

# URBAN LAND DEVELOPMENT AUTHORITY

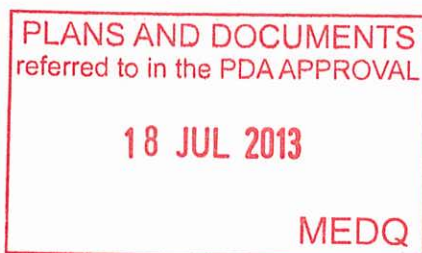
## PROPOSED RESIDENTIAL DEVELOPMENT THE VILLAGE – STAGE 12 RIVEREDGE BOULEVARD, OONONBA

### ENGINEERING REPORT RECONFIGURATION OF A LOT APPLICATION

Report No: ULD012/R01

Revision: A

Date: 1 February 2013



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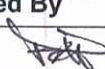
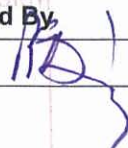
Urban Development  
Design Infrastructure  
Project Management

## TABLE OF CONTENTS

|      |                                      |   |
|------|--------------------------------------|---|
| 1    | INTRODUCTION .....                   | 1 |
| 2    | EXISTING SITE.....                   | 1 |
| 3    | PROPOSED DEVELOPMENT .....           | 1 |
| 4    | TRAFFIC AND ROADWAYS .....           | 1 |
| 4.1  | General .....                        | 1 |
| 4.2  | Internal Road Network.....           | 1 |
| 4.3  | Road Traffic Noise.....              | 2 |
| 5    | PUBLIC TRANSPORT .....               | 2 |
| 6    | WALKWAYS / BIKE PATHS.....           | 2 |
| 7    | ALLOTMENT EARTHWORKS.....            | 2 |
| 8    | STORMWATER DRAINAGE .....            | 3 |
| 8.1  | General .....                        | 3 |
| 8.2  | Ross River Q50 Flood Line.....       | 3 |
| 8.3  | Internal Drainage.....               | 3 |
| 8.4  | Major Drainage Path.....             | 3 |
| 9    | WATER RETICULATION .....             | 3 |
| 9.1  | Design Residential Populations ..... | 4 |
| 9.2  | Water Demand .....                   | 4 |
| 9.3  | Reticulation Mains .....             | 4 |
| 10   | SEWERAGE RETICULATION .....          | 4 |
| 10.1 | General.....                         | 4 |
| 10.2 | Design Residential Populations.....  | 5 |
| 10.3 | Sewerage Design Criteria .....       | 5 |
| 11   | POWER AND COMMUNICATIONS.....        | 5 |

## APPENDICES

Appendix A      The Village Stage 12 - Combined Services Plan

| REPORT AUTHORISATION |                                                                                     |                 |                                                                                     |                     |                                                                                       |
|----------------------|-------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------|
| Revision             |                                                                                     | Rev. Date       |                                                                                     | Report Details      |                                                                                       |
| A                    |                                                                                     | 1 February 2013 |                                                                                     | Issued for Approval |                                                                                       |
| Prepared By          |                                                                                     | Reviewed By     |                                                                                     | Authorised By       |                                                                                       |
| Chris Mellican       |  | Paul Petersen   |  | Patrick Brady       |  |

## **1 INTRODUCTION**

This report assesses the civil engineering aspects for the proposed 46 lot residential development known as Stage 12 of The Village. The land is to the north of The Village Stage 6 and is an extension of Riveredge Boulevard.

This report has been commissioned by the Urban Land Development Authority (ULDA) and forms part of the Reconfiguration of a Lot Application for Stage 12 of The Village prepared by Brazier Motti Pty Ltd.

## **2 EXISTING SITE**

The proposed development is located on an existing parcel of land described as Lot 7000 on SP247154 and is bound by Stage 6 and future residential land to the north and Ross River to the west.

The subject land is situated on the Ross River flood plain and consists of relatively flat terrain sloping gently in a north-easterly direction towards the Ross River. Immediately to the east of this stage is an existing central drainage swale which drains to the north into the Ross River.

## **3 PROPOSED DEVELOPMENT**

The Village Stage 12 is proposed to be developed into 46 residential lots of sizes ranging from 250m<sup>2</sup> to 608m<sup>2</sup>. The proposed allotment layout is shown on drawing ULD012/SK01 and included in Appendix A.

## **4 TRAFFIC AND ROADWAYS**

### **4.1 General**

The internal road hierarchy and road profiles proposed for Stage 12 of The Village are generally in accordance with the Urban Land Development Authority Guideline #6 – Street and Movement Network.

### **4.2 Internal Road Network**

Vehicle access to this stage of The Village development will be via the existing neighbourhood connector, Riveredge Boulevard, and the proposed new neighbourhood access streets, Intercept Circuit and Fighter Street.

Riveredge Boulevard is contained within a minimum 21.5m road reserve with the actual roadway to be 9.0m wide (asphalt). Rollover kerb and channel is proposed to the western side of the road to allow access to the adjacent allotments and barrier kerb and channel is proposed on the eastern side of the street to prevent access to the adjacent central drainage swale. One (1) 1.5m concrete footpath to cater for pedestrians is also to be constructed on the western side of the road with pram ramps at road intersections.

The new neighbourhood access streets, Intercept Circuit and Fighter Street, connect directly to Riveredge Boulevard and are contained within 15.0m wide road reserves with the actual roadway to be 6.3m wide (asphalt). Rollover kerb and channel is proposed to allow access to the adjacent allotments and no concrete footpaths to cater for pedestrians are proposed for these streets.

All line marking and signage requirements shall be in accordance with the Manual of Uniform Traffic control Devices.

The proposed road layout is shown on drawing ULD012/SK01 and included in Appendix A.

#### **4.3 Road Traffic Noise**

TTM Acoustics (TTM Consulting Pty Ltd) were previously commissioned to undertake noise assessments on relevant road and rail corridors adjacent to and within the subject lands. An Environmental Noise Impact Assessment (dated 17 November 2010), was produced for The Village overall and the report concludes that no additional acoustic treatment will be required for buildings within Stage 12 of The Village to compensate for the rail noise.

### **5 PUBLIC TRANSPORT**

The road network proposed for Stage 12 has been designed to allow for bus routes to be within 400m (or 5 minute walking distance) of a minimum of 90% of all residential allotments in accordance with Translink's target.

All allotments within Stage 12 are no more than 200m from the bus route which is the Neighbourhood Connector Road, Riveredge Boulevard, to be constructed in Stage 12.

### **6 WALKWAYS / BIKE PATHS**

A comprehensive walkway / bike path system is being developed for The Village. The walkway / bike paths take advantage of the linear open spaces and ensure connectivity to provide exercise loops.

### **7 ALLOTMENT EARTHWORKS**

AECOM were previously commissioned and produced a Geotechnical Assessment of Land Suitability for Residential Development for the subject lands. This report has subsequently been superseded by a report from Morrison Geotechnic Pty Ltd which confirms the site is stable and suitable for its intended purpose as a residential subdivision.

All allotments shall be reshaped where required to ensure positive drainage towards the roadways.

Allotment slopes will be 1 in 200 minimum to roadways or drainage reserves from residential allotments, and 1 in 400 minimum to non-residential allotments.

All allotment earthworks shall be carried out under Level 1 Geotechnical Supervision. Existing large and worthy vegetation shall be retained where possible on allotments, and within drainage reserves, notwithstanding the above filling requirements. Localised exceptions to minimum grades may be required around significant worthy trees to ensure retention.

Should a balanced cut to fill operation on site not be able to be achieved then the additional fill material required to create the allotments shall be imported.

Soil Erosion and Sediment Control Plans shall be prepared for the construction phase of the project, to minimise soil loss on the site prior to re-establishment of vegetation.

## **8 STORMWATER DRAINAGE**

### **8.1 General**

Stormwater drainage discharge shall be designed and constructed in accordance with the Townsville City Council's Aus-Spec Design Specification D5 and associated Handbook.

### **8.2 Ross River $Q_{100}$ Flood Line**

A stormwater drainage master planning report has been prepared by BMT WBM PTY Ltd to provide details into flooding and flood impacts associated with the proposed development of The Village. This report indicates that the proposed development will have very little impact on the existing flood levels in the Ross River. All allotments in Stage 12 of The Village will need to have a minimum finished surface level of 4.4m AHD internally and 4.7m AHD along the western boundary of Ross River.

From preliminary site grading and stormwater analysis undertaken to date, it is considered that the stormwater drainage for the site is manageable through filling of the site. Further detailed stormwater modelling and design will be undertaken for Stage 12 and supplied with the Operational Works Application.

### **8.3 Internal Drainage**

Minor system (ARI  $Q_2$ ) stormwater shall be discharged from allotments to roadways via overland discharge and shall be collected and transported via roadway kerb and channel, kerb inlet pits, and underground stormwater drainage pipes to the drainage system constructed with Stage 12 of The Village which ultimately discharges into the adjacent central drainage swale.

Major system (ARI  $Q_{100}$ ) stormwater flows, surplus to the minor system capacity, shall be transported via the roadways in Stage 12 to the central drainage swale and discharged as per normal Council requirements.

### **8.4 Major Drainage Path**

The existing drainage corridor at the eastern extent of Stage 12 and travelling northward shall be retained and modified where required to convey large-event flows ( $Q_{100}$ ) and minor event discharges to the point of discharge being the Ross River at the northern end of the overall development site.

The preliminary stormwater drainage layout is shown on drawing ULD012/SK01 and included in Appendix A.

## **9 WATER RETICULATION**

Water supply to Stage 12 of The Village shall be via reticulated underground PVC water mains with connection to the reticulation water mains constructed with Stage 6.

## 9.1 Design Residential Populations

For areas where traditional residential allotments have been proposed, the population is assumed to be **2.8** persons per allotment (EP).

For allotments that are less than 400m<sup>2</sup> in area the following populations are assumed per allotment (EP).

- 2.0 EP per lot for lots with areas of less than 200m<sup>2</sup>;
- 2.4 EP per lot for lots with an area of 200m<sup>2</sup> to 299m<sup>2</sup>; and
- 2.6 EP per lot for lots with an area of 300m<sup>2</sup> to 399m<sup>2</sup>.

## 9.2 Water Demand

Water Demand has been calculated as 0.048 l/s/EP in accordance with the current Townsville Water design standards.

The above water demands will be applied to the Stage 12 water network model and the updated overall network model for The Village and provided as part of the Operational Works application.

Flanagan Consulting Group was previously commissioned to undertake an External Water Supply Planning Report dated 21 November 2010. This report concluded that approximately 170 allotments could be developed at The Village prior to the requirement of augmenting the external water infrastructure to ensure minimum pressure requirements are maintained. Stages 1 - 3 of The Village will exceed the maximum number of allotments that the existing water infrastructure can accommodate. Therefore augmentation of the external water infrastructure is required to be undertaken prior to or in parallel with the construction of Stage 12 of The Village in accordance with ULDA Oonoonba Residential Development – External Water Supply Planning Report – 21 December 2010.

## 9.3 Reticulation Mains

The DN 200mm PVC water main in Riveredge Boulevard, Stage 6, will be extended to the northern extremity of Stage 12 before reducing into a DN150mm PVC water main and will service those lots gaining access from Riveredge Boulevard. A DN 100mm PVC water main is required to Fighter Street and Intercept Circuit to service all adjacent allotments along with a 63mm polyethylene rider main used to service all other allotments.

Valves, hydrants and allotment services shall be provided in accordance with normal Council requirements.

The preliminary water reticulation layout plan for The Village Stage 12 is shown on drawing ULD012/SK01 and included in Appendix A.

## 10 SEWERAGE RETICULATION

### 10.1 General

Sewerage north of Riveredge Boulevard shall be discharged via gravity reticulation sewers to the proposed sewage pump station (PS 4), immediately adjacent to Riveredge Boulevard and is to be constructed with Stage 12 of The Village.

All other sewerage shall be discharged via gravity reticulation sewers to the sewage pump station (PS 1) immediately adjacent to Stage 3 and constructed with Stage 1 of The Village.

All lots will be serviced by a 150mm sewer on a 1.5m alignment and house connections will discharge into a manhole for ease of future maintenance.

The preliminary sewer reticulation layout for The Village Stage 12 is shown on drawing ULD012/SK01 and included in Appendix A.

## **10.2 Design Residential Populations**

For the proposed residential allotments the population is assumed to be **2.8** persons per allotment (EP).

## **10.3 Sewerage Design Criteria**

The sewerage network shall be designed generally in accordance with Water Systems Australia Specification WSA-03 and Townsville City Council amendments.

# **11 POWER AND COMMUNICATIONS**

Negotiations shall be undertaken with utility service providers for the supply of electricity and telecommunications to the development.

Preliminary discussions reveal that the supply of power and telecommunications to the proposed development is possible.

**APPENDIX A**  
**PRELIMINARY SERVICES LAYOUT PLAN**



- LEGEND:**
- PROPOSED SEWER MAIN & MANHOLE
  - PROPOSED WATERMAIN & HYDRANT
  - PROPOSED STORMWATER DRAINAGE
  - EXISTING SEWER MAIN & MANHOLE
  - EXISTING WATERMAIN, VALVE & HYDRANT
  - EXISTING STORMWATER DRAINAGE
  - PROPOSED NEW PAVEMENT
  - PROPOSED FOOTPATH



**PRELIMINARY ISSUE NOT FOR CONSTRUCTION**

| NO. | DATE     | REVISIONS                                     |
|-----|----------|-----------------------------------------------|
| 1   | 15/02/20 | PRELIMINARY ISSUE FOR DEVELOPMENT APPLICATION |



The use of the ISO 9001 certification logo by UDP Consulting Engineers is a statement of the company's commitment to quality management. It is not a guarantee of the quality of any specific project or service. The certification is issued by JAS-ANZ, a registered certification body.

**REAL PROPERTY DESCRIPTION:**  
LOTS 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 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