shall generally be located behind the building, fronting a secondary access road or otherwise screened from view. Pedestrian safety is to be a priority with the use of paving treatments to define and encourage the use of pedestrian movement areas.

In order to strengthen the urban form of the Precinct, buildings located on corner allotments should define the street environment by presenting an alternative façade to each frontage. Corner buildings should have an outward orientated building design and where appropriate, have generous footpaths, awnings and display windows and a high quality streetscape urban design character.

Development within proximity to the intersection of Memorial Drive and Discovery Drive should be emphasised through the placement of a distinctive architectural feature and/or signage that generally announce the location of the town centre at its northern most entry point. Built form at this location must create a transition between the primarily commercial environment of the town centre area and the lower density residential development on the edge and outside the town centre. This may be achieved through the inclusion of architectural features and building design that are compatible with the residential development to the north of this intersection such as the use of similar building materials, building height, building scale and roof pitch.

## **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**

Many of the functional elements of uses anticipated in this Precinct require buffering and screening to reduce their impacts upon the amenity and visual character of the Precinct. 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 preferred uses within the Precinct. Planting species should be selected to achieve this purpose. Planting will be restricted to species that are capable of good growth and endurance in the commercial environment of the subject Precinct.

#### **4.2.1 Frontage to Memorial Drive**

The Memorial Drive frontage of the Precinct intersects with Endeavour Boulevard, a key intersection within the Town Centre Frame. The appearance of Memorial Drive is important in maintaining the overall amenity and character of North Lakes.

Random street tree planting and landscaping along the Memorial Drive frontage of the Precinct, which are to be provided by the Principal Developer, are shown indicatively on Figure 4 - Landscape Concept Plan. Landscaping is also required in private development sites to reinforce the landscaping proposed along both street frontages.

Landscaping, in particular street trees, should be located along the Memorial Drive frontage in order to soften and enhance the appearance of the built form without obscuring it from the road. This will be achieved by using street trees that generally have a canopy and a clear trunk set within low level planting. The location of trees and landscaping shall also form a transition between development in this Precinct and the residential development to the north whilst providing an important link to the Lake Eden open space area. Landscaping is proposed to be featured around the entrance statement at the intersection of Memorial Drive and Endeavour Boulevard.

Landscaping along Memorial Drive, particularly near its intersection with Discovery Drive, should reflect the change in character, land uses and traffic level between the balance of the town centre area to the south of this location and the residential environment to the north.

Landscaping adjacent to the intersection of Memorial Drive and Discovery Drive must ensure vehicle drivers' sightlines are maintained.

#### **4.2.2 Frontage to Endeavour Boulevard**

The location of street tree planting along the Endeavour Boulevard frontage of the Precinct is shown indicatively on Figure 4 - Landscape Concept Plan. The road frontage is to be turfed, to create a high standard of presentation and a permeable landscaped setting, which blends with the streetscape planting of surrounding streetscapes. The landscaping of this area is intended to soften, enhance and provide scale to the built form without obscuring it from the road.

The location of trees and landscaping along Endeavour Boulevard should form a transition between the high-level traffic environments of Memorial Drive and Discovery Drive further to the east of the Precinct. Planting is to be restricted to species that are capable of good growth and endurance in the commercial environment of the Precinct.

The verges of Endeavour Boulevard are to be consistently framed with appropriate landscape and canopy trees to provide a species-themed “boulevard” link between Memorial Drive and Discovery Drive. Streetscape treatment should include generous footpaths, possible bus stops, street trees, on-street parking and lighting. The streetscape and planting theme along Endeavour Boulevard should be distinct from other streets in the Town Centre Frame. The “boulevard” is envisaged as a wide streetscape with a very open character. Street treatments and landscaping should clearly indicate the through-route nature of the road and give views to the parking entrances of development.

Planting should also be selected to provide shade and should be of sufficient height and density to mitigate the potential appearance of building bulk which is expected for the preferred land uses within the Precinct.

#### **4.4.3 Frontage to Discovery Drive**

The location of street tree planting along the Discovery Drive frontage of the Precinct is shown indicatively on Figure 4 - Landscape Concept Plan. The landscaping is to include planting along the median strip of Discovery Drive and along the verges. The road frontage is to be turfed, to create a high standard of presentation and a permeable landscaped setting, which blends with the streetscape planting of surrounding streetscapes. The landscaping of this area is intended to soften, enhance and provide scale to the built form without obscuring it from the road.

The location of trees and landscaping along Discovery Drive should form a transition between the high-level traffic environment of Anzac Avenue and the lower level traffic of residential development to the north of the Precinct. Additionally, the landscape treatment of Discovery Drive, near its intersection with Memorial Drive, should reflect the transition in land uses from primarily commercial uses to a lower density residential environment. Planting is to be restricted to species that are capable of good growth and endurance in the commercial environment of the Precinct.

The verges of Discovery Drive are to be consistently framed with appropriate landscape and canopy trees to provide a species-themed “boulevard” entry to North Lakes. Streetscape treatment should include generous footpaths, possible bus stops, street trees, on-street parking and lighting. The streetscape and planting theme along Discovery Drive should be distinct from other streets in the Town Centre and the Precinct. The “boulevard” is envisaged as a wide streetscape with a very open character. Street treatments and landscaping should clearly indicate the through-route nature of the road and give views to the parking entrances of development.

Planting should also be selected to provide shade and should be of sufficient height and density to mitigate the potential appearance of building bulk which is expected for the preferred land uses within the Precinct.

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

The intent of the landscaping of pedestrian areas is to create streetscape outcomes that are of a high standard, providing a comfortable and safe area for pedestrians. Where pedestrian links are identified as serving an overall purpose to assist pedestrian connectivity, provision should be made to create an inter-connected landscaped and pedestrian system.

Subsequent Sector Plan(s) and applications for Material Change of Use will specify how this integration 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 carparking areas is to be provided in accordance with the DCP provisions and to define pedestrian connections between carparking areas, the streetscape and buildings. Car parking areas should be designed as a forecourt to the main building, integrating paving, landscaping, shading and car parks. Outdoor areas such as surface carparking should be extensively planted with canopy shade trees that are integrated with the planned network of landscaped pedestrian road frontage treatments.

The extensive use of shade trees and screening through car parking areas shall 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 and within the Precinct.

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

Unightly functional elements, including loading docks, waste storage, collection areas and plant and building service areas require appropriate screening measures and are incorporated into overall building design, where possible.

## **5.0 Environmental Management**

The following objectives and performance indicators 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;
- (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 the Saltwater Creek Catchment Management Plan;
- (v) 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) car wash;
- (iii) commercial services;
- (iv) community premises;
- (v) fast food;
- (vi) mixed-use development;
- (vii) office;
- (viii) residential uses;
- (ix) retail; and
- (x) Special use.

### **6.2 UNDESIRABLE LAND USES**

- (i) Car yard and service station uses;
- (ii) Hardware/homemaker/warehouse style activities; and
- (iii) retirement village.

## **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 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 as approved by Council; and
- (ii) Stormwater drainage systems to roads and lots.

#### **7.1.5 Electricity Supply and Communications**

- (i) Allow for underground electricity distribution to all properties within the Precinct, by Energex or another appropriate supplier of electricity;
- (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****8.1 Preliminary Program for Infrastructure Provision**

- (i) The Principal Developer will provide all the infrastructure referred to in clause 7.1 of this document at times to satisfy the requirements of the MHIA and the Mango Hill DCP.
- (ii) 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 public transport interchange and park and ride facilities are to be provided in accordance with the Infrastructure Agreement with Queensland Transport; and
- (ii) 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 30 ET; and
- (ii) For the purpose of assessing sewerage capacity, the estimated number of Equivalent Persons for this Precinct is 60 EP.