

MANGO HILL INFRASTRUCTURE DEVELOPMENT CONTROL PLAN

Precinct Plan No. 027

for

**Town Centre Frame “G” Precinct -
North Lakes Drive**

North Lakes Development

25 September 2006

(Approved by Council on 25/09/2006)

CONTENTS PAGE

1.0	Introduction and Statutory Context	3
2.0	DCP Interpretation.....	4
2.1	... Structure Plan	4
2.2	... Desired Environmental Outcomes (DEO’s)	4
2.3	... Planning Intent	5
3.0	Development, Planning and Design Principles	6
3.1	... General Form of Development Within Precinct	6
3.2	... General Form of Development Along Anzac Avenue	7
3.3	... General Form of Development Along North Lakes Drive	7
3.4	... General Form of Development Along Memorial Drive	8
3.5	... General Form of Development Along Gregor Street West	9
4.0	Landscape Concept.....	10
4.1	... Landscape Concept Plan Map	10
4.2	... Concept Overview	10
5.0	Environmental Management	13
5.1	... Environmental Management Objectives	13
5.2	... Stormwater Management Objectives	14
5.3	... Earthworks Management Objectives	14
6.0	Generic Land Uses	15
6.1	... Desirable Land Uses	15
6.2	... Undesirable Land Uses	15
7.0	Infrastructure.....	16
7.1	... Infrastructure To Be Provided	16
7.2	... Infrastructure Affected Or Required By Precinct Development	17
7.3	... How The Required Infrastructure Relates To The Infrastructure Agreements	17
8.0	Preliminary Infrastructure Program.....	18
8.1	... Preliminary Program for Infrastructure Provision	18
8.2	... Infrastructure To Be Provided And The Intended Provider	18
8.3	... Other Works Dependent On Infrastructure Provision	18
8.4	... Estimates Of When Other Works Dependent On Infrastructure Provision Will Need To Be Provided	18
8.5	... Other Relevant Information	18

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 “G” Precinct – North Lakes Drive**.
- 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) Gregor Street West to the north;
 - (ii) Memorial Drive & North Lakes Drive to the west;
 - (iii) Future Town Centre Frame to the east; and
 - (iv) Anzac Avenue 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 (DEO's)

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) and (d); 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 complementary 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 outer 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) a high degree of accessibility within the regional transport network through connections to the public transit centre along North Lakes Drive, road networks, public transport corridors and pedestrian and cycle networks; and
- (vi) 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 the Town Core and is expected to provide a transition in intensity and scale of built form from the Town Centre Core to the Town Centre Frame areas situated to the north and east 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 has frontages to Anzac Avenue, North Lakes Drive, Memorial Drive and Gregor Street West. No vehicular access is proposed from Anzac Avenue with the main access from North Lakes Drive and Memorial Drive. Access to the Precinct will also be available from the east via either a public road or a private access (reciprocal access with the adjoining parcel).

The predominant land uses within this precinct are envisaged to include cultural facilities, commercial, educational, medical, office, retail and mixed-use development incorporating medium to high density residential above ground level. Uses and development that support, complement and facilitate the transition from the Town Core to the outer Town Centre Frame areas are encouraged within this Precinct.

3.0 Development, Planning and Design Principles

3.1 General Form of Development within Precinct

This precinct is located in a highly accessible and visually prominent location within the town centre, being part of the intersection that forms the main gateway to the Town Centre and residential areas of North Lakes. Accordingly, this precinct forms an important link with the Town Centre Core with regards to its community functions, development uses, streetscape and visual connections.

The nature of development within this precinct is to be commercially focused and generally be of a higher density than other parts of North Lakes. Minor retail at ground floor that complements the primary uses within this precinct is also considered appropriate. Development within this precinct is to complement and contribute to the desired character and higher order activities within the Town Centre.

The visual focal points of this Precinct will be at the North Lakes Drive/Anzac Avenue intersection and the North Lakes Drive/Memorial Drive intersection. These prominent corners will be emphasised through effective design, height and placement of landmark features that visually distinguish the intersection, strengthen urban form within the Precinct and facilitate clear legibility and hierarchy of spaces within the Town Centre.

Development within this precinct will be contemporary in design with variations in building form achieved through use of rooflines, building materials, projections and recesses, shading and other features. Given the Precinct’s high visual exposure, an exemplary architectural and urban design outcome should be achieved through effective integration of building design and urban spaces, both internal and external to the Precinct.

To strengthen urban form and street presence of the Precinct, buildings should define and reinforce the street environment by presenting variation in facades fronting different streets. Corner buildings should have an outward orientated building design and high quality streetscape facades that respond to the varying characters of each street. Unsightly functional elements, including loading docks, waste storage, collection areas, air conditioning, roof plants and plant and building service areas will be visually unobtrusive and are to be incorporated into overall building design.

Carparking is to be designed to minimise interruption to the streetscape and pedestrian routes through appropriate siting, design, landscaping and screening. Where possible, car parking areas should be located in areas where shading is maximised, such as behind or under buildings. Where surface car parks are located adjacent to the street, the areas are to be screened where possible with dense vegetation including canopy shade trees.

The built form within the Precinct should allow a high level of accessibility and convenience for pedestrians, cyclists and motor vehicles. Physical and visual permeability and connectivity is considered essential to the effective integration of the Precinct within the Town Centre. Accordingly future development should therefore facilitate integration of the public and private spaces through provision of a network of spaces and pathways that minimise conflicts between vehicles and pedestrians and provide physical connectivity throughout the site.

Where possible, buildings should incorporate sustainable development initiatives that effectively respond to the subtropical nature of South East Queensland and be designed and oriented to maximise energy efficiency. Buildings are also required to have the ability to accommodate a variety of uses through techniques such as innovative floorplate design to allow flexible separation of spaces and compatible ceiling heights. Outdoor spaces should be appropriately located to receive adequate exposure to sunlight and be complemented by hard and soft landscaping that facilitates all weather use.

Uses within this precinct are to facilitate a mixed and flexible environment to meet future employment and consumer needs and should appropriately respond to community expectations of the facilities and services likely to be found in this important Town Centre Frame location.

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 Anzac Avenue

It is anticipated that uses within this Precinct may attract both local residents and visitors from the wider region due to the site's high visibility and level of access from the Bruce Highway and Anzac Avenue's linkages with the City of Redcliffe to the east.

Accordingly, development along this frontage is to present an attractive facade that enhances the amenity of the Town Centre and contributes to the desired character of the area.

Buildings are to address the street and integrate with surrounding development, providing an effective transition of built form from the Town Centre Core to adjacent development to the north-east along Anzac Avenue.

Good quality architectural design and urban form is essential along this frontage. New buildings are to be well articulated and have an outward oriented design complemented by landscaping that softens the built form, reduces anticipated building bulk and improves urban amenity and visual character of the precinct.

Carparking is to be effectively screened and integrated into the design of the building in a manner that minimises interruption to the streetscape and pedestrian routes. Where possible, car parking should be located in areas where shading is maximised, such as behind or under buildings.

Unightly functional elements, including loading docks, waste storage, collection areas, air conditioning, roof plants and plant and building service areas are to be visually unobtrusive and incorporated into overall building design.

3.3 General Form of Development Along North Lakes Drive

North Lakes Drive, as an urban main street, will be the interface between the Town Centre Core and the Town Centre Frame, and will play a vital role in the effective integration between these two land use elements.

The section of North Lakes Drive adjoining this precinct is described as the ‘green gateway’ and is characterised by dense evergreen landscaping which, when combined with the future built form, will define the street’s edge and guide visual connections to and from key nodes such as Westfield Shopping Centre and Pathways.

This Precinct includes the principal entry to North Lakes, being located adjacent to the Anzac Avenue/North Lakes Drive. Accordingly buildings are to present a high quality attractive facade to North Lakes Drive characterised by variations in materials, building form and height, and will be appropriately set back to enable sufficient landscaping that reinforces the ‘green gateway’ and fosters a high quality streetscape character.

Landscaping and built form at the corner of North Lakes Drive and Anzac Avenue is to enhance the existing North Lakes entry wall feature, with sightlines to be maintained at all times.

The corner of Memorial Drive and North Lakes Drive is also a prominent intersection within the North Lakes Town Centre, with Memorial Drive providing key linkages and access through to the residential areas to the north. Accordingly, the importance of this corner is to be emphasised through effective design and integration of a landmark feature that visually distinguishes the intersection, strengthens the urban form and facilitates clear legibility of spaces within the Town Centre.

3.4 General Form of Development Along Memorial Drive

Memorial Drive serves as a key entry route to North Lakes and to Lake Eden. It is anticipated that Memorial Drive will operate as a commercial road however its primary role will be to function as a through-route to residential Precincts to the north.

Memorial Drive currently exhibits a boulevard environment with a wide landscaped median. Future development will be characterised by built form in a landscaped setting that establishes a soft edge to the streetscape and promotes a low speed, pedestrian compatible environment. Accordingly, landscaping is to be effectively incorporated within private development sites to maintain a high degree of integration with surrounding land uses and reinforce the desired character of Memorial Drive.

Buildings fronting Memorial Drive are to be contemporary in design with variations in building form achieved through effective integration of rooflines, building materials, recesses and projections, shading and other features.

Building are to present attractive facades and where appropriate, active street frontages that foster a vibrant atmosphere and scale appropriate to their location within the Town Centre. Vehicular access along Memorial Drive should be located away from the intersections with North Lakes Drive and Gregor Street West and car parking areas should be designed with an attractive setting, integrating paving, landscaping and shading to enhance amenity and minimise conflict points through considerate design.

3.5 General Form of Development Along Gregor Street West

Gregor Street West is a commercial street that is anticipated to experience a lower vehicular traffic volume. Gregor Street West will function as a “local street” and will facilitate access to car parking areas located at the rear of development. Buildings fronting these streets need to ensure connectivity, integration and a strong functional and architectural relationship with other developments within the Town Centre.

A continuation of surrounding landscape and streetscape themes should occur within Gregor Street West to reinforce the pedestrian oriented environment, maintain attractive vistas, improve legibility and enhance comfort and safety in all publicly accessible areas.

It is desirable for buildings to be built closer to the street alignment along these streets and development should be architecturally designed to incorporate and define main pedestrian thoroughfares and provide an interesting and inviting panorama for both pedestrian and vehicular traffic.

Premises are also encouraged to have visually interesting active frontages or frontages that provide pedestrian access from the street ‘at grade’ to encourage a vibrant atmosphere typically associated with a town centre. Building scale and intensity is to provide a transition from the built form of the Town Core to lesser scale development within the Town Centre Frame to the east. Heights and setbacks of development are to be in accordance with the relevant sector plan.

Car parking and service areas are to be unobtrusive and create minimal interruption to the streetscape and pedestrian routes through siting, landscaping and/or screening. Car parking areas are encouraged to be located behind, or underneath buildings and where possible, adjacent developments are also encouraged to provide opportunities for shared car parking, access points and service areas.

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

Landscaping should address the transitional nature of the Precinct from the “green gateway” entrance along North Lakes Drive to the landscaped commercial character of Memorial Drive and secondary landscaping elements of Gregor Street West.

Landscape treatments should contribute to the character of the Precinct through the articulation of urban spaces, screening of unsightly functional elements, provision of shade and the creation of an attractive and comfortable pedestrian friendly environment. Landscaping should reinforce the town centre identity and assist with visitor orientation and legibility.

Landscaping within the Precinct should be used to soften the edge of built form and disguise anticipated building bulk, scale and mass of uses within the Precinct. Planting species should be selected to achieve this purpose and on their capacity to experience good growth and endurance in a commercial environment.

Landscaping should be designed in accordance with CPTED principles and incorporate the provision of shade trees, adequate seating, appropriate paving and lighting treatments and where possible segregate vehicle and pedestrian environments.

Hard landscape elements are to be constructed of high quality materials and designs and coordinated with the architectural design and landscaping. Lighting is to be used to accentuate entries to buildings and car parking areas and maximise safety for pedestrians 24 hours a day. Lighting of areas not intended for night-time use is to be avoided and lighting of secondary facades is to be subdued. All pedestrian areas and paths must be provided with a safe level of lighting that provides a clear legible environment 24 hours a day.

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. Pedestrian pathways are also to provide even surfaces that facilitate desirable walking conditions for all pedestrians.

4.2.1 Frontage to Anzac Avenue

Given the high exposure of the Anzac Avenue frontage and its proximity to the principal entry point to North Lakes, the streetscape appearance along this boundary is considered critical to the overall amenity and character of North Lakes.

Landscaping along this frontage is to complement and reinforce the corner entry statement and “green gateway” whilst providing an effective transition from the Town Centre Core to the lesser intensity development to the north-east.

Landscaping, in particular street trees, should be located along the Anzac Avenue frontage to soften and enhance the built form without obscuring it from the road. Clear sightlines to the corner entry wall feature are to be maintained and landscaping within the private development site is to recognise the strategic importance of this intersection and provide a design outcome that establishes a benchmark for other developments within the Town Centre.

4.2.2 Frontage to North Lakes Drive

The North Lakes Drive frontage intersects with Anzac Avenue, being the major entrance point to North Lakes. Accordingly, appearance at this intersection and along North Lakes Drive is of the utmost importance to overall amenity and character of North Lakes. Landscaping at this intersection and along this frontage is to be given a high priority and should establish a benchmark for landscaping throughout the Town Centre.

North Lakes Drive at its entry from Anzac Avenue is to be characterised by a densely landscaped “green gateway” that transitions to a main street environment at the intersection with Memorial Drive. The precincts frontage to North Lakes Drive will be enhanced by tree lined footpaths that clearly delineate the edge of built form and guide views and vistas to the Town Centre and Town Common. Landscaping within precinct lots is to be effectively integrated into development in a manner that softens the built form and reinforces this “green gateway” experience. Plant species are to be selected which are capable of good growth and endurance in a commercial environment and effectively respond to the desired character of the Precinct and the North Lakes Town Centre.

The corner of North Lakes Drive and Anzac Avenue is also enhanced by the existing North Lakes entry wall feature. Given the significance of this feature as an entry statement to North Lakes, clear sightlines to this corner must be maintained at all times. Future development is to recognise the importance of this corner as a marquee feature of North Lakes and provide appropriate landscaping that extends the “green gateway” and reinforces the landscape character of North Lakes.

Any planting that is adjacent to vehicular and pedestrian access points is to ensure that vehicle drivers’ sightlines are maintained.

4.2.2 Frontage to Memorial Drive

The location of street tree planting and landscaping along the Memorial Drive frontage reflects the importance of the Precinct as a key component of the heart of the Town Centre and a major connection road to the North Lakes residential community. The road frontage area is to be turfed and planted so as to create a high standard of presentation and a permeable landscape setting, which blends with the surrounding streetscape planting and supports active building facades. The landscaping of this area softens, enhances and provides scale to the built form without obscuring it from the road. Planting species are to be selected that are capable of good growth and endurance in the commercial environment of the Precinct.

Any planting that is adjacent to vehicular and pedestrian access points is to ensure that vehicle drivers’ sightlines are maintained.

4.2.3 Frontage to Gregor Street West

The landscape treatment of Gregor Street West should have a close relationship to the landscaped environment of Memorial Drive and act as a landscaped link between Memorial Drive and Discovery Drive to the east. The secondary “local” nature of Gregor Street West is to be clearly illustrated through the design, location, types and spacing of plantings. Landscaping should be incorporated into private developed sites to reinforce the landscaping proposed along street frontages.

Landscaping is to promote safety and low speeds but with due concern for maintaining sightlines. Landscaping should be provided to buffer and screen functional elements of uses such as car parking and service areas, which may be visible along road frontages, to reduce their impacts upon the amenity and visual character of the Precinct.

4.2.4 Landscaped Car Parking 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 amenity impacts of car parking facilities. Car parking aisles should also be landscaped with low planting to enhance the appearance of car parking areas, while seeking to maintain visibility and sightlines. 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 parking areas. Car parking 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.

4.2.5 Landscape Buffer Planting

Unightly functional elements, including loading docks, waste storage, collection areas and plant and building services areas require appropriate screening measures. These should be integrated into overall building design and complemented 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 water efficiency in order to minimise mains potable water consumption.
- (iii) To encourage development which incorporates environmentally sustainable initiatives;
- (iv) To encourage waste recycling to minimise waste sent to landfill; and
- (v) 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 building design elements including; building orientation to optimise access of sunlight in winter and prevailing cooling breezes in summer, overhangs or awnings to shade windows, insulation in roof and walls
- (ii) implement energy efficient mechanical design to improve HVAC plant efficiency.
- (iii) implement energy efficient lighting systems and optimise natural lighting.
- (iv) implement building energy management systems which contribute to overall building energy efficiency;
- (v) 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;
- (vi) ensure construction activities comply with Council’s Policy LP32;
- (vii) implement effective noise mitigation measures to comply with the Environmental Protection Act, Environmental Protection Policy (Noise) and other relevant legislation where necessary;
- (viii) implement rainwater harvesting and reticulation systems and connect for non-potable or potable uses in accordance with required treatment level to contribute to reductions in mains potable water consumption;
- (ix) implement grey water reuse strategies to contribute to reductions in mains potable water consumption;

- (x) Implement strategies for reuse of stormwater runoff for landscape irrigation to contribute to reductions in mains potable water consumption;
- (xi) ensure that water quality management strategies are in place to achieve high levels of environmental and water quality;
- (xii) ensure noise generated from development is reasonable for the type of use;
- (xiii) 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;
- (xiv) implement suitable waste storage and disposal measures for recyclable and solid waste in accordance with Council regulations;
- (xv) avoid outdoor lighting that will adversely affect residential amenity and traffic safety and implement design elements and buffer treatments to control the obtrusive effects where appropriate;
- (xvi) 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
- (xvii) ensure that 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) administrative;
- (ii) commercial;
- (iii) medical;
- (iv) retail;
- (v) educational;
- (vi) professional services;
- (vii) mixed-use development; and
- (viii) Special use.

6.2 Undesirable Land Uses

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

7.0 Infrastructure

7.1 Infrastructure To Be Provided

The following infrastructure is to be provided for 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.

(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 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 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 303.84 ET; and
- (ii) For the purpose of assessing sewerage capacity, the estimated number of Equivalent Persons for this Precinct is 973.29 EP.