BROWN

Smart Consulting

MOLONGLO TRUNK SEWER, STORMWATER DIVERSION & MOLONGLO INFRASTRUCTURE STAGE 1D/2A OVERLAP

DEVELOPMENT APPLICATION REPORT

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TABLE OF CONTENTS

EXECUTIVE SUMMARY **1**
1 INTRODUCTION **4**
2 OBJECTIVES **5**
3 BACKGROUND **5**
3.1 TRUNK SEWER AND STORMWATER DIVERSION 5
3.2 MOLONGLO INFRASTRUCTURE STAGE 1D/2A OVERLAP 8
4 DESIGN DETAILS **8**
4.1 Existing Molonglo Trunk Sewer 8
4.2 Molonglo Trunk Sewer – Design Details 9
4.3 Stormwater Diversion Pipe – Design Details 10
4.4 Molonglo Infrastructure Stage 1D/2A Overlap 12
4.4.1 Temporary Road Connection to Existing Coppins Crossing Road 12
4.4.2 Public Utilities and Lighting 13
4.4.3 Water Main 14
4.4.4 Sewer 14
4.4.5 Drainage 14
4.4.6 Landscaping 14
5 STATEMENT AGAINST RELEVANT CRITERIA **16**
6 ASSESSMENT OF ENVIRONMENTAL EFFECTS **17**
6.1 General 17
6.2 Pink-Tailed Worm Lizard (Aprasia parapulchella) 18
7 COST OPINION **19**
8 CONSTRUCTION TIMING AND PROCUREMENT **19**

APPENDICES

A. DA DRAWINGS
B. STATEMENT AGAINST RELEVANT CRITERIA
C. S211 EXEMPTION LETTER
D. TREE ASSESSMENT FOR MOLONGLO 2
E. DISCUSSIONS WITH ROADS ACT
F. DISCUSSIONS WITH TELSTRA

EXECUTIVE SUMMARY

This report has been prepared by Brown Consulting (ACT) Pty Ltd for ACT Shared Services Procurement to accompany the Development Application (DA) drawings for this project.

ACT Shared Service Procurement (SSP) on behalf of Economic Development Directorate (EDD) has engaged Brown Consulting to undertake design of the proposed Molonglo Trunk Sewer to enable development in Molonglo Stage 2 and associated stormwater works for Molonglo 1 (North Wright). The project involves:

- Molonglo Trunk Sewer (MTS) or Sewer 1 from MH31 to John Gorton Drive (JGD) in Molonglo Stage 2 a distance of approximately 1.3km; and
- Stormwater main (450mm to 1200mm diameter) to divert the following peak discharges to the Holden's Creek Pond:
    - The 1 in 1 month ARI peak flows from Catchment C identified in Coombs Ponds – PSP Report, Indesco, June 2010.
    - The 1 in 5 year ARI peak flows from the proposed development in North Wright, between John Gorton Drive 1D and the proposed Molonglo Trunk Sewer.
    - The 1 in 1 month ARI peak flows from the proposed 825mm diameter culvert under JGD 1D near chainage 13220.
    - The 1 in 1 month ARI peak flows from the proposed 450mm diameter outlet under JGD 1D at chainage 13220.

The objective of this project is to extend the Molonglo Trunk Sewer from MH31 to John Gorton Drive Stage 1D to service the first stage (Release Area B1) of Molonglo Stage 2. The proposed stormwater diversion pipe will carry the post development flows from upstream catchment to the recently constructed Holden's Creek Pond for water quality treatment.

The key features of the proposed trunk sewer main are described below:

- Construction of a 1.3km long trunk sewer main from MH31 to the southern verge of Pond S1-1 Road in Molonglo Stage 2. The sewer main size ranges from 300mm diameter to 500mm diameter, at minimum 0.7% grade.
- Construction of three sewer branch lines (approx. length 200m), which connect to the proposed sewer crossings in JGD Stage 1D.
- The typical depth of the sewer main is between 1.1m and 3.5m. Wherever possible, the trench depth has been limited to minimise the extent of excavation.
- The sewer main is designed to integrate with the proposed JGD Stage 2A. The alignment between MH S27 and MH S21 will run along the median of JGD Stage 2A to ensure the sewer main will not clash with other services.

- The sewer main avoids the medium and high quality PTWL habitat, however, its footprint in the low quality PTWL habitat is approximately 1050m2, between MH S66 and MH S69 (refer drawing C11124-C012+).
- The vertical clearance to the existing bulk water mains (900mm and 1200mm diameter) is 0.6m, which complies with ActewAGL's requirements.
- ActewAGL advised that no venting measures would be required for the sewer main.
- The design is undertaken in accordance with the *ActewAGL Water Supply and Sewerage Standards*.

The key features of the proposed trunk stormwater main are described below:

- Construction of a 833m long trunk stormwater diversion main to divert the peak discharge from upstream catchment to the Holden's Creek Pond for water quality treatment purpose. The pipe size ranges from 450mm to 1200mm diameter, at 0.6% grade.
- Construction of a triple R type sump in the proposed concrete lined channel (DRAIN 32) in JGD Stage 1D to capture 0.2 m^3/s (1 in 1 month ARI peak flows) from Catchment C identified in Coombs Ponds – PSP Report, Indesco, June 2010;
- Construction of a 300mm diameter precast concrete headwall downstream of the proposed 450mm and 825mm diameter culverts in JGD Stage 1D to capture 0.08 m^3/s (1 in 1 month ARI peak flows) from these culverts. This headwall and the 300mm diameter pipe will be used as temporary inlet structure only. Once the North Wright Estate is developed the structure can be removed and the development can connect to the proposed manhole and 600mm diameter tie, which connects to the trunk stormwater diversion main.
- Connection to the Holden's Creek Pond via a 1200mm diameter headwall and stone pitching apron quality treatment purpose (refer to Drawing C11124-031+). The invert of the pipe at headwall is just above RL550.5, the TWL of the pond.
- The vertical clearance to the existing bulk water mains (900mm and 1200mm diameter) is 0.6m, which complies with ActewAGL's requirements.
- The horizontal clearance between the sewer and stormwater main is 4m.
- The typical depth of the stormwater main is between 1.2m and 4m. Wherever possible, the trench depth has been limited to minimise the extent of excavation.
- The design is undertaken in accordance with the *ACT Design Standards for Urban Infrastructure – Stormwater*.

Brown Consulting (BC) has also been engaged by Shared Services Procurement (SSP) to undertake design and construction tender for John Gorton Drive Extension (JGDE) Stage 2A from the end of Molonglo Infrastructure Stage 1D (Chainage 13,700) to a new connection to Coppins Crossing Road further north. The Preliminary Sketch Plan (PSP) Stage 2A documentation of JGDE and associated intersections has been developed based upon the Draft

Molonglo 2 Planning and Design Framework (PDF) document completed in 2011. The PSP JGDE Stage 2A documentation was submitted to SSP in March 2012.

There is an overlap section between JGDE Stage 2A and Molonglo Infrastructure Stage 1D as Stage 1D's extent of works encroaches approximately 415m into Molonglo Stage 2. To suit the preferred Group Centre location documented in the Draft PDF document (2011), JGDE Stage 2A PSP alignment differs from Stage 1D alignment in the vicinity of the overlap. This has resulted in a requirement to amend the approved Molonglo Infrastructure Stage 1D Development Application and tender documentation (originally submitted by GHD) from Chainage 13,620 to approximately Chainage 13,985 of alignment MC05.

This report also includes the amendments to the approved Development Application (DA) documentation of Molonglo Infrastructure Stage 1D as a consequence of the differing JGDE Stage 2A road alignment.

1 INTRODUCTION

This report was prepared by Brown Consulting (ACT) Pty Ltd for ACT Shared Services Procurement to accompany the Development Application drawings for this project.

The following drawings form an integral part of the Development Application submission:

DRAWING NO.	DESCRIPTION
MTS & SW DIVERSION	
C11124-000+	COVER SHEET, DRAWING SCHEDULE & LOCALITY PLAN
C11124-001+	GENERAL ARRANGEMENT
C11124-002+	GENERAL NOTES & LEGEND - SHEET 1
C11124-003	GENERAL NOTES - SHEET 2
C11124-010	TYPICAL CONSTRUCTION CROSS SECTIONS
C11124-012+	CONSTRUCTION MANAGEMENT PLAN INCLUDING POLLUTION CONTROL
C11124-020+	SEWER MASTER PLAN
C11124-021	SEWER CATCHMENT DATA
C11124-023+	SEWER DETAIL PLAN - SHEET 1
C11124-024+	SEWER DETAIL PLAN - SHEET 2
C11124-025+	SEWER DETAIL PLAN - SHEET 3
C11124-026+	SEWER LONGITUDINAL SECTION - SHEET 1
C11124-027+	SEWER LONGITUDINAL SECTION - SHEET 2
C11124-028+	SEWER LONGITUDINAL SECTION - SHEET 3
C11124-030+	STORMWATER DETAIL PLAN - SHEET 1
C11124-031+	STORMWATER DETAIL PLAN - SHEET 2
C11124-032+	STORMWATER DETAIL PLAN - SHEET 3
C11124-035+	STORMWATER LONGITUDINAL SECTION - SHEET 1
C11124-036+	STORMWATER LONGITUDINAL SECTION - SHEET 2
C11124-037+	STORMWATER LONGITUDINAL SECTION - SHEET 3
C11124-038+	STORMWATER LONGITUDINAL SECTION - SHEET 4
MOLONGLO INFRASTRUCTURE STAGE 1D/2A OVERLAP	
C10104 – DA000+	COVER SHEET
C10104 – DA001	DRAWING SCHEDULE
C10104 – D005	SCPE OF WORKS
C10104 – D041	GENERAL ARRANGEMENT SHEET 1
C10104 – D042	GENERAL ARRANGEMENT SHEET 2
C10104 – D090+	WATERMAIN PLAN AND LONGITUDINAL SECTION
C10104 – D110+	PUBLIC UTILITIES & LIGHTING PLAN SHEET 1
C10104 – D111+	PUBLIC UTILITIES & LIGHTING PLAN SHEET 2
C10104 – D112+	PUBLIC UTILITIES & LIGHTING PLAN SHEET 3
C10104 – D131+	EROSION & SEDIMENT CONTROL CONCEPT PLAN SHEET 1
C10104 – D132+	EROSION & SEDIMENT CONTROL CONCEPT PLAN SHEET 1
C10104 – D140+	TREE MANAGEMENT PLAN SHEET 1
C10104 – D141+	TREE MANAGEMENT PLAN SHEET 2
C10104 – D145+	LANDSCAPING PLAN SHEET 1
C10104 – D146+	LANDSCAPING PLAN SHEET 2

Copies of the above drawings are found at **Appendix A**.

2 OBJECTIVES

The objective of this project is to extend the Molonglo Trunk Sewer from MH31 to John Gorton Drive Stage 1D to service the first stage (Release Area B1) of Molonglo Stage 2. The proposed stormwater diversion pipe will carry the post development flows from upstream catchment to the recently constructed Holden's Creek Pond for water quality treatment.

Another objective of this report is to include the amendments to the approved Molonglo Stage 1D works as a consequence of the differing JGDE Stage 2A Road alignment.

3 BACKGROUND

3.1 TRUNK SEWER AND STORMWATER DIVERSION

Shared Service Procurement (SSP) on behalf of Economic Development Directorate (EDD) has engaged Brown Consulting to undertake design of the proposed Molonglo Trunk Sewer to enable development in Molonglo Stage 2. The project initially involved:

- Molonglo Trunk Sewer (MTS) or Sewer 1 from MH31 to John Gorton Drive in Molonglo Stage 2 a distance of approximately 1.3km; and
- 450mm diameter stormwater main to divert the one year flow from catchment C as defined in Indesco Coombs Pond PSP report (17/06/10 -4602 ver 4) to the Holden's Creek Pond (pond B).

After the draft FSP submission in March 2012, the brief was varied and the stormwater main was further investigated to divert the following peak discharges to the Holden's Creek Pond:

- The 1 in 1 month ARI peak flows from Catchment C identified in Coombs Ponds – PSP Report, Indesco, June 2010.
- The 1 in 5 year ARI peak flows from the proposed development in North Wright, between John Gorton Drive 1D and the proposed Molonglo Trunk Sewer.
- The 1 in 1 month ARI peak flows from the proposed 825mm diameter culvert under JGD 1D near chainage 13220.
- The 1 in 1 month ARI peak flows from the proposed 450mm diameter outlet under JGD 1D at chainage 13220.

In 2009, Brown Consulting prepared the Molonglo Trunk Sewer (MTS) Preliminary Sketch Plans (PSP) (Project No C08084, July 2009). The PSP included a sewer masterplan for the servicing of Molonglo Stage 1 and an area of approximately 81Ha with an equivalent population (EP) of 4615 in Molonglo Stage 2. Preliminary longitudinal profiles were produced for the 4 km sewer.

The masterplans were accepted by ActewAGL and subsequently a Development Application and Tender documentation were prepared for the first 2.65km of the MTS. In subsequent work on the Molonglo Stage 2 Planning Design Framework (PDF) and the Molonglo 2 Masterplans & Concept Design Brown Consulting has reconfirmed the efficacy of the MTS strategy as set out in the July 2009 PSP design.

The Molonglo Stage 2 Masterplans identified the extension of the MTS or Sewer 1 is critical to the initial land releases in Molonglo Stage 2. The construction of the sewer will enable the southern catchment of Molonglo Stage 2 to be developed.

This consultancy includes:

- review of the Molonglo Stage 2 Master Plan Concept Design Report;
- preparation of the Final Sketch Plan Documentation;
- preparation of Development Application;
- preparation of final design and tender documentation; and
- tender report.

Brown Consulting has reviewed the MTS PSP, Molonglo Stage 2 Masterplans & Concept Design report and other relevant studies. Issues identified during the review process and refinements made to address each issue are described in this report.

The report also describes the following elements:

- The updated sewer flows and pipe sizes;
- The preferred sewer and stormwater alignment;
- The typical construction cross section; and
- The cost estimates for the sewer pipes and stormwater diversion pipe.

The following information and previous studies were reviewed during the study:

- WAE drawings for the existing Bulk Water Supply (BWS) Easement, ActewAGL
- Preliminary Sketch Plan (PSP) for Molonglo Trunk Sewer (MTS), Brown Consulting, July 2009
- Civil Infrastructure Assessment, Molonglo Stage 2 Background Investigations, AECOM, October 2010
- Strategic Sewerage Master Plan – Molonglo Valley – Amendment Stage 2, ActewAGL, July 2010
- Molonglo Stage 2 – Water, Sewer and Stormwater Master Plans & Concept Design, Brown Consulting, November 2011
- Coombs Ponds Preliminary Sketch Plan, Indesco, June 2010
- Draft Planning and Design Framework, Molonglo Valley Stage 2, SGS, July 2011
- Molonglo Valley Plan for the Protection of Matters of National Environmental Significance (NES Plan), ESDD, September 2011
- Molonglo Sewer – John Gorton Drive Stage 1D – Sewer Crossings, Brown Consulting, October 2011
- Detailed Survey of Molonglo Stages 1 and 2, LANDdata, October 2011
- Uriarra Road – John Gorton Drive to Stromlo Park Entry Options Study, Brown Consulting, October 2011

- North Wright – Schematic Option 1, ESDD, November 2011
- WAE drawings for the recently completed Molonglo Trunk Sewer (including the proposed connection point MH31), Brown Consulting, November 2011
- John Gorton Drive Extension to Molonglo 2, Brown Consulting, January 2012

The following documents were used to design the trunk sewer and stormwater diversion pipe:

- *ACTEW Corporation- Water Supply and Sewerage Standard (AWSSS)*
- *ACT Design Standards for Urban Infrastructure – Stormwater*

3.2 MOLONGLO INFRASTRUCTURE STAGE 1D/2A OVERLAP

John Gorton Drive (known previously as the North-South Arterial) is the main arterial road through the proposed development of Molonglo. When complete it will connect Cotter Road at the southern end, to William Hovell Drive at the northern end and will include a new bridge crossing over the Molonglo River.

The future East-West Arterial (EWA) is expected to connect with John Gorton Drive, at approximately Chainage 14,650, and will be a major intersection near the proposed Group Centre. When constructed the EWA will continue east over the Molonglo River connect Molonglo to the Tuggeranong Parkway.

Brown Consulting (BC) was engaged by Shared Services Procurement (SSP) to undertake design and construction tender for John Gorton Drive Extension (JGDE) Stage 2A from the end of Molonglo Infrastructure Stage 1D (Chainage 13,700) to a new connection to Coppins Crossing Road further north. The Preliminary Sketch Plan (PSP) Stage 2A documentation of JGDE and associated intersections has been developed based upon the Draft Molonglo 2 Planning and Design Framework (PDF) document completed in 2011. The PSP JGDE Stage 2A documentation was submitted to SSP in March 2012.

There is an overlap section between JGDE Stage 2A and Molonglo Infrastructure Stage 1D as Stage 1D's extent of works encroaches approximately 415m into Molonglo Stage 2. To suit the preferred Group Centre location documented in the Draft PDF document (2011), JGDE Stage 2A PSP alignment differs from Stage 1D alignment in the vicinity of the overlap. This has resulted in a requirement to amend the approved Molonglo Infrastructure Stage 1D Development Application and tender documentation (originally submitted by GHD) from Chainage 13,620 to approximately Chainage 13,985 of alignment MC05.

The Development Application documentation for Molonglo Infrastructure 1D was submitted in October 2011 and the approval was obtained on the 6th of January 2012.

The proposed changes to Molonglo Infrastructure Stage 1D works do not significantly change the original design intent and scope of works or affect any entities or public stakeholders. The proposed changes are considered to have positive impacts as it would suit JGDE Stage 2A works of which construction is anticipated to commence later in the year and would facilitate the design of JGDE Stage 2A currently being undertaken as a separate project.

4 DESIGN DETAILS

4.1 Existing Molonglo Trunk Sewer

There are no existing trunk sewer mains within Molonglo Stage 2 development site. A new trunk sewer will be required to service the first land release Area B1 in Molonglo Stage 2. The connecting point for the proposed sewer is to the Molonglo Trunk Sewer (MTS) at manhole 31.

The first stage of MTS, which was completed in November 2011, is located south and east of Molonglo Stage 2. The MTS will service the new suburbs of Coombs and Wright as well as a

portion of Molonglo Stage 2. The MTS will connect to the existing MVIS approximately 5.5km to the east of Molonglo Stage 2 at an existing structure on the south bank of the Molonglo River. The recently completed construction contract delivered approximately 2.65km of 600mm and 500mm diameter sewer to the east side of the Holden's Creek pond embankment about 1.5km from Molonglo Stage 2 .

The MTS has been designed to accept the following flow from Molonglo Stage 2.

Node	A	B
Cumulative Net Gravity Sewered Area (Ha)	80.9	136.9
Cumulative Total Equivalent Population	4615	9408
PWWF (L/s)	90.4	153.2
Pipe Size (mm)	300	450
Pipe Grade (%)	0.4	0.4

*Source: Brown, Molonglo Trunk Sewer Master Plan, July 2009

4.2 Molonglo Trunk Sewer – Design Details

The proposed MTS extension will start from MH31 (on the eastern side of Holden's Creek Pond) to the southern verge of Pond S1-1 Road in Molonglo Stage 2 adjacent John Gorton Drive.

The design EP calculated in the Preliminary Sketch Plan for Molonglo Trunk Sewer was revised based on the updated information described above.

Node	A Revised	B Revised
Cumulative Net Gravity Sewered Area (Ha)	78	129
Cumulative Total Equivalent Population	4478	8146
PWWF (L/s)	87.9	139.7
Pipe Size (mm)	375	375
Pipe Grade (%)	0.7	0.7

It is understood that there is an existing 500mm diameter stub constructed at the proposed connection point to MTS MH31. Although the pipe size can be reduced to 375mm diameter at Node B, it is recommended to use 500mm diameter pipe across the Holden's Creek Pond embankment and connect to the existing manhole to provide reserve capacity for possible future development in Stromlo Forest Park.

The alignment will be located within the following blocks:

- MHs S13 – S66 in Block 1187 Weston *Creek (or Block 23 Molonglo Valley)*: the sewer transverses *TSZ1: Transport*, *RZ5: High Density Residential, NUZ4: River Corridor* shown in the Territory Plan.
- MHs S66 – 31 in Blocks 658 and 1171 Weston Creek *(or Blocks 24 & 25 Molonglo Valley)*: the sewer transverses *RZ1: Suburban, NUZ4: River Corridor* shown in the Territory Plan.

The design of the proposed sewer main is designed in accordance with *ActewAGL's Water Supply and Sewerage Standards*. The key features of the proposed trunk sewer main are described below

- Construction of a 1.3km long trunk sewer main from MH31 to the southern verge of Pond S1-1 Road in Molonglo Stage 2. The sewer main size ranges from 300mm diameter to 500mm diameter, at minimum 0.7% grade.
- Construction of three sewer branch lines (approx. length 200m), which connect to the proposed sewer crossings in JGD Stage 1D.
- The typical depth of the sewer main is between 1.1m and 3.5m. Wherever possible, the trench depth has been limited to minimise the extent of excavation.
- The sewer main is designed to integrate with the proposed JGD Stage 2A. The alignment between MH S27 and MH S21 will run along the median of JGD Stage 2A to ensure the sewer main will not clash with other services.
- The sewer main avoids the medium and high quality PTWL habitat, however, its footprint in the low quality PTWL habitat is approximately 1050m2, between MH S66 and MH S69 (refer drawing C11124-C001+& 012+).
- The vertical clearance to the existing bulk water mains (900mm and 1200mm diameter) is 0.6m, which complies with ActewAGL's requirements.
- ActewAGL advised that no venting measures would be required for the sewer main.

Construction will be carried out in a fenced alignment (refer drawings C1124-C010 & C012+) to minimise impact on the existing landscape. The sewer main has been designed to avoid the medium and high quality PTWL habitat. At its closest point the centreline of the main is 50m from the medium quality PTWL habitat and 105m from the high quality PTWL. There are no regulated trees on the construction alignment.

4.3 Stormwater Diversion Pipe – Design Details

The proposed stormwater main is designed to divert the following peak discharges to the Holden's Creek Pond for water quality treatment:

- The 1 in 1 month ARI peak flows from Catchment C identified in Coombs Ponds – PSP Report, Indesco, June 2010.
- The 1 in 5 year ARI peak flows from the proposed development in North Wright, between John Gorton Drive 1D and the proposed Molonglo Trunk Sewer.
- The 1 in 1 month ARI peak flows from the proposed 825mm diameter culvert under JGD 1D near chainage 13220.
- The 1 in 1 month ARI peak flows from the proposed 450mm diameter outlet under JGD 1D at chainage 13220.

A XP-RAFTS model was set up to analyse the cumulative peak discharge from the above sources. The modelling results and the associated minimum pipe size required at the key stormwater manholes/nodes are summarised in the table below. The pipe size was determined based on minimum grade of 0.6%. The invert of the outlet structure was assumed to be at the Holden's Creek Pond Top Water Level (TWL) RL550.5.

MH No.	Peak Q5 (Cumulative) (m^3/s)	Minimum Pipe Size @ 0.6% Grade (mm)
A22	0.77	DN750
A28	1.46	DN900
A37	2.06	DN1050
A52	2.60	DN1200

The stormwater alignment runs approximately parallel to the sewer alignment, passing through Blocks 658, 1171 and 1187 Weston Creek.

The design is undertaken in accordance with the *ACT Design Standards for Urban Infrastructure – Stormwater*. The key features of the proposed trunk stormwater main are described below:

- Construction of a 833m long trunk stormwater diversion main to divert the peak discharge from upstream catchment to the Holden's Creek Pond for water quality treatment purpose. The pipe size ranges from 450mm to 1200mm diameter, at 0.6% grade.
- Construction of a triple R type sump in the proposed concrete lined channel (DRAIN 32) in JGD Stage 1D to capture 0.2 m^3/s (1 in 1 month ARI peak flows) from Catchment C identified in Coombs Ponds – PSP Report, Indesco, June 2010;
- Construction of a 300mm diameter precast concrete headwall downstream of the proposed 450mm and 825mm diameter culverts in JGD Stage 1D to capture 0.08 m^3/s (1 in 1 month ARI peak flows) from these culverts. This headwall and the 300mm diameter pipe will be used as temporary inlet structure only. Once the North Wright Estate is developed, structure can be removed and the development can connect to the proposed manhole and 600mm diameter tie, which drains to the trunk stormwater diversion main.

- Connection to the Holden's Creek Pond via a 1200mm diameter headwall and energy dissipator (stone pitching structure) for water quality treatment purpose (refer to Drawing C11124-032+). The invert of the headwall was designed to be at RL550.5, which is the TWL of the pond.
- The vertical clearance to the existing bulk water mains (900mm and 1200mm diameter) is 0.6m, which complies with ActewAGL's requirements.
- The horizontal clearance between the sewer and stormwater main is 4m.
- The typical depth of the stormwater main is between 1.2m and 4m. Wherever possible, the trench depth has been limited to minimise the extent of excavation.

4.4 Molonglo Infrastructure Stage 1D/2A Overlap

Molonglo Infrastructure Stage 1D design parameters have been adopted and the extent of earthworks of the revised alignment in the vicinity of Molonglo Infrastructure Stage 1D/2A overlap are shown on C10104 – D041 and D042.
Shifting the median centreline to the east resulted in an additional earthworks' footprint due to the existing natural ground, east of the alignment, is generally sloping away from the existing Coppins Crossing Road.

A compound curve was introduced in the vicinity of Molonglo Infrastructure Stage 1D/2A to enable the horizontal alignment of JGD Stage 1D to align with JGD Stage 2A's. The compound curve consists of the 805m radius (measured at the centreline of the median) followed by a 530m radius. Discussions with Roads ACT during JGDE Stage 2A PSP documentation concluded acceptance of the proposed alignment compound curves proposed in the project. It was noted that the proposed radii of the compound curves are not ideal in a green field project. The design radii, however, are well above the minimum suitable for an 80km/h design speed and the compound curves have been accepted in this instance. A warning sign is proposed to enhance the message to road users of the curve change and to address the condition requested by Roads ACT. Relevant correspondence between Brown Consulting and Roads ACT is included in the Appendices.

4.4.1 Temporary Road Connection to Existing Coppins Crossing Road

There is a temporary road connection to existing Coppins Crossing Road proposed in Molonglo Infrastructure Stage 1D works, located in the vicinity of the Molonglo Infrastructure 1D/2A overlap. This temporary road connection has been redesigned to allow smooth transition between the revised main alignment in the vicinity of Molonglo Infrastructure 1D/2A overlap and the existing Coppins Crossing Road.
The minor amendments to the temporary road connection to the existing Coppins Crossing Road are as follows:

- The southern end of northbound carriageway of the temporary road connection has been moved from approximately Chainage 13,708 to Chainage 13,700 of MC05.
- The southern end of southbound carriageway of the temporary road connection has been moved from approximately Chainage 13,672 to Chainage 13,637 of MC00.
- No change to the northern end of the temporary road connection on Coppins Crossing Road for both southbound and northbound carriageway.

Refer to C10104 – D041 and 042 for details.

4.4.2 Public Utilities and Lighting

4.4.2.1 Shared Trenches

The proposed shared trench ST2 and ST4 alignments have been amended to suit the revised alignment in the vicinity of Molonglo Infrastructure Stage 1D/2A overlap.

No change to the extent of these shared trenches constructed as part of Molonglo Infrastructure Stage 1D is proposed in the vicinity of Molonglo Infrastructure 1D/2A overlap. Refer to C10104 – D110+ to 112+ for details.

4.4.2.2 Future Gas Main Reservation

Jemena requested for the future gas main reservation to be located closer to the property boundary as part of JGDE Stage 2A works. This request has been extended through within Molonglo Infrastructure 1D/2A overlap section. Refer to C10104 – D110+ to 112+ for details.

4.4.2.3 Street Lighting

The proposed street lighting has been amended to suit the revised alignment in the vicinity of Molonglo Infrastructure 1D/2A overlap.

A deletion of the last street light pole (Pole 42) on the southbound lane is proposed due to its location within the pavement of temporary road connection. Refer to C10104 – D110+ to 112+ for details.

4.4.2.4 Telstra Relocation

Telstra assets are present in the vicinity of the project, generally follows the alignment of Coppins Crossing Road with a number of pit structures including access chambers and jointing pits located within the road reserve.

Some works in the vicinity of Molonglo Infrastructure 1D/2A overlap will require cutting into existing Coppins Crossing Road, thus relocation of Telstra assets is critical prior to the construction of Molonglo Infrastructure 1D/2A overlap.

Temporary relocation design of the asset has been undertaken by Telstra Team. Telstra has advised that no DA is necessary for the relocation works and their email confirmation is included in the appendices.

4.4.3 Water Main

The proposed alignment of water mains has been amended to suit the revised road alignment in the vicinity of JGDE Stage 1D/ 2A overlap.
No change to the extent of water main constructed as part of Molonglo Infrastructure Stage 1D is proposed in the Molonglo Infrastructure 1D/2A overlap. Refer to C10104 – D090+ for details.

4.4.4 Sewer

A number of sewer crossings beneath Molonglo Infrastructure Stage 1D have been included as part of Stage 1D design and documentation drawings. No change is proposed to these sewer crossings.
A construction of a trunk sewer documented as part of MTS extension and Stormwater Diversion project is proposed to be included in Molonglo Infrastructure Stage 1D. This is additional to the original scope of work of Molonglo Infrastructure Stage 1D. Refer to C11124 drawing series for details.

4.4.5 Drainage

The original intent of Molonglo Infrastructure Stage 1D stormwater design has not changed.
The amendments to the stormwater drainage network are as follows:

- The locations of road drainage structures have been adjusted to suit the revised road alignment and earthworks.
- Deletion of a number of road drainage pipes and structures as they are no longer required due to the revised earthworks.
- The twin 1350mm diameter culverts have been realigned to suit the location of the future Water Quality Control Pond (WQCP) proposed in JGDE Stage 2A and lowering of the upstream levels of the culvert has also been proposed to ensure these culverts can convey flows from the future WQCP.

Refer to C10104 – D070+ to 073+ for details.

4.4.6 Landscaping

4.4.6.1 Protection and Removal of Existing Trees

Due to the change in the footprint of the earthworks, Molonglo Infrastructure 1D/2A works requires additional removal of three of poor quality trees (tree number 13035, 13036 and 13037). Refer to C10104 – D140+ to 141+ for details.

These trees are classified as of poor quality based on the Tree Assessment for Molonglo Stage 2 dated December 2012 by Scenic Landscape Architecture. A copy of the tree assessment sheets and relevant plans for these trees is included in the appendices.

There are trees proposed to be planted as part of this work and they are discussed in section below.

4.4.6.2 Landscaping design

The original intent of Molonglo Infrastructure Stage 1D landscape design has not changed.

The amendments to Molonglo Infrastructure Stage 1D landscape design are mainly reduction on the number of trees on the verges and median to suit the revised temporary road connection and to be cleared of JGDE Stage 2A works.

The main changes in the vicinity of the overlap area are as follow:

- Eucalyptus macrocarpa trees are reduced from 14 to 10 in the median.
- Quercus Palustris 'Yarralumla Clone" trees are reduced from 24 to 16 on the western verge.
- Quercus Palustris 'Yarralumla Clone" trees are reduced from 24 to 18 on the eastern verge.

Refer to C10104 – D145+ to 146+ for details.

5 STATEMENT AGAINST RELEVANT CRITERIA

Relevant Codes

Based on the current Territory Plan, the majority of the proposed sewer and stormwater diversion mains intercept *TSZ1: Transport, RZ1: Suburban, RZ5: High Density Residential and NUZ4: River Corridor shown in the Territory Plan*.

CODE	APPLICABLE ZONING
Non-Urban Zones Development Code	NUZ4
Residential Subdivision Development Code	RZ1 & RZ5
Transport and Services Zone Development Code	TSZ1

A table addressing the assessment criteria is provided at **Appendix B.**

6 ASSESSMENT OF ENVIRONMENTAL EFFECTS

6.1 General

The development of North Weston, Coombs and Wright, including the construction of the Molonglo Trunk Sewer Main and JGD Stage 1D/2A Overlap, has been granted an Environmental Impact Statement (EIS) scoping / S211 exemption by the Minister for Planning, following advice from ESDD. A number of detailed reports and studies undertaken over the past few years were assessed in full and independently by ESDD prior to providing its recommendation to the Minister. A copy of the letter from the Minister notifying of the EIS exemption can be found in **Appendix C**.

The Molonglo Valley Plan for the Protection of Matters of National Environmental Significance (NES Plan), which was endorsed by the Minister on 7 October 2011, evaluates matters of national environmental significance (including threatened species, migratory species and important ecological communities) across the Molonglo Valley and recommends a range of management and mitigation measures. In December 2011, the Commonwealth Minister approved all actions associated with urban development, as described in the NES Plan. This includes infrastructure, services and construction within the assessment area. The ACT Minister for Environment and Sustainable Development exercised his powers under the Planning and Development Act 2007 (ACT) to waive the need for environmental impact statements (EIS) for development of parts of the Molonglo Valley based on the comprehensive environmental investigations already undertaken in association with the Molonglo preliminary assessment.

Molonglo Infrastructure Stage 1D/2A alignment is primarily located within TSZ1: Transport sone in the Territory Plan.

The alignment of the proposed trunk sewer is primarily located within TSZ1: Transport, RZ1: Suburban, RZ5: High Density Residential and NUZ4: River Corridor shown in the Territory Plan. Accordingly the relevant development precinct codes are the Transport and Services Zone Development Code (for TSZ1), Residential Subdivision Code (for RZ1 and RZ5) and Non-Urban Zones Development Code (for NUZ4). The Assessment of Environmental Effects is therefore triggered by development in Non-Urban Zones. Approximately 160m of the MTS is in NZU4. The criteria for the Assessment of Environmental Effects for the respective code is addressed in the table below

Criteria	Comment
Code: Non-Urban Zone - C17	
The amount of traffic likely to be generated and the likely impacts on the road system.	Traffic will be limited to construction traffic, including excavators, rollers, trucks and delivery of materials. Proposed access location off the proposed JGD

Criteria	Comment
	Stage 1D is indicated on Drawing C11124-012+.
Impacts on the amenity of surrounding land uses.	No impact, buried service
Impacts on the role and character of the hills and ridges as a visual backdrop	No impact. All infrastructure except the triple R sump and headwall is below ground. The triple R sump will be located in the concrete lined channel and the headwall will be backfill and vegetated with dryland grass.
Impacts on rural character	No impact, buried service
Provision of landscaping	The alignment of the sewer and any other disturbed areas will be reinstated to the condition prior to construction and revegetated.
Impacts on water supply catchments	No impact
Impacts of earthworks or rehabilitation works on soil stability and quality.	Excavation will be limited to the alignment of the trunk sewer and stormwater. The trench will be backfilled and compacted in accordance with ActewAGL and TaMS standards The surface will be reinstated to the condition prior to construction and revegetated.

During construction, the sewer corridor will be fenced with a Type-T fence to limit construction movement and access and provide site security (refer to Drawing C11124 – 010 & 012+). A silt fence will also be erected on the downstream side of the trench to prevent construction materials entering the Molonglo River and to also help prevent the Pink-Tailed Worm Lizard from entering the open sewer and stormwater trench. The procedure is the same as adopted and approved for the recently completed Stage 1 MTS works.

6.2 Pink-Tailed Worm Lizard (Aprasia parapulchella)

Dr. Will Osborne of the Institute of Applied Ecology, University of Canberra has undertaken a study into the existence of the Pink-tailed Worm Lizard (Aprasia parapulchella) along the Molonglo River corridor. The Pink-tailed Worm Lizard (PTWL) has been declared a vulnerable species in the ACT.

Dr. Osborne has mapped the potential habitat of the PTWL along the alignment of the proposed trunk sewer. The mapping includes areas of lower quality potential habitat, moderate quality and high quality potential habitat. The alignment of the sewer and stormwater has been designed to avoid the potential habitat of the PTWL and maintain a minimum 20m buffer from the edge of the trench to the edge of the potential habitat wherever possible. As noted above the sewer is at closest 50m to the PTWL. However as a precaution the alignment will be rechecked prior to construction (note E9 on drawing C11124-002).

It is acceptable based on previous advice obtained for the trunk sewer alignment to pass through low quality potential habitat between Manholes S66 and S69.

The contractor awarded the contract to construct the works will be required to submit a construction environmental management plan (CEMP) for endorsement by the Superintendent and approval by Environment ACT prior to any activities commencing on-site. This requirement will be included in the tender documentation.

7 Cost OPINION

The estimated construction costs for the trunk sewer and stormwater diversion pipe is $2,965,000 GST inclusive.
The estimated construction costs for Molonglo Infrastructure Stage 1D/2A Overlap would be in the order of $3,400,000 GST inclusive.

8 Construction Timing and Procurement

It is proposed to have the trunk sewer, stormwater diversion and Molonglo Infrastructure Stage 1D/2A Overlap constructed by the Contractor who has been awarded the JGD Stage 1D contract. The Contractor has been given a delayed possession of site for these works, which will be commenced following approval of this Development Application.

APPENDICES

A DA DRAWINGS

B STATEMENT AGAINST RELEVANT CRITERIA

C S211 EXEMPTION LETTER

D TREE ASSESSMENT FOR MOLONGLO 2

E DISCUSSIONS WITH ROADS ACT

F DISCUSSIONS WITH TELSTRA

APPENDIX A

DA DRAWINGS

APPENDIX B

STATEMENT AGAINST RELEVANT CRITERIA

Non-Urban Zones Development Code

Part A – Zone Specific Controls

NUZ1 – Broadacre Zone

This Section of the Code is not applicable as the proposed development does not pass through this zone.

NUZ2 – Rural Zone

This Section of the Code is not applicable as the proposed development does not pass through this zone.

NUZ3 – Hills, Ridges and Buffer Areas Zone

This Section of the Code is not applicable as the proposed development does not pass through this zone.

NUZ4 – River Corridor Zone

Element 1: Restrictions on Use

Intent:

a) To make provision for commercial, community, recreation and tourist activities directly related to the use of the river.

b) To ensure development is kept to a minimum required to service the visiting public and is confined to the perimeter of environmentally sensitive areas.

Rules	Criteria	Comment
1.1 Recreational Development		
There is no applicable rule.	C8 Land in the River Corridor Zone is planner, developed and managed as an interconnected open space system within	**C8** **Not applicable as the project is not a recreational development**

Rules	Criteria	Comment
	which recreation is a key land use.	
There is no applicable rule.	C9 There is a demonstrated need for recreational and associated facilities such as kiosks, and the development does not adversely impact on the environment.	**C9** **Not applicable as the project is not a recreational development**
There is no applicable rule.	C10 Unless it requires siting adjacent to the river, development is located at an appropriate distance from the riverbank.	**C10** **Not applicable as the project is not a recreational development**
There is no applicable rule.	C11 Intensive riverside recreational uses are only developed where the river and sandy beaches allow safe swimming and where the terrain is suitable for recreation, road access and parking	**C11** **Not applicable as the project is not a recreational development**

NUZ5 – Mountains and Bushland

This Section of the Code is not applicable as the proposed development does not pass through this zone.

Part B – General Development Controls

Element 1: Restrictions on Use

Intent:

a) To protect natural site characteristics, visual diversity and the general character of the landscape

b) To ensure development does not result in degradation of vegetation or soils or have another unacceptable environmental impact on the locality or adjacent water bodies.

Rules	Criteria	Comment
1.1 Adjunct Uses		
There is no applicable rule.	C16 Subject to any requirements of the	**C16** **Not applicable to this project**

	National Capital Plan, the following developments may be permitted where they are adjunct to the primary permitted use of the land: a) Education establishment b) Cultural facility c) COMMUNITY USE d) Scientific research establishment e) Farm tourism f) Other rural business	
1.2 Assessment of Environmental Effects		
There is no applicable rule	C17 The application for development is accompanied by an Assessment of Environment Effects (section 120(f) *Planning and Development Act 2007*) addressing, but not limited to, the following: a) the amount of traffic likely to be generated and the likely impacts on the road system b) impacts on the amenity of surrounding land uses c) impacts on the role and character of the hills and ridges as a visual backdrop d) impacts on rural character e) provision of landscaping f) impacts on water supply catchments g) impacts of earthworks or rehabilitation works on soil stability and quality.	**C17** **Refer to Table in Section 6.1 of this report**

1.3 Plans of Management		
There is no applicable rule	C18 Where relevant, the proposed development is consistent with the approved plan of management.	**C18** **An approved Plan of Management is not applicable to the proposed development.** **This Criteria is therefore not relevant to the proposed development.**

Element 2: Building and Site Controls

Intent:

a) To ensure development limits adverse impact on the environment

b) To provide for the future viability of agricultural land

Rules	**Criteria**	**Comment**
2.1 Demolition		
R19 In accordance with section 148 of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Endorsement from utilities (including Water, Sewerage, Stormwater, Electricity and Gas) stating that: a) All network infrastructure on or immediately adjacent the site has been identified on the plan. b) All potentially hazardous substances and conditions (associated with or resulting from the demolition process) that may constitute a risk to utility services have been	C9 If a Statement of Endorsement is not provided the application will be referred to relevant utilities provider in accordance with the requirements of the *Planning and Development Act 2007*. .	**R9 / C9** **Demolition works are not included in the scope of works.** **This Rule / Criteria is therefore not relevant to the proposed development.**

Rules	Criteria	Comment
identified. c) All required network disconnections have been identified and the disconnection works comply with utility requirements. d) All works associated with the demolition comply with and are in accordance with utility asset access and protected requirements.		
2.2 Subdivision		
R20 Subdivision is only permitted where: a) it is part of a development application for another assessable development . b) it is demonstrated that any residual block can accommodate another assessable development designed in accordance with the relevant section of this Code.	This is a mandatory requirement. There is no applicable criterion.	**R20** **No subdivision of land is required under the proposed works.** **This Rule is therefore not relevant to the proposed development**
2.3 National Capital Plan		
There is no applicable rule.	C21 Where a development is subject to Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, the development is not inconsistent with the Special Requirements or Development Control Plan.	**C21** **The proposed development is not subject to Special Requirements under the National Capital Plan.** **This Criteria is therefore not relevant to the proposed development.**

Rules	Criteria	Comment
	Where any provision of this code is inconsistent with Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, that provision has no effect.	

Element 3: Built Form

Intent:

a) To ensure that development is in character with the rural setting and views from public places to regional features.

b) To protect the amenity of users with regard to safety, access and security measures.

Note: Under the *Building Act 2004* buildings need to meet the requirements of the Building Code of Australia. For certain classes of buildings, this will include prescribed energy requirements.

The proposed development does not include buildings
This Section of the Code is therefore considered not applicable to the proposed development.

Element 4: Parking and Access

Intent:

a) To ensure safe and efficient parking.

b) To ensure adequate parking facilities are provided.

The proposed development does not contain any parking.
This Section of the Code is therefore considered not applicable to the proposed development.

Element 5: Amenity

Intent:

a) To provide for protection of the natural character of the landscape.

Rules	Criteria	Comment
5.1 Signs		
There is no applicable rule.	C28 Signs comply with the Signs General Code.	**C28** **No signs, as per the Signs General Code, are included in**

Rules	Criteria	Comment
		this application. **This Criteria is therefore not relevant to the proposed development.**
There is no applicable rule.	C29 Advertising signs are not large, obtrusive or incompatible with the rural character of the locality.	**C29** **No advertising signs are proposed with this Development.** **This Criteria is therefore not relevant to the proposed development.**
5.2 Lighting		
R30 External lighting is provided to building frontages, to all pathways, roads/laneways and car parking areas in accordance with Australian Standard AS1158.1.3 *Pedestrian Lighting*.	C30 External lighting is provided in accordance with ACT Crime Prevention and Urban Design Resource Manual.	**R30 / C30** **No lighting is proposed with this Development.** **This Rule / Criteria is therefore not relevant to the proposed development.**
R31 All external lighting provided is in accordance with *AS 4282 Control of the Obtrusive Effects of Outdoor Lighting.*	C31 All lighting, including security and car park lighting, is designed to minimise light spill.	**R31 / C31** **No lighting is proposed with this Development.** **This Rule / Criteria is therefore not relevant to the proposed development**

Element 6: Environment

Intent:

a) To protect woodlands, native grasslands, forests and waterways

b) To provide for maintenance and strengthening of tree cover along stream and on hills and ridges

Rules	Criteria	Comment
6.1 Heritage		

Rules	Criteria	Comment
R32 In accordance with section 148 of the *Planning and Development Act 2007*, applications for development on land or buildings subject to interim or full heritage registration are to be accompanied by advice from the Heritage Council stating that the development meets the requirement of the *Heritage Act 2004*.	C32 If advice from the Heritage Council is required, but not provided, then the application will be referred to the heritage Council in accordance with the requirement of the *Planning and Development Act 2007*.	**R32 / C32** **There are no heritage sites along the alignment of the trunk sewer and stormwater listed in the ACT Heritage Database.**
6.2 Water Use		
There is no applicable rule.	C33 Where relevant, development complies with the requirement of the Water Use and Catchment General Code	**C33** **For operational reasons potable water will be used to periodically flush the trunk sewer main during the interim years prior to Molonglo 2 Stage 1 becoming fully developed. The water will continue through the sewer system to the Lower Molonglo Water Quality Control Centre.** **There is no impact on the water catchment as no major regrading of land is being undertaken.**
6.3 Erosion and Sediment Control		
R34 For sites less than 0.3 of a hectare, a plan is proved to demonstrate that the development complies with the	C34 If a plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the	**R34 / C34** **The site is greater that 0.3 of a hectare.** **This Rule / Criteria is therefore**

Rules	Criteria	Comment
ACT Environment Protection Guidelines for Construction and Land Development in the ACT, August 2007.	*Planning and Development Act 2007*.	**not relevant to the proposed development.**
R35 For development on a site greater than 0.3 of a hectare, the application is accompanied by an Erosion and Sediment Control Plan endorsed by ACT Environment Protection.	C35 If an endorsed Sediment and Erosion Control Plan is not provided the application will be relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**R35 / C35** **A Site Access and Construction Management Plan has been submitted as part of this application.**
6.4 Contamination		
R36 A statement is provided that the potential for land contamination has been assessed in accordance with the *ACT Government Strategic Plan – Contaminated Sites Management 1995* and the *ACT Environmental Protection Policy 2000*, and it is demonstrated that the land is suitable for the proposed development.	C36 If a statement that the site has been assessed is not provided, the application will be referred to the relevant agency in accordance with the requirements of the *planning and Development Act 2007.*	**R36 / C36** **The alignment of the sewer and stormwater mains is above the 100-yr flood level of the Molonglo River and Holden's Creek Pond.** **There are no areas of contaminated land along the proposed alignment of the trunk sewer and stormwater.** **This Rule / Criteria is therefore not relevant to the proposed development.**
6.5 Hazardous Materials		
R37 For the demolition of multi-unit housing (including garages and carports) constructed* prior to 1985, and Commercial / industrial premises constructed prior to 2005, a Hazardous	C37 If an endorsed Hazardous Materials Survey is not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and*	**R37 / C37** **Demolition of multi-unit housing is not included in the scope of the proposed development.** **This Rule / Criteria is therefore not relevant to the proposed**

Rules	Criteria	Comment
Materials Survey (including an asbestos survey) is carried out and signed by an appropriately licensed person and is endorsed by Environment Protection. The Survey is provided and covers the disposal of hazardous materials, showing that: a) Hazardous material disposal (including asbestos) is to be at a licensed disposal facility in the ACT. b) If hazardous materials are to be transported for disposal interstate, approval from the Environment Protection Authority is obtained prior to removal of material from the site. c) An appropriately licensed contractor is engaged for the removal and transport of all hazardous materials (including asbestos) present at the site. * construction date means the date when the Certificate of Occupancy was issued.	*Development Act 2007.*	**development.**
6.6 Trees		
R38 This rule applies to a development that has one or more of the following	This is a mandatory requirement. There is no applicable criterion.	**R38** **No protected trees exist along the alignment of the proposed**

Rules	Criteria	Comment
characteristics: a) requires groundwork within the tree protection zone of a *protected tree* b) is likely to cause damage to or removal of any *protected trees* The authority shall refer the development application to the Conservator of Flora and Fauna. **Notes:** 1. Under the *Planning and Development Regulation 2008* a development application for a *declared site* under the *Tree Protection Act 2005*, must be referred to the Conservator of Flora and Fauna. 2. The authority will consider any advice from the Conservator of Flora and Fauna before determining the application in accordance with the *Planning and Development Act 2007*. 3. 3. *Protected tree* and *declared site* are defined under the *4. Tree Protection Act*		**trunk sewer and stormwater.** **This Rule / Criteria is therefore not relevant to the proposed development.**

Rules	Criteria	Comment
2005.		
6.7 Bushfire Risk Mitigation		
There is no applicable rule	C39 Where relevant, development complies with the requirements of the Planning for Bushfire Risk Mitigation General Code	**C39** **As the proposed development consists of works predominately below ground, this Criteria is not relevant.**

Element 7: Site Services

Intent:

a) To ensure the extent of change and nature of landscape works minimises adverse impact on adjacent land.

Rules	Criteria	Comment
7.1 Waste Management		
R40 In accordance with section 148 of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Compliance from the Department of Territory and Municipal Services stating that the waste facilities and management associated with the development are in accordance with the current version of the *Development Control Code for Best Practice Waste Management in the ACT*.	C40 If a Statement of Compliance is not provided the application will be referred to the Department of Territory and Municipal Services in accordance with the requirements of the *Planning and Development Act 2007.*	**R40 / C40** **Waste facilities and management is not included in the scope of the proposed development.** **This Rule / Criteria is therefore not relevant to the proposed development.**
7.2 Servicing and Site Management		
R41 In accordance with section 148	C41 If a Statement of Endorsement is	**R41 / C41** **Waste facilities and**

Rules	Criteria	Comment
of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Endorsement form the relevant agency stating that the waste facilities and management associated with the development are in accordance with the *Design Standards for Urban Infrastructure*.	not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**management is not included in the scope of the proposed development.** **This Rule / Criteria is therefore not relevant to the proposed development.**
7.3 Utilities		
R42 A Statement of Compliance from each relevant utility provider (for water, sewerage, stormwater, electricity and gas) is provided, which confirms that the location and nature of earthworks, utility connections, proposed buildings, pavements and landscape features comply with utility standards, access provisions and asset clearance zones. *Note: Where these is a conflict between planning and utility requirements, the utility requirements shall take precedence over other provisions of this Code.*	C42 If a Statement of Compliance is not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007.*	**R42 / C42** **Application to be referred to relevant utility providers.** **Drawings will be submitted to the relevant utility provider seeking their design acceptance of the proposed works at detailed design stage.** **DA drawings have been provided to both TaMS and ActewAGL.** **Preliminary Submissions and discussions have already occurred with ActewAGL**
There is no applicable rule.	C43 Septic systems are approved by the relevant authority.	**C43** **No septic systems are proposed as part of this development.**

Rules	Criteria	Comment
		This Rule / Criteria is therefore not relevant to the proposed development.

Part C – Site Specific Controls

Part C(1) - P4 – Plantation Forestry Precinct

This Section of the Code is not applicable as the proposed development is not in the Plantation Forestry Precinct

Part C(2) – Fyshwick

This Section of the Code is not applicable as the proposed development is not in Fyshwick

Part C(3) – Gungahlin

This Section of the Code is not applicable as the proposed development is not in Gungahlin

Part C(4) – Jerrabomberra

This Section of the Code is not applicable as the proposed development is not in Jerrabomberra

Part C(5) – Molonglo and Murrumbidgee River Corridor

This Section of the Code is not applicable as the proposed development is not located in the areas shown in Figures 3 and 4.

Part C(6) – Pialligo

This Section of the Code is not applicable as the proposed development is not in Pialligo

Part C(7) – Symonston

This Section of the Code is not applicable as the proposed development is not in Symonston

Part C(8) – Harman Industrial Area, Jerrabomberra

This Section of the Code is not applicable as the proposed development is not in the Harman Industrial Area, Jerrabomberra.

Residential Development Code

Part A – Zone Specific Controls

This Part of the Code provides the specific controls that apply to each individual Residential Zone. Parts B and C of the Code also apply. Part A does not apply to Compact Blocks in New Estates (refer Part C (3)).

Part A (1) – RZ1 – Suburban Zone

Element 1: Restrictions on Use

Intent:

a) To allow a limited level of flexibility to accommodate a variety of additional housing to meet changing community needs and preferences whilst ensuring development is of a density compatible with adjoining development.

This Section of the Code is not applicable as the proposed development does not include the leasing of blocks.

Element 2: Building and Site Controls

Intent:

a) To ensure buildings are compatible with, and complement, the built form, siting and scale of surrounding properties and are of an appropriate residential character

b) To ensure buildings are designed and sited to:

i) provide privacy between neighbours and between occupants and the public

ii) provide adequate light and natural ventilation between dwellings

iii) provide opportunities for additional landscaping and to deliver quality open space

iv) maintain or enhance the streetscape character in existing areas

v) establish appropriate and attractive streetscapes in new residential areas

c) To ensure the amenity of surrounding properties is maintained, particularly in relation to privacy, overshadowing and solar access

This Section of the Code is not applicable as the proposed development does not include the building of dwellings.

Part A(2) – RZ2 – Suburban Core Zone

This Section of the Code is not applicable as the proposed development is not in the Suburban

Core Zone.

Part A(3) – RZ3 – Urban Residential Zone

This Section of the Code is not applicable as the proposed development is not in the Urban Residential Zone.

Part A(4) – RZ4 – Medium Density Residential

This Section of the Code is not applicable as the proposed development is not in the Medium Density Residential Zone.

Part A(5) – RZ5 – High Density Residential Zone

Element 2: Building and Site Controls

Intent:

a) To ensure buildings are designed and sited to:

i) provide privacy between neighbours and between occupants and the public

ii) provide adequate light and natural ventilation between dwellings

iii) provide opportunities for additional landscaping and to deliver quality open space

iv) enhance the streetscape character in existing areas

v) establish appropriate and attractive streetscapes in new residential areas

b) To ensure the amenity of surrounding properties is optimised, particularly in relation to privacy, overshadowing and solar access

This Section of the Code is not applicable as the proposed development does not include the building of dwellings.

Part B – General Development Controls

This Part of the Code provides the general controls that are applicable to all development. Parts A and C also apply.

Element 1: Restrictions on Use

Intent:

a) To ensure future development can be accommodated on subdivided blocks

This Section of the Code is not applicable as the proposed development does not include the subdivision of existing residential leases.

Element 2: Building and Site Controls

Intent:

a) To ensure buildings are compatible with, and complement, the built form, siting and scale of surrounding properties and are of an appropriate residential character

b) To ensure buildings are designed and sited to:

i) provide privacy between neighbours and between occupants and the public

ii) provide adequate light and natural ventilation between dwellings

iii) provide opportunities for additional landscaping and to deliver quality open space

iv) maintain or enhance the streetscape character in existing areas

v) establish appropriate and attractive streetscapes in new residential areas

c) To ensure the amenity of surrounding properties is maintained, particularly in relation to privacy, overshadowing and solar access

Rules	Criteria	Comment
2.1 Demolition		
R29 In accordance with section 148 of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Endorsement for utilities (including Water, Sewerage, Stormwater, Electricity and Gas) stating that: a) all network infrastructure on or immediately adjacent the site has been identified on the plan b) all potentially hazardous substances and conditions (associated with or resulting from the demolition process) that may constitute a risk to utility services have been identified c) all required network	C29 If a Statement of Endorsement is not provided, the application will be referred to relevant utilities in accordance with the requirements of the *Planning and Development Act 2007.*	**R29/C29** **All existing services and infrastructure have been identified and shown on the DA drawings. No relocation or demolition of the existing services/infrastructure/network would be required as part of this project.**

Rules	Criteria	Comment
disconnections have been identified and the disconnection works comply with utility requirements d) all works associated with the demolition comply with and are in accordance with utility asset access and protection requirements.		
2.2 National Capital Plan Requirements		
There is no applicable rule.	C16 Where a development is subject to Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, the development is not inconsistent with the Special Requirements or Development Control Plan. Where any provision of this code is inconsistent with Special Requirements under the National Capital Plan, or any relevant Development Control Plan prepared under the National Capital Plan, that provision has no effect.	**C16** **The proposed development is not subject to Special Requirements under the National Capital Plan.** **This Criteria is therefore not relevant to the proposed development.**
2.3 Development proposals where there are pre-existing approved Lease and Development Conditions		
R17 The development proposal complies with any relevant pre-existing approved Lease and Development Conditions and any required developer's consent has been	C17 The development meets the intent of the Lease and Development Conditions.	**R17/C17** **The proposed development is not subject to pre-existing lease condition.**

		This Rule/Criteria is therefore not relevant to the proposed development
Rules	**Criteria**	**Comment**
provided. To the extent of any inconsistency, the requirements of the Lease and Development Conditions will take precedence over any Rules in the Single Dwelling Housing Development Code as listed below. Plot Ratio Building Envelope Building Height Front Street Setback Side Setback Rear Setback Materials and Finish Interface Vehicle Access Parking Solar Access Private Open Space Water Sensitive Urban Design		
2.4 Development proposals where the Estate Development Plan is subject to a Precinct Code		
R18 The development proposal complies with all relevant rules in the relevant Precinct Code (if any).	C18 The development meets all relevant criteria in the relevant Precinct Code (if any).	**C18** **The proposed development is not subject to a precinct code.**

2.5 Height		
Rules	**Criteria**	**Comment**
There is no applicable rule.	C19 Notwithstanding any other provision relating to height, on land where a lawfully constructed building exceeds two storeys in height, a new building or buildings up to the height of the existing building may be permitted subject to consideration of any adverse impact resulting from any increase in building bulk.	**C19** **The proposed development does not include the construction of any buildings.** **This criteria is therefore not relevant to the proposed development.**
2.6 Plot Ratio		
There is no applicable rule.	C20 Notwithstanding any other provision relating to plot ratio, on land where a lawfully constructed building exceeds the stipulated maximum plot ratio, a new building or buildings up to the same plot ratio may be permitted: a) subject to consideration of any adverse impact resulting from increase in building bulk b) if, and only if, the development does not involve an increase in the number of dwellings on the land.	**C20** **The proposed development does not include the construction of any buildings.** **This criteria is therefore not relevant to the proposed development.**
2.7 Bushfire		
R20A Where identified in a precinct code or lease and development conditions, buildings are to be designed and constructed in accordance with the specified	This is a mandatory requirement. There is no applicable criterion.	**R20A** **The proposed development does not include the construction of any buildings.** **This criteria is therefore not**

bushfire construction level of Australian Standard AS 3959.		**relevant to the proposed development.**
Rules	**Criteria**	**Comment**
2.8 Blocks between 500m2 and 550m2		
R20B Where identified in a Precinct Code blocks from 500m2 up to 550m2 will be subject to Part C(4) Single Dwelling Housing – Midsized Blocks (>250 – 500m2) in New Estates of this code for the rules and criteria of Part C(1) that Part C(4) replaces. Part C(1) still applies to these blocks where relevant.	This is a mandatory requirement. There is no applicable criterion.	**R20B** **The proposed development does not include the construction of any buildings.** **This rule is therefore not relevant to the proposed development.**
2.9 Acoustic protection from external noise sources		

R20C Where a block is identified in a precinct code as being potentially affected by noise from external sources the building design and construction complies with the relevant sections of all of the following: a) AS/NZS 3671 Acoustics – Road traffic Noise Intrusion, Building Siting and Construction b) AS/NZS 2107 Acoustics – Recommended design sound levels and reverberation terms for building interiors c) ACT Environment Protection Regulation2005. A report prepared by a suitably qualified acoustics consultant that is a member of the Australian Acoustic Society and has experience in assessing noise effects demonstrates compliance with this rule.	This is a mandatory requirement. There is no applicable criterion.	**R20C** **The proposed development does not include the construction of any buildings.** **This rule is therefore not relevant to the proposed development.**

Element 3: Built Form

Intent:

a) To provide safe and accessible neighbourhoods

This Section of the Code is not applicable as the proposed development does not involve neighbourhood design..

Element 4: Parking and Site Access

Intent:

a) To ensure traffic generation and parking are considered as part of the overall design of the development.

This Section of the Code is not applicable as the proposed development will not alter traffic or parking.

Element 6: Environment

Intent:

a) To identify and mitigate potential on-site and off-site environmental impacts of development and incorporate alternative design options where necessary

b) Buildings are designed to provide for the retention of existing significant vegetation and minimise impact on landform

c) To ensure preservation of areas, or items, of heritage significance that are valued by the community

Rules	Criteria	Comment
6.1 Heritage		
R21 In accordance with section 148 of the *Planning and Development Act 2007*, applications for developments on land or buildings subject to provisional registration or registration under s.41 of the *Heritage Act 2004* are accompanied by advice from the Heritage Council stating that the development meets the requirements of the *Heritage Act 2004*.	C21 If advice from the Heritage Council is required, but not provided, then the application will be referred to the Heritage Council in accordance with the requirements of the *Planning and Development Act 2007.*	**R21 / C21** **There are no heritage sites along the alignment of the trunk sewer and stormwater listed in the ACT Heritage Database.**
6.2 Trees		
R22 This rule applies to a development that has one or more of the following characteristics. a) requires groundwork within the tree protection zone of a *protected tree* b) is likely to cause damage to or removal of any *protected trees* The authority shall refer the	This is a mandatory requirement. There is no applicable criterion.	**R22** **No protected trees exist along the alignment of the proposed trunk sewer and stormwater.** **This rule is therefore not relevant to the proposed development.**

development application to the Conservator of Flora and Fauna. **Notes:** 1. Under the *Planning and Development Regulation 2008* a development application for a *declared site* under the *Tree Protection Act 2005*, must be referred to the Conservator of Flora and Fauna. 2. The authority will consider any advice from the Conservator of Flora and Fauna before determining the application in accordance with the *Planning and Development Act 2007*. 3. *Protected tree* and *declared site* are defined under the *Tree Protection Act 2005.*		
6.3 Erosion and Sediment Control		
R23 For sites less than 0.3 of a hectare, a plan is provided to demonstrate that the development complies with the *Best Practice Guidelines – Prevent Pollution From Residential Building Sites, March 2006.*	C23 If a plan is not provided, the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**R34 / C34** **The site is greater than 0.3 of a hectare.** **This rule/criteria is therefore not relevant to the proposed development.**
R24 For development on a site greater than 0.3 of a hectare, the application is accompanied by an Erosion and Sediment Control Plan endorsed by the ACT Environment Protection Authority.	C24 If an endorsed Sediment and Erosion Control Plan is not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**R24 / C24** **A Site Access and Construction Management Plan has been submitted as part of this application.**
6.4 Signs		
There is no applicable rule.	C25 Signs comply with the Signs General Code.	**C25** **No signs, as per the Signs General Code are included in this application. This criteria is therefore not relevant to the proposed development.**

Element 7: Services

Intent:

a) To ensure adequate provision of services to cater for demand from residents

b) To protect easements and service reservations

Rules	Criteria	Comment
7.1 Waste Management		
R26 Where the development will generate a total of 20 cubic metres or greater of demolition waste, the application is accompanied by a Statement of Compliance from the Department of Territory and Municipal Services stating that the waste facilities and management associated with the development are in accordance with the current version of the *Development Control Code for Best Practice Waste Management in the ACT.*	C26 Development is in accordance with the current version of the *Development Control Code for Best Practice Waste Management in the ACT*. If the development will generate a total of 20 cubic metres or greater of demolition waste and a Statement of Compliance is not provided, the application will be referred to the Department of Territory and Municipal Services in accordance with the requirements of the *Planning and Development Act 2007* for assessment against the above code.	**R26/C26** **The proposed development will not generate a total of 20 cubic metres or waste.** **This Rule/Criteria is therefore not relevant to the proposed development.**
7.2 Utilities		
R28 There is no applicable rule.	C28 Where a development encroaches into a registered easement the application will be referred to the relevant utility provider in accordance with the requirements of the *Planning and Development Act 2007*.	**R28/C28** **The proposed development will not encroach into a registered easement.** **This criteria is therefore not relevant to the proposed development.**
R29 a) Electricity supply lines within existing residential areas are underground or along the rear spine or side of blocks.	This is a mandatory requirement. There is no applicable criterion.	**R29** **Not applicable.** **This Rule is therefore not relevant to the proposed**

b) No continuous rows of electricity supply poles are erected on residential streets or streets with residential access.		**development.**

Part C – Development Type Controls

Single Dwelling:

This part of the Code provides the controls for single dwelling housing. It is divided into four sub-parts.

Part C(1) Single Dwelling Housing provide the controls for single dwelling housing in all residential zones, except where provided for by Parts C(2), C(3) or C(4). Part C(1) also applies to the commercial zones and the rural zone. As such, it is the default position for single dwelling housing.

Part C(2) provide additional controls to, or controls that are to be applied in lieu of, those in C(1) for single dwelling housing in parts of Deakin and Forrest due to the distinctive environmental quality of these historic Sections of South Canberra. This part applies to Deakin, Sections 5-8 and Forrest, Sections 20-22 and 26-27.

Part C(3) provide the controls for single dwelling housing on residential blocks with a site area of 250m_2 or less in new estates.

Part C(4) provide the controls for single dwelling housing on residential blocks with a site area of greater than 250m_2 up to and including 500m_2 in new estates.

Multi Unit:

This part of the Code provides the controls for multi unit housing. It is divided into five sub-parts.

Part C(1) provide the controls for multi unit housing in all zones except in the commercial zones and except where provided for by Parts C(2) - C(4). Part C(1) is therefore the default position for multi unit housing. Part C(2) provides additional controls in some areas. Parts C(3) and C(4) provide controls that apply instead of Part C(1) in other areas. Part C(5) provides controls for apartments of three (3) storeys or more in areas not subject to parts C(2) – C(4). Provisions of Part C(1) do not apply where specifically identified in provisions of Part C(5). For multi unit housing in the commercial zones Part C(5) applies instead of Part C(1).

Part C(2) provide additional controls to, or controls that are to be applied in lieu of, those in Part C(1) for multi unit housing in parts of Deakin and Forrest due to the distinctive environmental quality of these historic Sections of South Canberra. This Part applies to Deakin, Sections 5-8 and Forrest, Sections 20-22 and 26-27.

Part C(3) provide the controls for multi unit housing in the RZ3 - Urban Residential and RZ4 – Medium Density Residential Zones in Inner North Canberra and the Gungahlin District. These controls apply instead of Part C(1).

Part C(4) provide the controls for multi unit housing in excess of 2 storeys in the RZ5 – High Density

Residential Zone as it applies to Kingston and Griffith. These controls apply instead of Part C(1). Part C(5) – provide the controls for apartments of three (3) storeys or more in areas not subject to parts C(2) – C(4). Provisions of Part C(1) do not apply where specifically identified in provisions of Part C(5). For multi unit housing in the commercial zones Part C(5) applies instead of Part C(1).

This Section of the Code is not applicable as the proposed development does not include the building of dwellings or housing.

Transport and Services Zone Development Code

Transport and Services Zone (TSZ1)

This Development Code applies to all development in the Transport and Services Zones identified in the zones' development tables as being within the code, merit and impact assessment tracks.

The development involves a significant utilization of current TSZ1 land use zone as described in the Section 3. Therefore the relevant rules and criteria are comprehensively addressed in following table.

Part A – Zone Specific Controls

Part A – Zone Specific Controls

Element 1: Restrictions on Use

Intent:

a) To provide for development that does not jeopardise the Inter-town Public Transport Route

b) To allow flexibility in development that is not inconsistent with the National Capital Plan

c)

Rules	Criteria	Comment
1.1 Use and Form		
There is no applicable rule.	C1.1.1 A proposal for works on land identified on the map as forming part of the Inter-town Public Transport Route does not jeopardise the future provision of a separate right-of-way within the road reserve to accommodate this service.	**C1.1.1** **Future provision of Inter-town Public Transport Route by widening of the carriageway has been accommodated in the ultimate (Long Term) arrangement of John Gorton Drive.** **Two options have been explored on the possible arrangement of IPT and retrofitting segregated style of cycle lane as part of John Gorton Drive Extension Stage 2A project. The alignment of the proposed trunk sewer will not jeopardise the future IPT**

		services.
There is no applicable rule.	C1.1.2 Subject to the National Capital Plan, airspace may be used for a purpose which is permitted on land under an adjoining Zone, where the subject development application will not interfere with the safe operation of the road system.	**C1.1.2** **With regards to airspace under an adjoining Zone, the subject development will not interfere with the safe operation of the road system.**

Part B – General Development Controls

Element 1: Restrictions of Use

Intent:

To ensure development is consistent with the approved Plan of Management

Rules	Criteria	Comment
1.1 Plans of Management		
There is no applicable rule.	C1.1.1 Where relevant, the proposed development is consistent with the approved Plan of Management.	**C1.1.1** **An approved Plan of Management is not applicable to the proposed development. The development is not located in an area of public land.** **This Criterion is therefore not relevant to the proposed development.**

Element 2: Building and Site Controls

Intent:

a) To ensure development is compatible with, and does not adversely impact on, the environment

Rules	Criteria	Comment

2.1 Subdivision		
R2.1.1 Subdivision is only permitted where: a) it is part of a development application for another assessable development b) it is demonstrated that any residual block can accommodate another assessable development designed in accordance with the relevant section of this Code.	C2.1.1 This is a mandatory requirement. There is no applicable criterion.	**R2.1.1** **No subdivision of land is required under the proposed works.** **This Rule is therefore not relevant to the proposed development.**
Rules	**Criteria**	**Comment**
2.2 Demolition		
R2.2.1 In accordance with section 148 of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Endorsement from utilities provider (including Water, Sewerage, Stormwater, Electricity, Gas and Telecommunications) stating that: a) All network infrastructure on or immediately adjacent the site has been identified on the plan b) All potentially hazardous	C2.2.1 If a Statement of Endorsement is not provided the application will be referred to relevant utilities provider in accordance with the requirements of the *Planning and Development Act 2007*.	**R2.2.1** **Minor demolition of existing road features will occur as part of the proposed development which include road pavement and furniture. This is not considered to be a significant part of the development.** **Application may be referred to the relevant agency**

substances and conditions (associated with or resulting from the demolition process) that may constitute a risk to utility services have been identified c) All required network disconnections have been identified and the disconnection works comply with utility requirements d) All works associated with the demolition comply with and are in accordance with utility asset access and		
Rules	**Criteria**	**Comment**
protection requirements.		
2.2 National Capital Plan		
There is no applicable rule.	C2.3.1 Where a development is subject to Special Requirements under the National Capital Plan (including any relevant Development Control Plan) the development is not inconsistent with the Special Requirements.	**C2.3.1** **The proposed development is not subject to Special Requirements under the National Capital Plan.** **This Criterion is therefore not relevant to the proposed development.**

Element 3: Built Form

Intent:

c) To ensure that development is compatible with the surrounding landscape, especially in areas of high visibility

Note: Under the *Building Act 2004* buildings need to meet the requirements of the Building Code of Australia. For certain classes of buildings, this will include prescribed energy requirements.

The proposed development does not include buildings and is located within a nominated road corridor.

This Section of the Code is therefore considered not applicable to the proposed development.

Element 4: Parking and Site Access

Intent:

a) To encourage the design of access and parking as part of the overall design of the development

b) To provide for safe, convenient access to meet the needs of all users and visitors

Rules	Criteria	Comment
4.1 Traffic Generation		
There is no applicable rule.	C4.1.1 The existing road network can accommodate the amount of traffic that is likely to be generated by the development.	**C4.1.1** **For the construction of trunk sewer and stormwater diversion, traffic will be limited to construction traffic, including excavators, rollers, trucks and delivery of materials.** **The proposed extension of John Gorton Drive will, in itself, not generate traffic but rather the carriageway is being constructed to accommodate the amount of traffic likely to be generated by the future surrounding developments.**

		This Criterion is therefore considered not relevant to the proposed development.
4.2 Vehicle Access and Parking		
There is no applicable rule.	C4.2.1 Vehicle access and parking complies with the requirements of the Parking and Vehicular Access General Code.	**C4.2.1** **This development does not include any off-street parking facility or access from off- street car parking areas. On-street parking facilities are provided in accordance with the AS/NZS 2890.6:2000.**
4.3 Bicycle Parking		
There is no applicable rule.	C4.3.1 Bicycle Parking complies with the requirements of the Bicycle Parking General Code.	**C4.3.1** **This development does not include Bicycle Parking.** **This Criterion is therefore not relevant to the proposed development.**
4.4 Pedestrian Movement		
There is no applicable rule.	C4.4.1 Safe and convenient movement of public transport passengers, pedestrians and cyclists is provided.	**C4.4.1** **There is limited pedestrian movement and public transport in the trunk sewer and stormwater diversion development area.** **Pedestrian crossings have been provided at the future intersection in the vicinity of JGDE Stage 2A for safe and convenient movement for pedestrians and cyclists**

		across John Gorton Drive. **This Criterion is therefore not relevant to the proposed development.**

Element 5: Amenity

Intent:

To ensure development is compatible with, and does not adversely impact on, the urban environment

Rules	Criteria	Comment
5.1 Lighting		
R5.1.1 External lighting is provided to building frontages, all pathways, roads, laneways and car-parking areas in accordance with Australian Standard AS1158.1.3 *Pedestrian Lighting*.	C5.1.1 External lighting is provided in accordance with the Crime Prevention Through Environmental Design General Code.	**R5.1.1** **External lighting on JGD is provided in accordance with AS/NZS1158 Refer detailed drawings attached with this Development Application for details.**
There is no applicable rule.	C5.1.2 All outdoor lighting, including security and car park lighting, is designed and sited to minimise light spill.	**C5.1.2** **External lighting on JGD is provided in accordance with AS/NZS1158 Refer detailed drawings attached with this Development Application for details.**
5.2 Signs		
Rules	**Criteria**	**Comment**

There is no applicable rule.	C5.2.1 Signs comply with the Signs General Code.	**C5.2.1** **No signs, as per the Signs General Code, are included in this proposed development.** **This Rule / Criteria is therefore not relevant to the proposed development.**

Element 6: Environment

Intent:

a) To provide for ecologically sustainable development which does not have adverse impacts on the surrounding environment

Rules	Criteria	Comment
6.1 Assessment of Environmental Effects		
There is no applicable rule.	C6.1.1 The development application is accompanied by an Assessment of Environmental Effects that addresses the following: a) appropriate measures to soften the impact of development on the landscape b) impacts on the character	**C6.1.1** **An exemption for Molonglo 2 has been granted on July 2009 and 14 May 2012. A copy of the exemption letters and extent is included in Appendix C.**
Rules	**Criteria**	**Comment**
	c) and appearance of any building, area of architectural, historic, aesthetic or scientific interest, or other object or place of special cultural or heritage value d) impacts on public health	

	and safety, including crime prevention e) whether public transport services are necessary and, if so, whether they are available and adequate f) impacts on the likely accessibility to facilities and services for users and consumers g) any significant short or long-term effect, that the relevant authority considers the use or development may have on the environment, including social and economic effects and potential cumulative effects h) impacts on the watercourses and drainage characteristics of the area, including water quality i) impacts on the amenity of surrounding land uses, including impacts on air quality, the level of noise	
Rules	**Criteria**	**Comment**
	generated, j) overshadowing, privacy, and the level of wind turbulence generated.	
6.2 Water Sensitive Urban Design – Mains Water Consumption **Note: Refer to the Water Ways: Water Sensitive Urban Design General Code for more information on Water Sensitive Urban Design**		

R6.2.1 Evidence is provided that shows the development achieves a minimum 40% reduction in mains water consumption compared to an equivalent development constructed in 2003 using the ACTPLA on-line assessment tool or the NSW BASIX tool. The 40% target is met without any reliance on landscaping measures to reduce consumption.	This is a mandatory requirement. There is no applicable criterion.	**R6.2.1** **Mains water consumption is not affected by this proposed development.** **This Rule is therefore not relevant to the proposed development.**
6.3 Water Sensitive Urban Design – Stormwater Quality **Note: Refer to the Water Ways: Water Sensitive Urban Design General Code for more information on Water Sensitive Urban Design**		
R6.3.1 Evidence is provided that demonstrates that for developments on sites <2000m^2, a reduction of 1- in-3 month stormwater peak run off flow to predevelopment levels with release of captured flow over a period of 1 to 3 days can be achieved.	This is a mandatory requirement. There is no applicable criterion.	**R6.3.1** **The area of the proposed development exceeds 2000m^2.** **This Rule is therefore not relevant to the proposed development.**
Rules	**Criteria**	**Comment**
R6.3.2 Evidence is provided that demonstrates that for developments on sites >2000m2, a reduction in average annual stormwater pollutant export load of: a) suspended solids by	C6.3.2 For developments on sites >2000m2 the development is demonstrated to achieve a reduction in average annual stormwater pollutant export load of: a) suspended solids by 60%	**C6.3.2** **For the construction of trunk sewer and stormwater mains,silt fence will be installed to prevent pollutant entering Molonglo River or the existing creek/water bodies downstream.**

60% b) total phosphorous by 45% c) total nitrogen by 40% using the MUSIC model to demonstrate compliance.	b) total phosphorous by 45% c) total nitrogen by 40% compared to an urban catchment with no water quality management controls, using any other method, eg XP-AQUALM, PURRS, Aquacycle, that can demonstrate, to the satisfaction of the Authority, compliance.	**For the construction of Molonglo Infrastructure2A overlap, similar to previously proposed in the Stage 1D works that the water quality on site will be managed in accordance with the waterways: Water Sensitive Urban Design General Code.** **Similar to previously proposed in the Stage 1D works, the proposed filter strips and vegetated swales are used to filter and sediment deposits and improve the quality of water downstream of the project due to the road catchment areas are small resulting in relatively low stormwater flows and low pollutant loads and filter strips and swales are an effective method of encouraging sediment deposition and runoff from the road which can be filtered before entering the Molonglo River.**
6.4 Water Sensitive Urban Design – Stormwater Quantity **Note: Refer to the Water Ways: Water Sensitive Urban Design General Code for more information on Water Sensitive Urban Design**		
Rules	**Criteria**	**Comment**
R6.4.1 Evidence is provided that shows the development achieves: a) a reduction of 1-in-3 month stormwater peak	This is a mandatory requirement. There are no applicable criteria.	**R6.4.1** **The proposed stormwater main aims to divert post-development/contaminated stormwater from upstream**

run off flow to pre-development levels with release of captured flow over a period of 1 to 3 days. b) a reduction of 1-in-5 year and 1-in-100 year stormwater peak run off flow to predevelopment levels using XP-RAFTS, DRAINS (ILSAX), RORB or WBNM models to demonstrate compliance.		**catchment to the Holden's Creek Pond for water quality treatment purpose.** **This rule is not applicable to the proposed road component.** **This Rule is not applicable to the proposed development.**
6.5 Heritage		
R6.5.1 In accordance with section 148 of the *Planning and Development Act 2007*, applications for development on land or buildings subject to interim or full heritage registration are to be accompanied by advice from the Heritage Council stating that the development meets the requirements of the *Heritage Act 2004*.	C6.5.1 If advice from the Heritage Council is required, but not provided, then the application will be referred to the Heritage Council in accordance with the requirements of the *Planning and Development Act 2007*.	**R6.5.1** **There are no heritage sites along the alignment of the trunk sewer and stormwater listed in the ACT Heritage Database.** **There are no identified heritage items in the area impacted by the works in the vicinity of Molonglo Infrastructure2A Overlap.** **Application may be referred to the relevant agency.**
Rules	**Criteria**	**Comment**
6.6 Contamination		
R6.6.1 In accordance with section 148 of the *Planning and Development Act 2007*, the	C6.6.1 If a Statement of Endorsement is not provided the application will be referred to the relevant agency in	**R6.6.1** **The alignment of the sewer and stormwater mains is above the 100-yr flood level**

application is accompanied by a Statement of Endorsement from the Environment Protection Authority (EPA) stating that the potential for land contamination has been assessed in accordance with the *ACT Government, Strategic Plan - Contaminated Sites Management, August 1995*.	accordance with the requirements of the *Planning and Development Act 2007*.	**of the Molonglo River and Holden's Creek Pond.** **There are no areas of contaminated land along the proposed alignment of the trunk sewer and stormwater.** **Based on previous investigations undertaken, it is not anticipated that any known contaminated sites in the vicinity of Molonglo Infrastructure2A Overlap.** **Application to be referred to the relevant agency.**
R6.6.2 In accordance with section 148 of the *Planning and Development Act 2007*, if potential for contamination is identified through the Contaminated Sites Management Assessment (see R6.6.1), the application is accompanied by a report endorsed by the Environment Protection Authority (EPA), on the assessment and/or management of the known and/or potential contamination.	C6.6.2 If a report endorsed by the EPA is not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**C6.6.2** **The alignment of the sewer and stormwater mains is above the 100-yr flood level of the Molonglo River and Holden's Creek Pond.** **There are no areas of contaminated land along the proposed alignment of the trunk sewer and stormwater.** **Based on previous investigations undertaken, it is not anticipated that any known contaminated sites in the vicinity of Molonglo Infrastructure2A Overlap.** **Application to be referred to the relevant agency.**

6.7 Trees		
Rules	**Criteria**	**Comment**
R6.7.1 In accordance with section 148 of the *Planning and Development Act 2007*, where the development proposal requires groundwork within the tree protection zone of a protected tree, or is likely to cause damage to or removal of, any protected trees, the application must be accompanied by a Tree Management Plan approved under the *Tree Protection Act 2005*. Note: "Protected tree" is defined under the Tree Protection Act 2005.	C6.7.1 If an approved Tree Management Plan is required, but not provided, then a draft Tree Management Plan is to accompany the application. The draft Tree Management Plan will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**C6.7.1** **No protected trees exist along the alignment of the proposed trunk sewer and stormwater.** **Tree Management Plans for Molonglo Infrastructure2A Overlap works are included.** **Application to be referred to the relevant agency.**
6.8 Erosion and Sediment Control		
R6.8.1 A plan, endorsed by the relevant agency, is provided to demonstrate that the development complies with the *Guidelines for Erosion and Sediment Control During Land Development*.	C6.8.1 If an endorsed plan is not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**C6.8.1** **An endorsed Sediment and Erosion Control Plan is not relevant to this stage of the project.** **Concept Construction Management Plana, incorporating pollution control measures are included for both Trunk Sewer and Stormwater Diversion and Molonglo Infrastructure2A Overlap works** **This plan will be finalised by**

		the successful Contractor who will liaise with ACT Environment Protection Authority prior to commencing construction in accordance with their Environmental Authorisation.
6.9 Hazardous Materials		
R6.9.1 In accordance with section 148 of the Planning and Development Act 2007, applications are to be accompanied by a Statement of Endorsement from the Department of Territory and Municipal Services (Asset Acceptance) stating that the waste facilities and management associated with the development are in accordance with the Development Control Code for Best Practice Waste Management in the ACT 1999 and AS 2601-2001 Demolition of Structures. A Hazardous Materials Survey is to be submitted to TaMS Environment Protection Unit for endorsement. That endorsement is to be copied to Asset Acceptance. For residential premises (including garages and carports)	C6.9.1 If a Statement of Endorsement is not provided the application will be referred to the Department of Territory and Municipal Services (Asset Acceptance) in accordance with the requirements of the *Planning and Development Act 2007*.	**C6.9.1** **Waste facilities and management is not included in the scope of the proposed development.** **This Rule is therefore not relevant to the proposed development.**

constructed prior to 1985 or Commercial / Industrial premises constructed prior to 2005, a Hazardous Materials Survey (including an asbestos survey) is to be carried out and signed by an appropriately licensed person. The Hazardous Materials Survey is to also cover disposal of hazardous materials and show that: a) Hazardous material disposal (including asbestos) is to be at a licensed disposal facility in the ACT b) If hazardous materials are to be transported for disposal interstate, approval from the Environment Protection Authority is obtained prior to removal of material from the site. c) An appropriately licensed contractor is engaged for the removal and transport of all hazardous materials (including asbestos) present at the site.		
6.10 Environment Protection		
R6.10.1 In accordance with section 148 of the Planning and Development Act 2007, for developments on a site greater than 0.3 of a hectare, the application is accompanied by a Pollution Control Plan endorsed by the ACT Environment	C6.10.1 If an endorsed Pollution Control Plan is not provided the application will be referred to the relevant agency in accordance with the requirements of the Planning and Development Act 2007.	**C6.10.1** **An endorsed Sediment and Erosion Control Plan is not relevant to this stage of the project.** **Concept Construction Management Plana, incorporating pollution control measures are**

Protection Authority.		**included for both Trunk Sewer and Stormwater Diversion and Molonglo Infrastructure2A Overlap works** **This plan will be finalised by the successful Contractor who will liaise with ACT Environment Protection Authority prior to commencing construction in accordance with their Environmental Authorisation.**

Element 7: Services

Intent:

a) To provide for appropriately serviced developments that meet the needs of service providers and users of the proposed development

Rules	**Criteria**	**Comment**
7.1 Waste Management		
Rules	**Criteria**	**Comment**

R7.1.1 In accordance with section 148 of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Compliance from the Department of Territory and Municipal Services stating that the waste facilities and management associated with the development are in accordance with the *Development Control Code for Best Practice Waste Management in the ACT 1999*	C7.1.1 If a Statement of Compliance is not provided the application will be referred to the Department of Territory and Municipal Services in accordance with the requirements of the *Planning and Development Act 2007*	**C7.1.1** **Waste facilities and management is not included in the scope of the proposed development.** **This Rule is therefore not relevant to the proposed development.**
7.2 Utilities		
R7.2.1 A Statement of Compliance from each relevant utility provider is provided, which confirms that the location and nature of earthworks, utility connections, proposed buildings, pavements and landscape features comply with utility standards, access provisions and asset clearance zones. Note: Where there is a conflict between planning and utility requirements, the utility requirements take precedence over other provisions of this Code.	C7.2.1 If a statement of compliance is not provided, the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007.*	**C7.2.1** **Application to be referred to relevant utility providers.** **Drawings will be submitted to the relevant utility provider seeking their design acceptance of the proposed works at detailed design stage.** **DA drawings for the Trunk Sewer and Stormwater Diversion have been provided to both TaMS and ActewAGL.**
Rules	**Criteria**	**Comment**

7.3 Storage		
R7.3.1 Outdoor storage areas are located behind the building line and screened from view from any road or other public area.	C7.3.1 Where the proposed use of the site requires open areas for storage of goods and materials, adequate provision is included in the design layout of the site.	**R7.3.1** **Outdoor storage areas are not included in the scope of the proposed development.** **This Rule is therefore not relevant to the proposed development.**
R7.3.2 Outdoor storage areas do not encroach on carparking areas, driveways or landscape areas	This is a mandatory requirement. There is no applicable criterion.	**R7.3.2** **Outdoor storage areas are not included in the scope of the proposed development.** **This Rule is therefore not relevant to the proposed development.**
7.4 Servicing and Site Management		
R7.4.1 In accordance with section 148 of the *Planning and Development Act 2007*, the application is accompanied by a Statement of Endorsement from the relevant agency stating that the waste facilities and management associated with the development are in accordance with the *Design Standards for Urban Infrastructure*.	C7.4.1 If a Statement of Endorsement is not provided the application will be referred to the relevant agency in accordance with the requirements of the *Planning and Development Act 2007*.	**C7.4.1** **Waste facilities and management is not included in the scope of the proposed development.** **This Rule is therefore not relevant to the proposed development.**

APPENDIX C

S211 EXEMPTION LETTER

Andrew Barr MLA

MINISTER FOR EDUCATION AND TRAINING
MINISTER FOR CHILDREN AND YOUNG PEOPLE
MINISTER FOR PLANNING
MINISTER FOR TOURISM, SPORT AND RECREATION

MEMBER FOR MOLONGLO

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ACT Procurement Solutions
PO Box 818
DICKSON ACT, 2602

Dear Mr Howard

Molonglo Urban Land Development – Section 211 Exemption Request

I have reviewed the information provided in relation to the above proposal in order to consider the merit of your application under Section 211 of the *Planning and Development Act 2007* (the Act) for an exemption from the requirement to complete an Environmental Impact Statement (EIS).

The proposed development is listed in Schedule 4 of the Act as an activity that requires an EIS to be completed. However, the proposal may be considered exempt from the EIS requirement if in the opinion of the Minister, or his delegate, the expected environmental impact of the proposal has already been sufficiently addressed by another study or studies. Having considered the information submitted in support of your request, I consider that the proposal as submitted meets this exemption criterion.

As Minister for the purposes of the Act, I am therefore pleased to advise that the proposed development of the suburbs of North Weston, Wright, Coombs and associated infrastructure will not require any further environmental assessment. You are now able to lodge an impact track development application for these estates and infrastructure projects. Please ensure that you include a copy of this letter with your development application.

Yours sincerely

Andrew Barr MLA
Minister for Planning

ACT LEGISLATIVE ASSEMBLY

London Circuit, Canberra ACT 2601 GPO Box 1020, Canberra ACT 2601
Phone (02) 6205 0011 Fax (02) 6205 0157 Email barr@act.gov.au

cc Chris R
Paul L

BM12/1017

COPY

RECEIVED
15.5.12

Simon Corbell MLA

ATTORNEY GENERAL
MINISTER FOR POLICE AND EMERGENCY SERVICES
MINISTER FOR THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

MEMBER FOR MOLONGLO

Michael
FYI
1715

Mr David Dawes
Director - General
Economic Development Directorate
Level 6 Transact House
470 Northbourne Avenue
DICKSON ACT 2602

Dear Mr Dawes

Molonglo Valley Stage 2 - Urban Development Area B1 and associated infrastructure s211 exemption from the requirement to complete an Environmental Impact Statement

I have reviewed the information provided in your application under Section 211 of the *Planning and Development Act 2007* (the Act) for an exemption from the requirement to complete an Environmental Impact Statement (EIS).

Having considered the information submitted in support of your request, I consider that the expected environmental impact of the proposal has been sufficiently addressed.

As Minister responsible for the Act, I advise that the proposed development of Molonglo Valley Stage 2 - Urban Development Area B1 and associated infrastructure as indicated in the attached map, will not require any further environmental assessment. You are now able to lodge an impact track development application for actions described in your application with the Environment and Sustainable Development Directorate. Please ensure that you include a copy of this letter with your development application.

Yours sincerely

Simon Corbell MLA
Minister for the Environment and Sustainable Development
14.5.12

ACT LEGISLATIVE ASSEMBLY

London Circuit, Canberra ACT 2601 GPO Box 1020, Canberra ACT 2601
Phone (02) 6205 0000 Fax (02) 6205 0535 Email corbell@act.gov.au

Legend

- Area subject to this application - urban development Area B1 footprint and associated infrastructure
- Molonglo Stage 2 - Urban Development Area B1
- Area subject to previous exemption under S211-July 2009
- Molonglo Valley Stage 2 - future development areas not included in this application
- TP Molonglo River Corridor (NUZ4)
- High quality potential PTWL habitat
- Moderate quality potential PTWL habitat
- Low quality potential PTWL habitat
- Regenerating pines
- ACT derived grassland (Stringybark)
- ACT Stringybark woodland
- ACT listed BGW
- EPBC derived grassland (BGW)
- EPBC BGW 12-15 native species
- EPBC BGW 16-20 native species
- EPBC BGW 21+ native species
- EPBC BGW regenerating
- EPBC natural temperate grassland
- Native vegetation
- Exotic vegetation
- Historic site
- Artefact
- Isolated find
- Previous site
- Artefact scatter
- Geological site
- Contaminated site

Molonglo Valley Stage 2 - Urban Development Area B1 associated infrastructure:

1. **Road Access**
   a. John Gorton Drive Stage 2a
   b. Uriarra Road upgrade
2. **Gravity sewer** - extension of Molonglo trunk sewer from Holden's creek to Molonglo 2
3. **Stormwater**
   a. Southern catchment diversion drain/swale into Holden's creek
   b. Water quality control pond adjacent to John Gorton Drive Stage 2a
4. **Water**
   a. Two 300mm water mains
   b. One 600mm water main on the south side of Uriarra road
5. **Gas, electricity and telecommunications infrastructure**
6. **Other works including**
   a. Movement corridors (bus ways, footpaths and cycle ways)
   b. WSUD measures including drainage lines, ponds and pipes
   c. Erosion and sediment control measures; and
   d. Bushfire planning provisions including asset protection zones (APZ)

Molonglo Valley Stage 2 - Urban Development Area B1

MOLA 3, MVF1, MVF2, 14N1, MOLIF3, MVF3, MVF4, MV1, Molonglo, MV12, MVF5, 14E1 - Stromlo, MVF6, 14N2, MV10, Stockpile soil material, 14E1, MVF7, MVF8, MVF9, MHS 1, MV2, MVF10, 175metres, Farmhouse, Septic Tank & Stockyards, Illegal Tip, MV3, MV4, 14F2, MV5, Stage 2, MV7, MV13, MV8, MV15, 19H1, 19H2, MVF14, Dam, Stockyards, 1/9 9F2, MVF16, MVF17, MV14, 1/9 9F1, MV16, MV18, MVF15, MVF18, Potential Sheep Di, Homestead, MVF1, 1/9 9J1, MV17

JOHN GORTON DRIVE, CROSSING, COPPINS

B1 area trunk service infrastructure

- Sewer connection
- Water connection
- Stormwater system
- Area-B1 stormwater retention pond

0 100 200 300 400 500 Metres

Molonglo Valley Stage 2 - Urban Development Area B1 and associated infrastructure

Proposed Section 211 Application Area

http://www.actpla.act.gov.au/actlic DPMH - 16 Challis Street Dickson ACT 2601

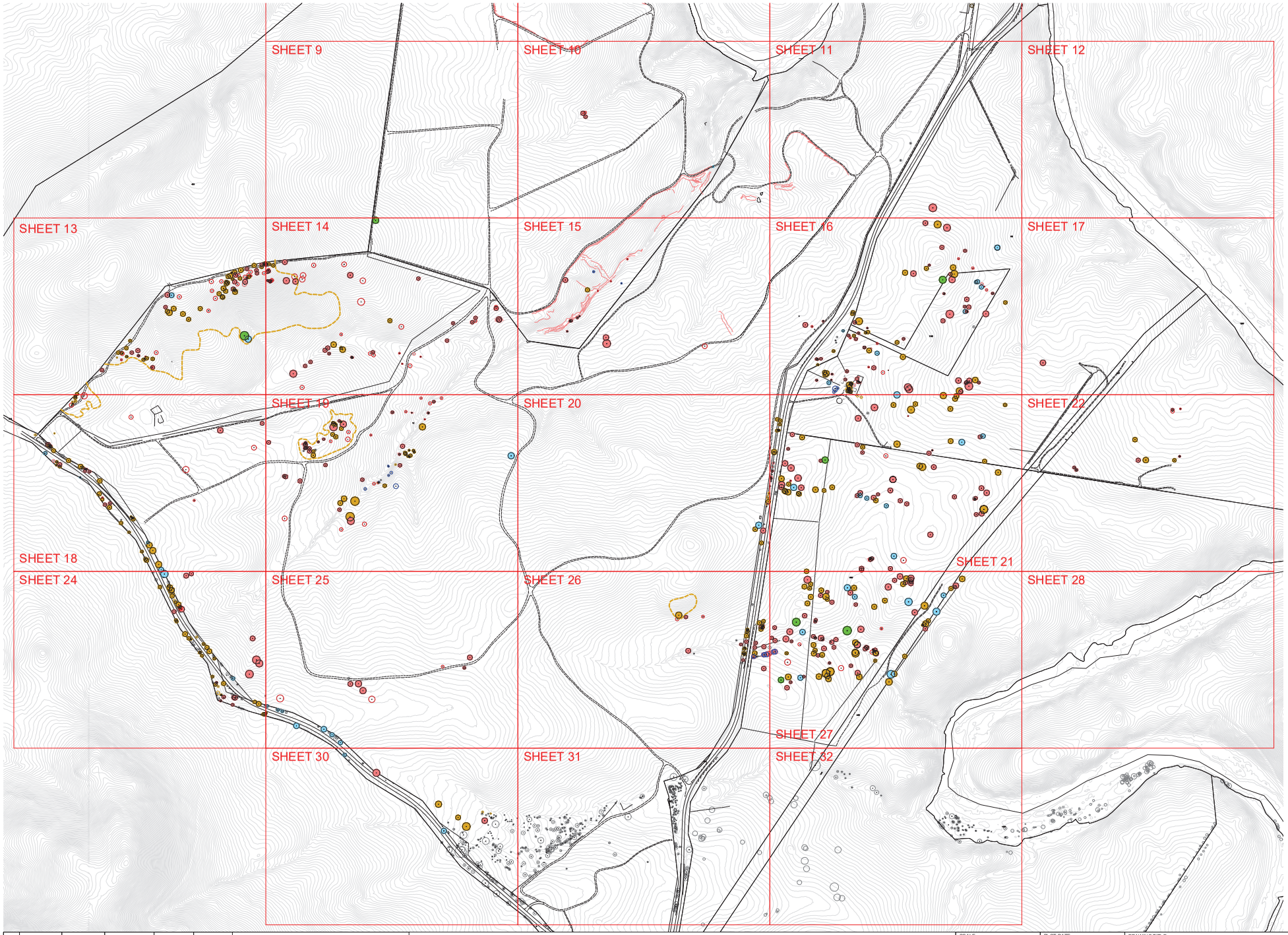
Scale: 1:7500 (A2) Date: 02/05/2012

ACT Government Environment and Sustainable Development

Obj ref: A7260609

APPENDIX D

TREE ASSESSMENT FOR MOLONGLO 2



LEGEND

TREE QUALITY RATING:

- EXCEPTIONAL QUALITY RATING REGULATED TREE
- HIGH QUALITY RATING REGULATED TREE
- MEDIUM QUALITY RATING REGULATED TREE
- POOR QUALITY RATING REGULATED TREE
- EXCEPTIONAL QUALITY RATING NON-REGULATED TREE
- HIGH QUALITY RATING NON-REGULATED TREE
- MEDIUM QUALITY RATING NON-REGULATED TREE
- POOR QUALITY RATING NON-REGULATED TREE
- NOT ASSESSED
- PINUS RADIATA
- DEAD

TREE GROUPS COLOURS AS ABOVE

NOTE: 1m CONTOUR INTERVAL

NO	DESIGN	DRAWN	CHECKED	VER'D	DATE	AMENDMENT/ISSUE
A	N/A	TB	DS	DM	24.11.11	ISSUE FOR REVIEW

TREE ASSESSMENT
THESE PLANS TO BE READ IN CONJUNCTION
WITH THE TREE ASSESSMENT REPORT.

scenic landscape architecture
90 Dunstan Street
Curtin ACT 2605
scenic@scenic.net.au
p (02) 6161 2554
f (02) 6161 2553

SCALE 1:5000 @ A1
1:10000 @ A3

PLOT DATE 24.11.11

CLIENT
LAND DEVELOPMENT AGENCY

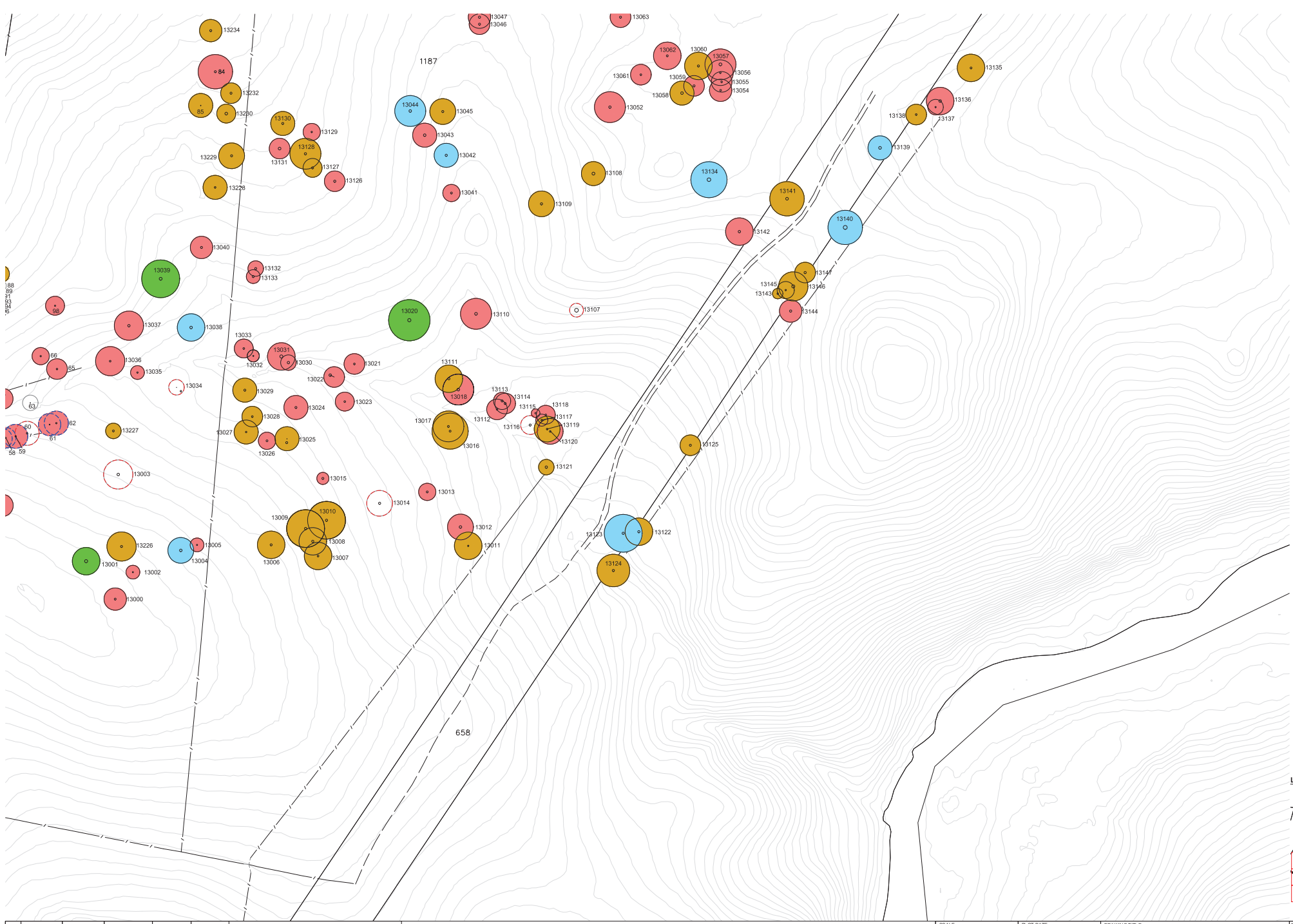
DRAWING TITLE
ARBORICULTURAL TREE ASSESSMENT COVER SHEET

PROJECT
MOLONGLO VALLEY STAGE 2

PROJECT NO. 11-318

Dwg NO. TA1

SHEET NO. CO



LEGEND

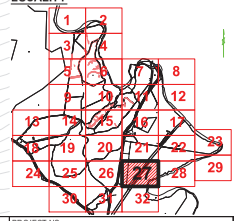
TREE QUALITY RATING:

- EXCEPTIONAL QUALITY RATING REGULATED TREE
- HIGH QUALITY RATING REGULATED TREE
- MEDIUM QUALITY RATING REGULATED TREE
- POOR QUALITY RATING REGULATED TREE
- EXCEPTIONAL QUALITY RATING NON-REGULATED TREE
- HIGH QUALITY RATING NON-REGULATED TREE
- MEDIUM QUALITY RATING NON-REGULATED TREE
- POOR QUALITY RATING NON-REGULATED TREE
- NOT ASSESSED
- PINUS RADIATA
- DEAD

TREE GROUPS COLOURS AS ABOVE

NOTE: 1m CONTOUR INTERVAL

LOCALITY



NO	DESIGN	DRAWN	CHECKED	VER'D	DATE	AMENDMENT/ISSUE
A	N/A	TB	DS	DM	24.11.11	ISSUE FOR REVIEW

TREE ASSESSMENT
THESE PLANS TO BE READ IN CONJUNCTION WITH THE TREE ASSESSMENT REPORT.

scenic landscape architecture
90 Dunstan Street
Curtin ACT 2605
scenic@scenic.net.au
p:(02) 6161 2554
f: (02) 6161 2553

SCALE 1:1000 @ A1
1:2000 @ A3

PLOT DATE 24.11.11

CLIENT
LAND DEVELOPMENT AGENCY

DRAWING TITLE
ARBORICULTURAL TREE ASSESSMENT SHEET 27

PROJECT
MOLONGLO VALLEY STAGE 2

PROJECT NO. 11-318

Dwg NO. TA1

SHEET NO. 27

Molonglo Stage 2

TREE ASSESSMENT

SUMMARY	
TREE NUMBER/GROUP	13035
REGULATED TREE	Y

TREE ASSESSMENT	
ARBORCULTURAL ASSESSMENT	P
URBAN AMENITY ASSESSMENT	L

RECOMMENDATION	NAME	RETAIN AND MANAGE / REMOVE
Arborist	Laity	REMOVE
Landscape Architect	Scenic	

GENERAL TREE DATA	
Assessment Date	SEP-11
Species	E. blakelyi
Common Name	Blakelyi's Red Gum

LOCATION			
E: 201993.491		N: 601217.685	
Height (M)	15	Canopy (M)	8
Trunk Circum	2.51	No of Trunks	

TREE MANAGEMENT	
POTENTIAL TO REDUCE RISK	3
POTENTIAL TO IMPROVE AMENITY	1

NOTES

hollows, almost dead, will collapse

ARBORICULTURAL CHARACTERISTICS	RATING
Canopy Density	1
Canopy Dead Wood	1
Insect Attack	2
Disease	3
Epicormic Growth	1
Mistletoe	3
Form	2
Age	1
Tolerance to Disturbance	1
Risk Potential	1
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	RATING
Contribution to Existing Landscape	1
Potential Contribution to Future Landscape	1
Visual/ Scenic	1
Unique Species	1
Habitat Quality	3
Habitat Value	3
Cultural Value	1
Social Value	1
Scientific Value	1
Remnant Species	2
Landscape Tree Group	

Molonglo Stage 2

TREE ASSESSMENT

SUMMARY	
TREE NUMBER/GROUP	13036
REGULATED TREE	Y

TREE ASSESSMENT	
ARBORCULTURAL ASSESSMENT	P
URBAN AMENITY ASSESSMENT	L

RECOMMENDATION	NAME	RETAIN AND MANAGE / REMOVE
Arborist	Laity	REMOVE
Landscape Architect	Scenic	

GENERAL TREE DATA	
Assessment Date	SEP-11
Species	E. blakelyi
Common Name	Blakelyi's Red Gum

LOCATION			
E: 201977.644		N: 601224.3	
Height (M)	17.5	Canopy (M)	17
Trunk Circum	2.98	No of Trunks	

TREE MANAGEMENT	
POTENTIAL TO REDUCE RISK	3
POTENTIAL TO IMPROVE AMENITY	1

NOTES

hollows, fungal fruiting bodies, likely to collapse

ARBORICULTURAL CHARACTERISTICS	RATING
Canopy Density	1
Canopy Dead Wood	2
Insect Attack	2
Disease	2
Epicormic Growth	1
Mistletoe	3
Form	4
Age	2
Tolerance to Disturbance	2
Risk Potential	1
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	RATING
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	1
Visual/ Scenic	1
Unique Species	1
Habitat Quality	3
Habitat Value	3
Cultural Value	1
Social Value	1
Scientific Value	1
Remnant Species	2
Landscape Tree Group	

Molonglo Stage 2

TREE ASSESSMENT

SUMMARY	
TREE NUMBER/GROUP	13037
REGULATED TREE	Y

TREE ASSESSMENT	
ARBORCULTURAL ASSESSMENT	P
URBAN AMENITY ASSESSMENT	H

RECOMMENDATION	NAME	RETAIN AND MANAGE / REMOVE
Arborist	Laity	RETAIN
Landscape Architect	Scenic	

GENERAL TREE DATA	
Assessment Date	SEP-11
Species	E. melliodora
Common Name	Yellow Box

LOCATION			
E: 201988.525		N: 601244.908	
Height (M)	20.5	Canopy (M)	17
Trunk Circum	4.39	No of Trunks	

TREE MANAGEMENT	
POTENTIAL TO REDUCE RISK	3
POTENTIAL TO IMPROVE AMENITY	2

NOTES

remove lower branches to improve form, lop upper canopy to reduce risk and maintain habitat

ARBORICULTURAL CHARACTERISTICS	RATING
Canopy Density	1
Canopy Dead Wood	1
Insect Attack	3
Disease	3
Epicormic Growth	1
Mistletoe	3
Form	2
Age	1
Tolerance to Disturbance	2
Risk Potential	1
Health / Condition	1

URBAN AMENITY CHARACTERISTICS	RATING
Contribution to Existing Landscape	2
Potential Contribution to Future Landscape	2
Visual/ Scenic	2
Unique Species	1
Habitat Quality	3
Habitat Value	3
Cultural Value	1
Social Value	1
Scientific Value	1
Remnant Species	2
Landscape Tree Group	

APPENDIX E

DISCUSSIONS WITH ROADS ACT

Linda Mulyadi

From: McHugh, Ben <Ben.McHugh@act.gov.au>
Sent: Thursday, 8 March 2012 3:12 PM
To: James Mason
Cc: Linda Mulyadi; Moya Watson
Subject: RE: C10104 John Gorton Drive Extension - Compound Curves

Categories: C10104

James,

I tend to agree.

Roads ACT would prefer that the ratio was as close to the designated ratio of 1:0.75 as defined in the Austroads guidelines. Noting that the ratio in this particular case does not exceed the absolute minimum of 1:0.5. It is disappointing that in a green field design such as this, road geometry compromises cannot be avoided. This comment is not directed at Brown consulting.

Following some consideration, and given the quantum of the radii and the design speeds of the curves included in the compound combination, in this particular case Roads ACT will reluctantly accept the proposed design. The acceptance is conditional on the basis that due consideration is given the road corridor (verge) design in the vicinity of the curve change to enhance the message to road users. I'm not sure exactly how you might achieve this.

If you have any questions, please give me a call.

Regards

Ben

Ben McHugh
Major Capital Works
Directorate of Territory & Municipal Services · Roads ACT
Level 7, Macarthur House · 12 Wattle Street, Lyneham ACT 2602
Locked Bag 2000 Civic Square · ACT 2600·
Ph: (02) 6207 2738 Mobile: 0421 414 605 Facsimile: (02) 6207 6872
ACT Government Homepage: www.act.gov.au

From: James Mason [mailto:James.Mason@brownconsulting.com.au]
Sent: Thursday, 8 March 2012 2:07 PM
To: McHugh, Ben
Cc: Linda Mulyadi; Moya Watson
Subject: RE: C10104 John Gorton Drive Extension - Compound Curves

Ben,

We looked at that criteria too.

Calculated speed for 805 radius with 3% superelevation is 140km/h.
Calculated speed for 530 radius with 3% superelevation is 115km/h.

As such the speed differential is 25km/h.

So I guess the question is - how relevant is this criteria when the possible speeds are so high (suitable for a Parkway), but our design speed is only 80km/h?
It comes back to the fact that the radii are quite big in this section of JGD.

It would be a totally different case if the smaller radius was only just suitable for the design speed – a speeding car could possibly lose control when the curve tightened up.

Regards

James Mason | Manager - Roads & Traffic
Brown Consulting (ACT) Pty Ltd

BROWN Smart Consulting

t. 02 6211 7100 | *f.* 02 6211 7199
e. James.Mason@brownconsulting.com.au
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601
GPO Box 261, Canberra, ACT, 2601
www.brownconsulting.com.au

From: McHugh, Ben [mailto:Ben.McHugh@act.gov.au]
Sent: Thursday, 8 March 2012 12:59 PM
To: James Mason
Subject: RE: C10104 John Gorton Drive Extension - Compound Curves

James,

I had a read up last night on the latest guidelines, the reference that caught my eye related to the difference in design speed of the two radii.
The guidelines recommend that the difference in design speed between the two curve radii is less than 5km/h (that is the maximum design speed). I have not had a chance to look up the design speeds for the two radii being the 805m and 530m. Are you able to inform me of these?

Ben

From: James Mason [mailto:James.Mason@brownconsulting.com.au]
Sent: Thursday, 8 March 2012 12:07 PM
To: McHugh, Ben
Cc: Linda Mulyadi
Subject: C10104 John Gorton Drive Extension - Compound Curves

Ben,

JOHN GORTON DRIVE EXTENSION

Thanks for meeting with us yesterday with such short notice.

Just wondering if you have had a chance to consider the proposed compound curves for the JGD alignment?

Regards

James Mason | Manager - Roads & Traffic
Brown Consulting (ACT) Pty Ltd

BROWN Smart Consulting

t. 02 6211 7100 | *f.* 02 6211 7199
e. James.Mason@brownconsulting.com.au
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601

GPO Box 261, Canberra, ACT, 2601
www.brownconsulting.com.au

APPENDIX F

DISCUSSIONS WITH TELSTRA

Linda Mulyadi

From: Beljic, Miloje <Miloje.Beljic@act.gov.au>
Sent: Thursday, 24 May 2012 8:52 AM
To: James Mason; Linda Mulyadi
Cc: Munson, David
Subject: FW: John Gorton Drive Stage 1D -Telstra services relocation

Categories: C10104

James, Linda,

FYI

Regards

Misha Beljic | **Senior Engineer** |
| **Phone** 02 6207 1664 | **Fax** 02 6207 0123 |
Infrastructure Planning and Design | **Infrastructure and Capital Works** | Economic Development Directorate | **ACT Government**
Level 6, TransACT House, 470 Northbourne Avenue Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 | www.economicdevelopment.act.gov.au

---

From: Schneider, Mark P [mailto:Mark.P.Schneider@team.telstra.com]
Sent: Wednesday, 23 May 2012 10:18 PM
To: Beljic, Miloje
Cc: Husband, John; Oxborrow, Stuart
Subject: RE: John Gorton Drive Stage 1D -Telstra services relocation

Miloje,

Confirmed. Telstra will rely on its schedule 3 powers in the telecommunications act.

Regards

Mark Schneider
Project Specialist
Network Integrity
L9, 18 Smith Street, Parramatta NSW Australia

Tel. (02) 8842 5185 Mob. 0419 242 044

Dial 1100 Before You Dig Network Integrity: Working with the civil construction industry to prevent damage to Telstra's underground assets

---

From: Beljic, Miloje [mailto:Miloje.Beljic@act.gov.au]
Sent: Wednesday, 23 May 2012 1:17 PM
To: Schneider, Mark P

Cc: Husband, John; Oxborrow, Stuart
Subject: FW: John Gorton Drive Stage 1D -Telstra services relocation

Mark,

Further to your earlier advice provided to John, are you now in the position to confirm that the Telstra services relocation as part of JGD Stage 1d wouldn't trigger a DA. This information is important for the JGD Stage 1d contract but also for the Molonglo project coordination in general.
Your advice would be greatly appreciated.

Regards

Misha Beljic | **Senior Engineer** |
| **Phone** 02 6207 1664 | **Fax** 02 6207 0123 |
Infrastructure Planning and Design | **Infrastructure and Capital Works** | Economic Development Directorate | **ACT Government**
Level 6, TransACT House, 470 Northbourne Avenue Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 | www.economicdevelopment.act.gov.au

---

From: Husband, John
Sent: Wednesday, 18 April 2012 8:50 AM
To: Oxborrow, Stuart; Beljic, Miloje
Subject: FW: John Gorton Drive Stage 1D -Telstra services relaocation

Gents

Does this help with the amended DA application?

Cheers

John Husband | Senior Project Manager
Phone 02 6205 2920| Fax 02 6207 0123| Mobile 0411774822
Infrastructure and Capital Works| Economic Development Directorate | **ACT Government**
Level 6, TransACT House, 470 Northbourne Ave, Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 www.edd.act.gov.au

---

From: Schneider, Mark P [mailto:Mark.P.Schneider@team.telstra.com]
Sent: Tuesday, 17 April 2012 5:37 PM
To: Husband, John
Subject: RE: John Gorton Drive Stage 1D -Telstra services relaocation

John,

Telstra need only apply for development application (DA) if a project **is not** considered low impact under the Telecommunications ACT 1997 (*Cth*) Schedule 3 Powers and Immunities.
At present we have not identified any trigger that would make this project high impact, hence we will looking at relying on our Schedule 3 powers and Immunities to install the relocated network both temporary and permanent. There are triggers in the Telco Act that can make a project high impact, however based upon the likelihood that an environmental evaluation has already been undertaken for the Molonglo development, we would simply work under any environmental plan or conditions imposed upon this site. In-turn we will conduct our own assessment to confirm a low impact installation.

Being low impact, Telstra need only present and seek sign-off of a land access waiver from land authorities / owners affected by our relocation works to waive the individuals / authorities right to receive a Land Access Notice from Telstra; alternatively we would simply issue a Land Access Notice to enter and occupy the land. The reason we prefer the waiver, is that we would encourage an agreement with all affected land owner / authorities before proceeding.

Happy to discuss further if needed.

Regards

Mark Schneider
Project Specialist
Network Integrity
L9, 18 Smith Street, Parramatta NSW Australia

Tel. (02) 8842 5185 Mob. [redacted]

Dial 1100 Before You Dig Network Integrity: Working with the civil construction industry to prevent damage to Telstra's underground assets

---

From: Husband, John [mailto:John.Husband@act.gov.au]
Sent: Tuesday, 17 April 2012 4:29 PM
To: Schneider, Mark P
Subject: John Gorton Drive Stage 1D -Telstra services relaocation
Importance: High

Hi Mark

As you can see from the emails below we are trying to find out if Telstra need a DA (Development Application) for the relocation works.

Can you help. Do you know if you need a DA to complete the relocation works?

Any assistance very much appreciated

Thanks

John Husband | Senior Project Manager
Phone 02 6205 2920| Fax 02 6207 0123| Mobile [redacted]
Infrastructure and Capital Works| Economic Development Directorate | **ACT Government**
Level 6, TransACT House, 470 Northbourne Ave, Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 www.edd.act.gov.au

---

From: McGrath, Michael
Sent: Monday, 16 April 2012 7:52 AM
To: McNulty, Hamish
Cc: Husband, John
Subject: FW: FJohn Gorton Drive Stage 1D -Telstra services relaocation
Importance: High

Hamish

As discussed, could you and Jim assist in obtaining resolution.

Regards

Michael McGrath | Senior Program Manager
Phone 02 6205 9678 | Fax 02 6207 0123 |

Capital Works Division | Economic Development Directorate | **ACT Government**
Level 6 TransACT House 470 Northbourne Av Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 | www.edd.act.gov.au

---

From: McGrath, Michael
Sent: Monday, 16 April 2012 7:23 AM
To: Corrigan, Jim
Cc: Husband, John; Oxborrow, Stuart
Subject: FW: FJohn Gorton Drive Stage 1D -Telstra services relaocation
Importance: High

Jim

Your assistance is sought on this issue! Can we please discuss.

Regards

Michael McGrath | Senior Program Manager
Phone 02 6205 9678 | Fax 02 6207 0123 |
Capital Works Division | Economic Development Directorate | **ACT Government**
Level 6 TransACT House 470 Northbourne Av Dickson ACT 2602 | GPO Box 158 Canberra ACT 2601 | www.edd.act.gov.au

---

From: Oxborrow, Stuart
Sent: Friday, 13 April 2012 6:13 PM
To: McGrath, Michael
Subject: FW: FJohn Gorton Drive Stage 1D -Telstra services relaocation

Michael,

For your info.

The relocation of the Telstra cables cannot be incorporated in the amended DA submission. Misha is checking whether Telstra is exempt from a DA, in general.

Regards,

Stuart

From: Beljic, Miloje
Sent: Friday, 13 April 2012 5:10 PM
To: Linda Mulyadi
Cc: James Mason; Gaschke, Tim; Munson, David; Oxborrow, Stuart; Husband, John
Subject: FJohn Gorton Drive Stage 1D -Telstra services relaocation

Linda,

For your information. This is what we anticipated. We have to do a bit of a search through the *Planning and Development Regulation 2008* and the *Telecommunications Act 1997*. We can discuss this on Monday.

Regards

Misha Beljic | Senior Engineer
Phone 02 6207 1664 | Fax 02 6207 2587
Land and Infrastructure Planning| Environment and Sustainable Development | **ACT Government**
Dame Pattie Menzies House, Challis Street, Dickson | GPO Box 1908 Canberra ACT 2601 | www.environment.act.gov.au

From: Watts, Michaela
Sent: Friday, 13 April 2012 4:54 PM
To: Beljic, Miloje
Subject: RE: John Gorton Drive Stage 1D

Hi Misha

The temporary Telstra services have not been included in the original approval as the documentation supporting the DA indicated that this was still under investigation and had not been resolved at the time of lodgement.

These works would not be considered as an amendment, and would be new work. You might check the *Planning and Development Regulation 2008* and the *Telecommunications Act 1997* to determine if this work is exempt from requiring a DA. If this is not exempt then you could include this in the DA for the sewer taking note of the status of the land and the location of the works in relation to any EIS items which might apply.

If there are any EIS triggers applicable then this DA can be considered under the Molonglo Valley Stage 2 Area B1 exemption from requiring an EIS and be lodged in this impact track if/when the Minister decides to grant the exemption. If there are no EIS items applicable, then the application can be lodged in the Merit track. Also note the requirements under the NES Plan and the *Environment Protection and Biodiversity Conservation Act 1999* and the applicability to this work.

Hope this helps,

Regards

Michaela

BROWN

Estate Development Plan Report

Denman Prospect Stage 1A

18 September 2014

C13172

Urban Development

ACT Government
Economic Development

Land Development Agency
CANBERRA FIRST

Smart Consulting

COMMERCIAL IN CONFIDENCE

Brown Consulting (ACT) Pty Ltd
Level 6
121 Marcus Clarke Street
CANBERRA CITY ACT 2601

Ph: (02) 6211 7100

2013

DOCUMENT CONTROL

Denman Prospect Stage 1A Estate Development Plan Report

Issue	Date	Issue Details	Author	Checked
0	9/04/2014	Draft	PB	
1	30/04/2014	Final Draft	PB / SpaceLab	PB
2	16/05/2014	EDP Submission	PB / SpaceLab	PB
3	23/05/2014	EDP Submission	PB	
4	2/9/2014	EDP Re Submission 2	PB	IM
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Table of Contents

1. Introduction 1

1.1 Background 4
1.2 Site Characteristics 4
1.2.1 Location 4
1.2.2 General Landform, Views and Drainage 4
1.2.3 Existing Vegetation and Habitat 4
1.3 Indigenous and European Heritage 5
1.4 Planning Context 5

2. Denman Prospect Stage 1 Planning Principles 6

3. Denman Prospect Stage 1 Planning Requirements 8

3.1 Dwelling Numbers and Housing Mix 10
3.1.1 Dwelling Yield 10
3.1.2 Housing Mix 11
3.2 Commercial Site – Special Area 2 11
3.3 Subdivision 12
3.4 Roads and Access 12
3.5 Public Transport and Inter-town Public Transport Route 12
3.6 Pedestrian / Cycle Network 12
3.7 Equestrian Trails 12
3.8 Open Space 13
3.9 Suburb Entry Features 13
3.10 Trees 13
3.11 Water Sensitive Urban Design 13
3.12 Urban Edge Treatment 13
3.13 Staging of Development 13
3.14 Infrastructure/Services 13

4. Specific Planning Objectives and Principles 14

4.1 Objectives 14
4.2 Principles 14

5. Site Planning Potentials and Constraints 15

5.1 Potentials 15
5.2 Constraints 15
5.3 Planning Assumptions 15

6. Planning Proposal 15

6.1 Urban Design Objectives 15
6.1.1 Urban Design Principles 16

6.2 Compliance with Planning Codes 17
6.2.1 Estate Development Code – 4 October Issue 17
6.2.2 Neighbourhood Design 17
6.2.3 Street Networks 17
6.2.4 Pedestrian and Cyclist Facilities 17
6.2.5 Public Transport 17
6.2.6 Public Open Space 17
6.2.7 Block Layout and Building Envelope Plans 18
6.2.8 Utilities, Waste Management and Sediment and Erosion Control 18
6.2.9 Traffic Generation Numbers 18

7. Traffic Analysis and Road Hierarchy 18

7.1 Road Hierarchy 19
7.2 Traffic Generation 19
7.3 Traffic Distribution 19
7.4 Key Internal Intersections 19

8. Roads 20

8.1 Major Collector Roads 20
8.2 Minor Collector Roads 20
8.3 Access Streets 20
8.4 Parking 20
8.5 Street Lighting 20
8.6 Traffic Noise 21

9. Cycle and Pedestrian Systems 22

9.1 Trunk Paths 22
9.2 Intermediate Paths 22
9.3 Minor Paths 22

10. Land Contamination 23

11. Public Transport 24

12. Agency Liaison and Consultation 24

13. Stormwater Concept Plan 24

13.1 Existing Stormwater Infrastructure 24
13.2 Proposed Stormwater Infrastructure 24
13.3 Overland Flow Management 25
13.4 Water Sensitive Urban Design 25
13.5 Water Quantity and Quality 26

14. Sewer Concept Plan 26

14.1 Existing Sewer Infrastructure 26
14.2 Proposed Sewer Infrastructure 26

15. Water Concept Plan 27

15.1 Existing Water Infrastructure 27
15.2 Proposed Water Infrastructure 27

16. Utilities 28

17. Staging 28

18. Geotechnical Structure and Site Grading 28

18.1 Site Grading 28

19. Off Site Works 29

20. Landscape Master Plan 30

20.1 Character 30
20.2 Development Interface 31
20.3 Tree Survey and Retention 31

21. Block Compliance Plan 32

22. Capital Works 32

23. Bushfire Protection Measures 32

24. Waste Collection Plan 32

25. Landuse Plan 32

26. Development Intentions Plan 32

27. Planning Controls Plan 33

28. Building Envelope Plan 33

APPENDICES

Appendix A Compliance checklist against the Estate Development Code

Appendix B Traffic Report

Appendix C Bushfire Report

Appendix D Water Sensitive Urban Design Checklist

Appendix E Traffic Noise Assessment

Appendix F Contamination

Appendix G Compliance checklist against Crime Prevention Through Environmental Design General Code

Appendix H Compliance checklist against the Single Dwelling Housing Development Code

Appendix I Tree Assessment

Appendix J Compliance Checklist against Relevant Criteria And Applicable Rules Of The Molonglo Valley Stage 2: Draft Planning and Design Framework – Important Planning Requirements

Appendix K Draft Estate Development Plan – Consolidated Comments (and responses)

1. Introduction

The Molonglo Valley to the west of Lake Burley Griffin, is the future land release to house Canberra's growing population. Over the next 40 years the development of the valley is expected to house over 55,000 residents. Coombs and Wright were residential land estates first released within Molonglo by the Land Development Agency (LDA). Denman Prospect, named after Lady Denman, will be the third suburb released in Molonglo and is located on undulating land that flows from the slopes of Mount Stromlo, north and northeast to the Molonglo River corridor and the future Molonglo arterial road (proposed John Gorton Drive) north of Denman Prospect Stage 1.

The Denman Prospect Stage 1A Estate Development Plan (EDP) lays out the principles and key planning objectives upon which the Estate is planned and formalises planning requirements within Urban and landscape Guidelines.

Denman Prospect Stage 1 Residential Estate is to be developed by the ACT Government and is being managed by the Land Development Agency (LDA), an agency established to develop land in the ACT on behalf of the Territory in accordance with the principles and policies laid down in the Territory Plan.

The Denman Prospect Stage 1A Estate Development Plan provides for 401 residential blocks. Stage 1A provides for 20 SR1, 4 SR2, 23 SR3, 321 SR4 and 33 SR5 blocks.

This Estate Development Plan responds to the planning concepts expressed in the Molonglo Valley Stage 2 Planning and Design Framework (the PDF) and Molonglo Valley Stage 2 Planning and Design framework Important Planning Requirements (IPRs).

The Denman Prospect EDP is supported by the subject plans listed below:

DRAWING SCHEDULE

Drawing Number	Plan Number	Drawing Title
C13172-CS+	0.1	COVER SHEET
C13172-DS+	1.1	DRAWING SCHEDULE
C13172-EDP.1+	2.1	ESTATE DEVELOPMENT PLAN SHEET 1 OF 3
C13172-EDP.2+	2.2	ESTATE DEVELOPMENT PLAN SHEET 2
C13172-EDP.3+	2.3	ESTATE DEVELOPMENT PLAN SHEET 3
C13172-BDP.1	3.1	BLOCK DETAILS PLAN SHEET 1 OF 3
C13172-BDP.2	3.2	BLOCK DETAILS PLAN SHEET 2
C13172-BDP.3	3.3	BLOCK DETAILS PLAN SHEET 3
C13172-LP+	4.1	LOCALITY PLAN
C13172-CMP+	5.1	CONCEPT MASTER PLAN
C13172-ST+	6.1	STAGING PLAN
C13172-LUP+	7.1	LAND USE PLAN
C13172-SAP+	8.1	SLOPE ANALYSIS PLAN
C13172-SWMP.1+	9.1	STORMWATER MASTER PLAN SHEET 1 OF 4

Drawing Number	Plan Number	Drawing Title
C13172-SWMP.2+	9.2	STORMWATER MASTER PLAN SHEET 2
C13172-SWMP.3+	9.3	STORMWATER MASTER PLAN SHEET 3
C13172-SWMP.4+	9.4	STORMWATER MASTER PLAN SHEET 4
C13172-WSUD.1+	10.1	WATER SENSITIVE URBAN DESIGN OUTCOMES PLAN SHEET 1 OF 3
C13172-WSUD.2+	10.2	WATER SENSITIVE URBAN DESIGN OUTCOMES PLAN SHEET 2
C13172-WSUD.3+	10.3	WATER SENSITIVE URBAN DESIGN OUTCOMES PLAN SHEET 3
C13172-SMP.1+	11.1	SEWER MASTER PLAN SHEET 1 OF 4
C13172-SMP.2+	11.2	SEWER MASTER PLAN SHEET 2
C13172-SMP.3+	11.3	SEWER MASTER PLAN SHEET 3
C13172-SMP.4+	11.4	SEWER MASTER PLAN SHEET 4
C13172-WMP.1+	12.1	WATER SUPPLY MASTER PLAN SHEET 1 OF 4
C13172-WMP.2+	12.2	WATER SUPPLY MASTER PLAN SHEET 2
C13172-WMP.3+	12.3	WATER SUPPLY MASTER PLAN SHEET 3
C13172-WMP.3+	12.4	WATER SUPPLY MASTER PLAN SHEET 4
C13172-LMP.1	13.1	LANDSCAPE MASTER PLAN SHEET 1 OF 3
C13172-LMP.2	13.2	LANDSCAPE MASTER PLAN SHEET 2
C13172-LMP.3	13.3	LANDSCAPE MASTER PLAN SHEET 3
C13172-TMP.1	14.1	TREE MANAGEMENT PLAN SHEET 1 OF 3
C13172-TMP.2	14.2	TREE MANAGEMENT PLAN SHEET 2
C13172-TMP.3	14.3	TREE MANAGEMENT PLAN SHEET 3
C13172-BCP.1	15.1	BLOCK COMPLIANCE PLAN SHEET 1 OF 4
C13172-BCP.2	15.2	BLOCK COMPLIANCE PLAN SHEET 2
C13172-BCP.3	15.3	BLOCK COMPLIANCE PLAN SHEET 3
C13172-BCP.4	15.4	BLOCK COMPLIANCE PLAN SHEET 4
C13172-RHP.1+	16.1	ROAD HIERARCHY AND TRAFFIC ANALYSIS PLAN
C13172-RHP.2+	16.2	ROAD HIERARCHY AND TRAFFIC ANALYSIS TABLE
C13172-RDP.1+	17.1	ROAD DETAILS PLANS SPECIAL ROAD FEATURES SHEET 1 OF 3
C13172-RDP.2+	17.2	ROAD DETAILS PLANS SPECIAL ROAD FEATURES SHEET 2
C13172-RDP.3+	17.3	ROAD DETAILS PLANS SPECIAL ROAD FEATURES SHEET 3
C13172-RDP.5+	17.5	ROAD DETAILS PLANS SIGHT DISTANCE SHEET 1 OF 2
C13172-RDP.7+	17.7	ROAD DETAILS PLANS SIGHT DISTANCE SHEET 2
C13172-RDP.9+	17.8	ROAD DETAILS PLANS VEHICLE TURNING PATHS SHEET 1 OF 4
C13172-RDP.10+	17.9	ROAD DETAILS PLANS VEHICLE TURNING PATHS SHEET 2
C13172-RDP.11+	17.12	ROAD DETAILS PLANS VEHICLE TURNING PATHS SHEET 3
C13172-RDP.12+	17.13	ROAD DETAILS PLANS VEHICLE TURNING PATHS SHEET 4
C13172-XS.1+	18.1	TYPICAL CROSS SECTIONS LAYOUT & CHAINAGE PLAN SHEET 1 OF 3
C13172-XS.2+	18.2	TYPICAL CROSS SECTIONS LAYOUT & CHAINAGE PLAN SHEET 2
C13172-XS.3+	18.3	TYPICAL CROSS SECTIONS LAYOUT & CHAINAGE PLAN SHEET 3
C13172-XS.4	18.4	TYPICAL ROAD CROSS SECTIONS SHEET 1 OF 3

Drawing Number	Plan Number	Drawing Title
C13172-XS.5	18.5	TYPICAL ROAD CROSS SECTIONS SHEET 2
C13172-XS.6	18.6	TYPICAL ROAD CROSS SECTIONS SHEET 3
C13172-LS.01-LS.35	19.1-19.35	LONGITUDINAL SECTIONS
C13172-PTNM.1+	20.1	PUBLIC TRANSPORT NETWORK SYSTEMS
C13172-PP.1+	21.1	ON STREET PARKING PLAN SHEET 1
C13172-WCP+	22.1	WASTE COLLECTION PLAN
C13172-BEP.1	23.1	BUILDING ENVELOPE PLAN SHEET 1 OF 2
C13172-BEP.2	23.2	BUILDING ENVELOPE PLAN SHEET 2
C13172-DIP.1	24.1	DEVELOPMENT INTENTIONS PLAN
C13172-BMP+	26.1	BUSH FIRE RISK ASSESSMENT AND MANAGEMENT PLAN
C13172-SG.1+	27.1	FILL PLAN SHEET 1 OF 3
C13172-SG.2+	27.2	FILL PLAN SHEET 2
C13172-SG.3+	27.3	FILL PLAN SHEET 3
C13172-EMCP.1+	28.1	ENVIRONMENTAL MANAGEMENT CONCEPT PLAN SHEET 1 OF 3
C13172-EMCP.2+	28.2	ENVIRONMENTAL MANAGEMENT CONCEPT PLAN SHEET 2
C13172-EMCP.3+	28.3	ENVIRONMENTAL MANAGEMENT CONCEPT PLAN SHEET 3
C13172-US.1+	29.1	UTILITIES SERVICES PLAN
C13172-US.2+	29.2	UTILITIES SERVICES SHARED TRENCH DETAIL
C13172-ESMP	29.3	ELECTRICITY SERVICES MASTER PLAN
C13172-FP+	30.1	FENCING PLAN
C13172-PCP.1	31.1	PLANNING CONTROL PLAN SHEET 1 OF 3
C13172-PCP.2	31.2	PLANNING CONTROL PLAN SHEET 2
C13172-PCP.3	31.3	PLANNING CONTROL PLAN SHEET 3

The drawings listed above meet the requirements of the ACTPLA *Guidelines for the Preparation of Estate Development Plans*, May 2009.

1.1 Background

The Molonglo Valley was identified in the Canberra Spatial Plan (ACTPLA 2004) as potential for greenfield area for future development. The Molonglo Valley Structure Plan was endorsed in May 2010 and establishes the overarching planning framework for the Molonglo Valley and sets out the principles and policies that apply to Molonglo Valley.

A number of key planning documents other than general planning legislation have been produced:

The Molonglo Valley Stage 2 Planning and Design Framework (April 2012); and

Molonglo Valley Stage 2 Draft Planning and Design Framework, important Planning Requirements for First Land Release Area (June 2011).

Denman Prospect 1A forms the first stage of development within this new suburb. A Master Plan has been prepared where the future stages were identified.

1.2 Site Characteristics

1.2.1 Location

Denman Prospect 1A is bounded by John Gorton Drive to the east, the East West Arterial to the north, Cravens Creek to the west and North Denman Prospect Stage 1 to the south.

The site is strategically positioned within 11km of Canberra CBD and 10km from Woden.

1.2.2 General Landform, Views and Drainage

Characterised by undulating topography, falling generally southerly from a distinctive high point in its northern portion just outside the Stage 1A boundary. The majority of the site falls to the south from this point, with average grade of 13% and a small section falling to the east. Topography to the north of this high point, within Stage 1B, falls generally northerly towards the Molonglo River Corridor.

Significant views are afforded from this high point. To the north east is Black Mountain, Civic and the National Arboretum.

This undulating form provides much opportunity for interesting and desirable WSUD principles to be engaged within the treatment of stormwater flow towards the Molonglo River.

These features harmonise to create a landscape which provides opportunity to deliver a highly desirable, visually diverse landscaped residential community, a leading example of contemporary, yet unique urban and landscape planning.

1.2.3 Existing Vegetation and Habitat

The existing landscape vegetation predominantly consists of regenerating pine plantation and small areas of open grass land with remnant native woodland dotted over the undulating landform. There are several regulated trees of medium to high quality trees south of the site, outside of the development area.

There is a minor impact on a small area of Box-Gum Woodland in the south west corner of Section AD. Where 3 medium quality regulated trees and 14 no-regulated poor quality trees are to be removed.

The LDA has received a decision under Section 211 of the Planning and Development Act (2007) to waive the requirement for an EIS for the urban development area of Denman Prospect. This EIS exemption is based on a range of assessments already completed and considered as part of the planning for urban development in Molonglo Valley.

The ACT government has also undertaken a Strategic Assessment over the Molonglo Valley to assess matters of National Environmental Significance (NES) impacted on by the proposed future development. A Plan for the protection of Matters of National Environmental Significance (the NES Plan) has been agreed with the Commonwealth accordingly. The NES was taken into consideration during the preparation of the EDP and as such development will be entirely consistent with the provisions of the Plan.

1.3 Indigenous and European Heritage

A detailed heritage assessment (BIOSIS 2010) identified an Aboriginal heritage item MV 18, grinding grooves, this artefact will be retained within a local park of minimum area 5000m^2 . This area is not within the boundary of this EDP.

1.4 Planning Context

This EDP has been prepared to respond to the provisions of the Territory Plan; The Molonglo and North Weston Structure Plan, The Planning and Design Framework and Import Planning Requirements, and ACT Government "Affordable Housing Action Plan – 2007".

The EDP addresses the requirements and components detailed below:

- Estate Development Code October 2013;
- Land-use plans consistent with the Territory Plan;
- Identification of the mandatory Planning Requirements;
- Detailed subdivision design, and where appropriate, development controls;
- A block compliance Plan in accordance with **Appendix A** of the Estate Development Code;
- A tree survey and assessment report;
- A landscape master plan plus a tree retention plan and a tree management report detailing any proposed activity for all trees proposed for retention, pruning or removal; and
- Master Plans for sewer, water and stormwater systems including details of sustainable urban stormwater initiatives, road hierarchy plan, drainage plan, longitudinal sections and pathways.

The land is defined as 'Residential and Community'. An existing section of Coppins Crossing Road traverses the eastern portion of the site. This road will be closed. As part of the John Gordon Drive construction two intersections, and associated stub roads, have been built to access the site. An intersection is also been provided under a Capital works project of Uriarra Road.

The EDP has been prepared to satisfy the requirements of the *Estate Development Code*, October 2013. A Table addressing each rule and criteria of this Code is included in **Appendix A**.

2. Denman Prospect Stage 1A Planning Principles

2.1 Planning Principles

The following planning principles were adopted from the '*Molonglo Stage 2 Planning & Design Framework/ Important Planning Requirements'* and informed this development proposal:

Planning Principles	Development Proposal
A place that values its significant environmental and landscape attributes.	The development has been designed to take full advantage of the beneficial outcomes offered by topographic conditions and landscape attributes, and pays particular respect to Indigenous and European cultural heritage.
A place that connects people to their neighbourhood, local services, their natural environment and their city.	The road network is simple and legible reinforcing neighbourhood connections and ease of access. Bus stops have been located to encourage circulation and connectivity. Movement patterns are created along accessible increased width verges which reinforce visual and actual linkages to open space and the natural environment.
A place that nurtures its communities to enhance social wellbeing, celebrate diversity and provide a sense of belonging.	Streetscapes have been designed with consideration of nearby development with the introduction of larger tree planting groups. Open space is to be designed to introduce a sense of place and belonging through careful design of human scaled spaces and specification of selected tree species. This design concept is reinforced throughout the open space networks surrounding the Estate.
A place that has successful local economy, contributing to a resilient regional economy.	Stage 1A does not have any commercial areas, however, Stage 1B does. A successful suburban environment creates economic benefits through added value to the urban fabric of society and the future benefits its residents can offer society as a result of living comfortably within a well planned and friendly community. The inclusion of the school will also create employment within the local area. These principles make up the core of the planning and design of Stage 1A.
A place that has a distinct local identity, which will become a part of the Molonglo Valley and Canberra story.	The subdivision design provides housing diversity in consideration of current and future projected housing requirements for a wide and diverse community demographic. Higher density development will be provided in future stages. The Estate will have a distinct local identity reinforced by establishing a village typology for buildings and connectivity with landscape and the natural environment with future connections to Molonglo

	River, Molonglo Commercial Centre and Mt Stromlo, all being of regional significance.
A place that is adaptive, responsive to risk and will continue to incorporate a sustainable approach to development.	The development has been designed to respond to the site topography, meeting or exceeding the environmental outcomes expected, whilst meeting the needs and desires of its residents now and well into the 21st Century. Block designs have been aspected and sized to ensure solar aspect requirements are met, and that a wide range of housing typologies can be designed and built to maximise the benefits offered by the unique benefits of the site. Architects and designers will benefit from a clear understanding of what form and scale of development is achievable on any particular block.

2.2 Important Planning Requirements Consolidated Map

The figure bellow is the Consolidated IPRs Map taken from the Molonglo Valley stage 2 draft planning and design framework, Import planning requirements for first land release area, June 2011.

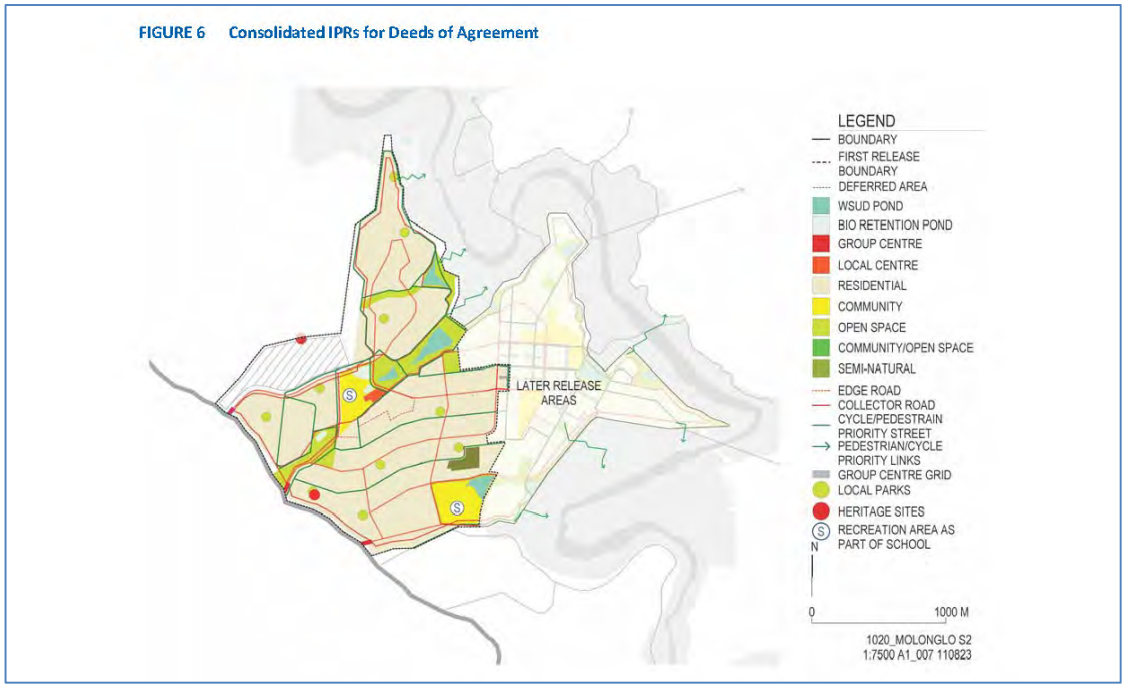


Figure 1 - IPR Consolidated Map

Figure 2 bellow shows an overlay of the above figure over the proposed layout for Denman Prospect Stage 1A (and indicative layout for 1B):

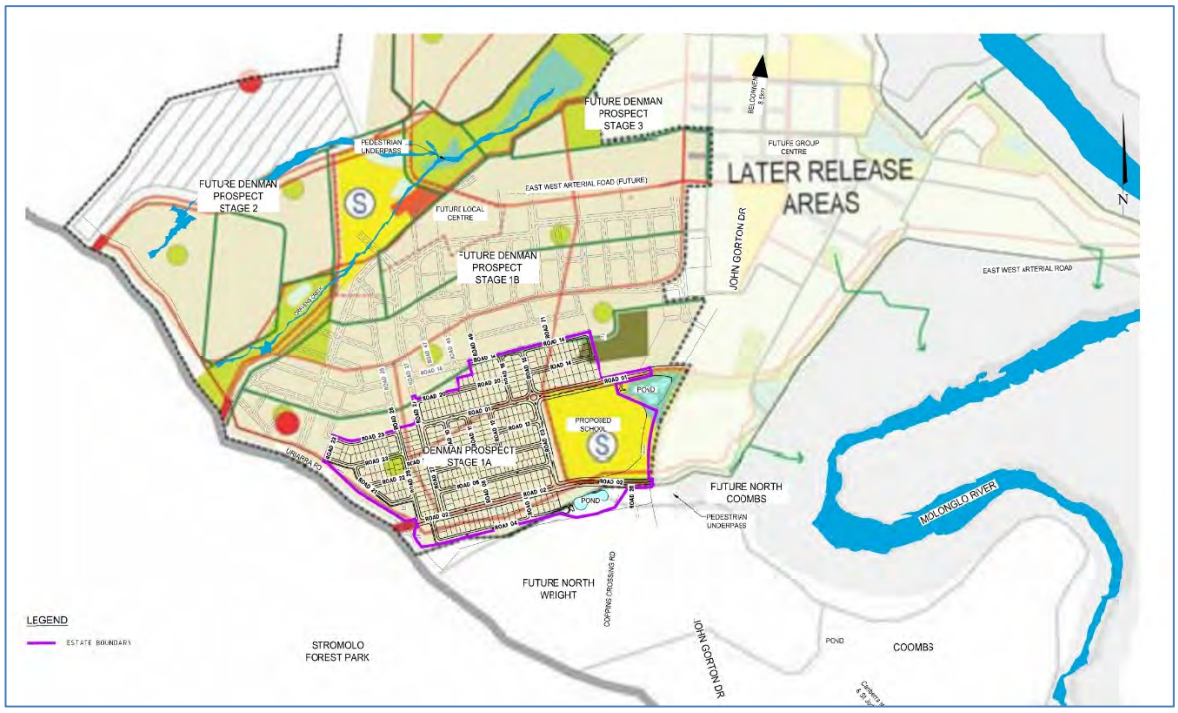


Figure 2 - IPR Consolidated Map overlay Denman Prospect Stage 1A

The above figure demonstrates a 'good fit' with regards to the proposed Denman Prospect Stage 1A overlay over the IPR Consolidated Map. All the key elements alignment with the IPR map.

» The WSUD Pond proposed in the north east of the school site is as per the IPR Map. An additional pond is required due to the topography along the southern portion of the Estate. In stage 1B the ponds are along the Cravens Creek Corridor.

» Future (i.e. stage 1B) local centre generally as per the IPR Map. Moved slightly east to avoid the creek corridor.

» Residential zoning as per IPR Map.

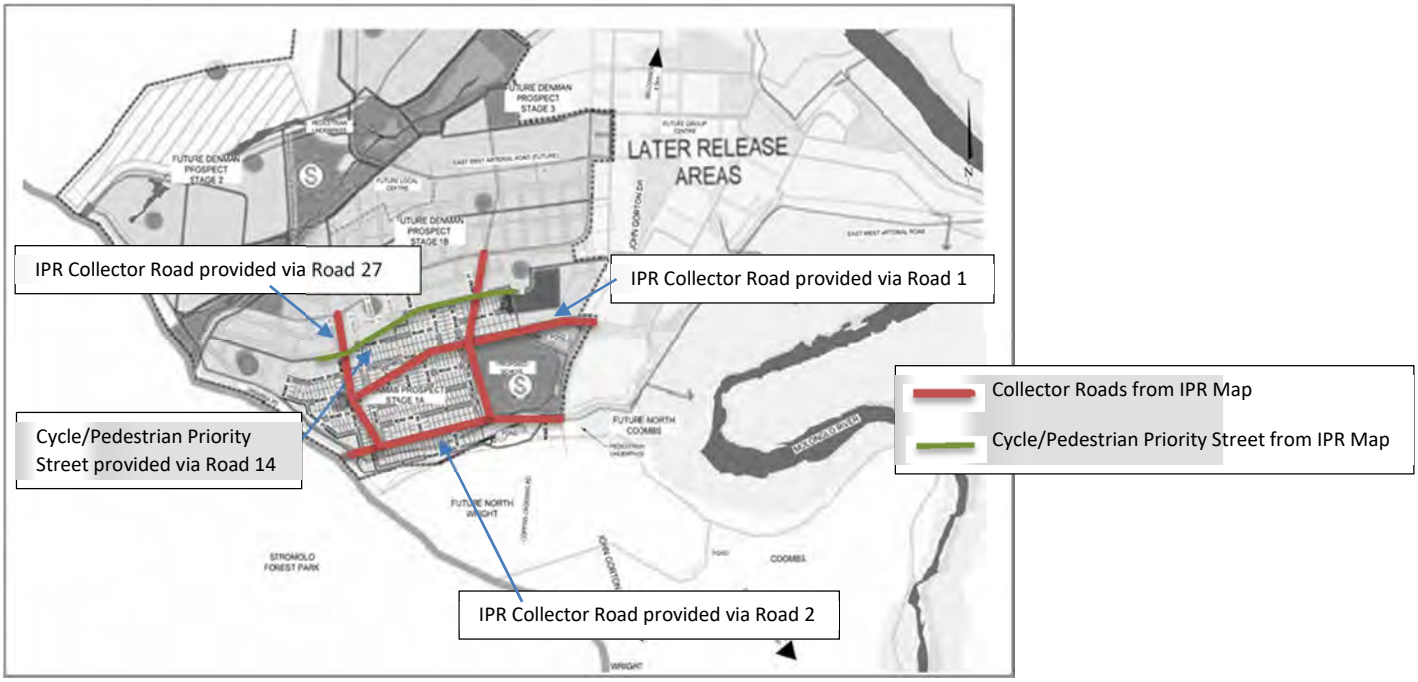
» Community zoning as per IPR Map. Western boundary of the proposed school site (Special Area 2), moved west slightly in recognition of the steeper portions of the site adjacent to John Gordon Drive.

» Open Space, intent as per the IPR Map. Primarily located within future stage 1B.

» Semi-Natural, intent as per the IPR Map, located in future stage 1B open space.

» Edge Road, Edge roads provided.

» Collector Roads, Road 1, 2 and 27 align with the IPR Map collector roads as demonstrated in the figure below. The one exception is the eastern north south road which has not been proposed. This road traverses over the high point of the Estate and due to the very steep grades and TAMS design standards (maximum road grades and design speeds) it is not practical to provide a road directly 'over the hill'.



» Cycle/Pedestrian priority Street – Road 14 aligns well with the IPR Map.

» Local Parks and Heritage sites to be provided in future stages (i.e. Stage 1B).

» School sites align with the IPR Map.

Refer to Appendix J – Compliance Checklist for a statement against the Molonglo Valley Stage 2: Draft Planning and Design Framework – Important Planning Requirements and Special Planning Requirements from the Deed of Agreement for Denman Prospect Estate 1.

3. Denman Prospect Stage 1A Planning Requirements

The following planning principles were adopted from the 'Molonglo Stage 2 Planning & Design Framework/ Important Planning Requirements' and informed this development proposal:

3.1 Dwelling Numbers and Housing Mix

The following section demonstrates how the development proposal for Denman Prospect Stage 1A meets the requirements of the *Planning and Design Framework* by providing a variety of different housing and block types.

3.1.1 Dwelling Yield

Table 1 Denman Prospect Stage 1A Block Yield

BLOCK TYPE	BLOCK WIDTH	BLOCK DEPTH	DESCRIPTION	TOTAL
SR1 <250 m^2	14.5m	17m	Custom Compact	20
SR2 251-350 m2	15.0m	25m	Custom mid-size	4
SR3 351-450 m^2	13.2m	30m	Villa	23
SR4 451-650 m^2	18m	30m	Premium Villa	321
SR5 >651 m^2	20+m	35+m	Large Family Home	33
			STAGE 1 TOTAL	**401**

3.1.2 Housing Mix

The proposed subdivision results in the provision of a total of 390 residential blocks. The housing mix is reflected within varying block areas and dimensions, with block sizes ranging from 247 m^2 to 809 m^2. This broad range of block sizes will provide options to cater to a wide range of markets, providing affordability and choice, and promoting innovation and visual texture in the housing design mix.

Affordable housing has been provided within Denman Prospect Stage 1A with at least 5% of dwellings meeting the affordable housing obligations set out in the "Affordable Housing Action Plan 2007". There are no multi-unit developments in Stage 1A, however, Stage 1B will incorporate a number of multi-unit dwelling sites which see affordable housing increase to 20.5% of the housing mix (Calculations are from the Concept Master Plan).

Consideration has been given to ensure dwellings can be sited to enable their northern facades to receive adequate sunshine in winter. A number of specific housing planning controls are proposed within the Housing Development Guide to promote high quality housing, improved resident amenity and high quality built form. The controls will ensure solar access and private open space comply with the Territory Plan requirements.

Small blocks are generally orientated north south to enable compliance with the Block Compliance Tables.

One of the key objectives is to offer a range of housing types to encourage affordability and a mix of demographics. The proposal therefore provides a variety of specific housing typologies and corresponding specific block sizes to cater for such a mix throughout the Estate. The mix of housing types has been produced and distributed to create attractive and varied streetscapes. The outcome of the built form selection will introduce a strong sense of cohesiveness and contribute to community character and identity by introducing a 'Salt and Pepper" of housing typologies.

The dwelling mix consists of dwelling types:

- Single/two storey detached homes on large blocks >500 m^2
- Single/two storey detached homes on mid size blocks from 251-500 m^2
- Attached/duplex homes set on compact blocks up to 250 m^2

3.2 Commercial Site – Special Area 2

A site of 9.1Ha of useable open space has been provided for a school and associated recreational areas to the satisfaction of the Education and Training Directorate.

The proposed site includes allowance for the following:

I a school and associated recreational areas to the satisfaction of the Education and Training Directorate;

2 a community Hall, child care centre, church and associated facilities;

3 open space landscaping; and

4 car parking and internal roads.

The Development Intentions Plan 24.1 demonstrates how the school and facilities sit on the site.

3.3 Subdivision

The development proposal for Denman Prospect Stage 1A has been prepared to include all of the following:

» Pathways have been provided within the estate that link to existing or proposed future development;

» All blocks conform to the solar compliance tables;

» Housing diversity has been provided;

» The majority of road orientation allows for distant views out of the site; and

» East west pedestrian movement has been facilitated with the introduction of a wider verge and increased footpath width.

3.4 Roads and Access

The development proposal for Denman Prospect Stage 1A has been prepared to include the following:

» Access to Denman Prospect Stage 1A has been provided from John Gorton Drive in 2 locations and Uriarra Road in one location;

» Edge roads have been used as buffers between residential areas and open space areas; and

» Proposed street trees strengthen and enhance the different road hierarchy.

3.5 Public Transport and Inter-town Public Transport Route

The development proposal for Denman Prospect Stage 1A has been prepared to include the following:

» Bus routes and bus stops have been located to ensure at least 90% of dwellings are within 500m radius.

3.6 Pedestrian / Cycle Network

The development proposal for Denman Prospect Stage 1A has been prepared to include the following:

» Pedestrian permeability of east-west streets with large verges;

» Pedestrian cycling priorities as outlined in the Planning and Design Framework, Important Planning Requirements;

» Pedestrian paths are provided along all streets and both sides of the roads; and

» Multi-purpose paths running along the west and southern boundary of the site. The western path will connect to a future major pedestrian system along Cravens Creek, the southern path will create a link to the Molonglo River Corridor.

3.7 Equestrian Trails

The development proposal for Denman Prospect Stage 1A does not impact on any existing equestrian trails.

3.8 Open Space

The development proposal for Denman Prospect Stage 1A has been prepared to include the following:

- Pedestrian movement along the southern boundary;
- Linear landscape buffer along the western boundary;
- Open space to create entry features into the Estate; and
- 10m wide verges to strengthen the east – west pedestrian movement pattern.

3.9 Suburb Entry Features

Strong distinctive entry features, including signage and a mix of formal and native planting is proposed at all entry features.

3.10 Trees

Remnant Eucalypts have been retained in open space where possible. The Landscape plan recognises and celebrates remaining existing trees.

3.11 Water Sensitive Urban Design

The development proposal for Denman Prospect Stage 1A has been prepared to include the following:

- Water quality control ponds for the catchment in the south west;
- An existing water quality control pond for the catchment in the north east; and
- Permeable kerb on edge roads adjacent open space areas.

3.12 Urban Edge Treatment

The open space areas for Denman Prospect Stage 1A include multi-purpose paths, informal native planting, and creative re-use of existent large boulders within an environmentally supportive and interactive network of spaces and places

3.13 Staging of Development

The first construction stage (Stage 1A1) of Denman Prospect Stage 1A is the eastern section which is accessed from John Gorton Drive and Uriarra Road. The second stage (Stage 1A2) is to follow Stage 1A1, however, there is no significant impediment to Stage 1A1 and Stage 1A2 proceeding concurrently.

Stage 1A1 will be split into two sub stages, 1A1-A and 1A1-B. 1A1-B will include the proposed pond only to facilitate separate handover of the pond to TAMS.

3.14 Infrastructure/Services

Trunk infrastructure (utilities, stormwater, sewerage and water) along John Gorton Drive and Uriarra Road are under construction, which is nearing completion, to allow connections for Denman Prospect Stage 1A.

4. Specific Planning Objectives and Principles

A set of specific planning objectives and principles were developed as part of the EDP planning process. Incorporating best practice design and planning principles of "Liveability", "Sustainability" and "active living" and embracing the overarching planning objectives, principles, and policies identified in the Territory Plan, The EDP conforms with all requirements of the *Estate Development Code.*

4.1 Objectives

The Estate design achieves the following objectives:

- Maximises lifestyle opportunities;
- Maximise residents' physical mobility and exercise;
- Provides a subdivision that is attractive, safe, convenient, easily walkable and accessible to public transport;
- Creates a responsive and memorable planned place;
- Creates a community heart;
- Creates a connective network of green streets;
- Provides a distinctive urban character precinct with a diversity of buildings and built form;
- Provides a suburban character precinct with efficiency in land use and block layout;
- Maximises a distinctive *landscape* setting that relates to the surrounding setting; and
- Offers a range of housing types to encourage a wide demographic mix of residents.

4.2 Principles

This section summarises key planning considerations used as a basis for developing the EDP for Denman Prospect Stage 1A.

- The introduction of a collector road / bus route through Denman Prospect Stage 1;
- Providing roads that terminate with open space vista's and outlooks
- Achieving the optimum number of dwellings on site consistent with identified constraints;
- Enhance verge width to emphasise entry into the estate;
- Provision of entry feature for wayfinding and landmarking;
- Creation of a connective pedestrian network to serve the needs of the local community and surrounding neighbourhoods, and in particular the east – west movement pattern;
- Cyclist, vehicular and pedestrian networks that respond to the estate topography;
- Ensure bushfire protection measures are designed and integrated into the estate;
- Satisfy solar access requirements of the Estate Development Code; and
- Provide access to the proposed school site from a 25m wide road corridor.

5. Site Planning Potentials and Constraints

5.1 Potentials

» Develop the EDP within the framework of The Molonglo Valley Stage 2 Planning and Design Framework (April 2012) and Important Planning Requirements (June 2011);

» Capitalise on views to natural features within and beyond the site to Canberra landmarks; and

» Ensure road hierarchy and open space pedestrian linkages interface with the broader planning for Denman Prospect and Molonglo Community Centre.

5.2 Constraints

A number of constraints have been addressed in the development of the EDP, these are:

» Steep terrain with slopes generally falling to the south;

» Upstream catchments from Stromlo;

» Stromlo Observatory (light spill); and

» Existing high value trees.

5.3 Planning Assumptions

To provide a simple, legible and permeable road and pedestrian network which responds to the identified design generators. Design generators include natural drainage patterns, aspect and prospect. The block and section layout ensures the maximum number of blocks will obtain optimal solar access.

Open space pedestrian linkages meet accessibility requirements within AS 1428.1 wherever topography and good design allow.

A Master Plan for Denman Prospect Stage 1 has been prepared to ensure the first EDP Stage 1A would relate to the future Stage 1B.

6. Planning Proposal

The EDP responds to the requirements expressed in the Territory Plan – Estate Development Code (2013) and the Molonglo Valley Stage 2 Planning and Design Framework , including important planning requirements.

6.1 Urban Design Objectives

The urban design responds to the objectives outlined below:

» Maximise lifestyle opportunities;

» Develop an integrated, diverse community with a strong identity and sense of place;

» Provide a high level of permeability and connectivity with adjoining estates;

» Provide ease of pedestrian movement from within Denman Prospect Stage 1A to Denman Prospect Stage 1B and beyond;

» Maximise Investment opportunity through high quality design and delivery;

» Provide high quality, affordable, commercially viable, ecologically sustainable development;

» Ensure flexibility to meet the changing needs of the market through a diversity of housing designs;

» Provide a variety of living options and affordable housing;

» Design for efficiency of land use and increased amenity;

» Maximise the opportunity for visual and physical linkages throughout the site;

» Promote pedestrian accessibility and permeability while respecting the need to create safe and secure living environments;

» Optimise the opportunities for active and passive recreation within the precinct;

» Provide for a range of dwelling designs which address contemporary lifestyle, economic constraints and current market styles; and

» Create a unique landscape setting providing an attractive public realm and opportunities for communal/social participation and reinforcement by future residents.

6.1.1 Urban Design Principles

General

» Planning and development of Denman Prospect Stage 1A should incorporate environmental, social, cultural and economic sustainability principles;

» Detailed planning is to take advantage of the natural, cultural and heritage characteristics of the area to support and strengthen the community's identity; and

» Deliver high quality, commercially viable, ecologically sustainable development.

Vehicular and Pedestrian Networks

» Provide a legible and connected road layout and pedestrian / cycle network;

» The local neighbourhood is based on easy walkable distances, and focus on an activity node such as a neighbourhood park to encourage residents to have an 'active lifestyle' by being physically active;

» The road hierarchy should be legible, connected to the wider network, provide good and safe access for all users and support high levels of public transport usage;

» Roads include adequate on street parking, wide verges, street trees and pedestrian friendly walkways; and

» Provide quiet leafy streets.

6.2 Compliance with Planning Codes

The Territory Plan Estate Development Code guided the planning and design of the Master Plan and EDP, including neighbourhood planning - street networks, block layout, and open space, physical infrastructure - construction and design of streets and on street parking, utilities, waste management, as well as storm water and integrated catchments management.

6.2.1 Estate Development Code – 4 October Issue

The proposed estate layout was assessed against the requirements of the Estate Development Code. It was identified that the proposed layout is compliant with the new code.

6.2.2 Neighbourhood Design

The proposal meets the general intent and performance criteria of the Territory Plan in that the Estate is designed to provide a safe, convenient, accessible and attractive neighbourhood to meet the diverse and changing needs of the community. *Refer also to the Section 4.1,* which outlines the objectives of the design

6.2.3 Street Networks

The proposal meets the general intent and performance criteria of the *Estate Development Code.* The street network is designed to provide a clear and legible layout that is accessible, safe and convenient for all users. *Refer also to Section 4.1.*

6.2.4 Pedestrian and Cyclist Facilities

The proposal meets the general intent and performance criteria of the *Estate Development Code*. The street network and associated paths encourage walking, cycling and physical activity and that the network is safe and accessible for cyclists and pedestrians.

Pedestrian Pathways are to be provided to both sides of the street verge in association with paths on the extremities of the estate linking to open spaces and other suburbs.

6.2.5 Public Transport

The proposal meets the general intent of the rules and criteria outlined in the *Estate Development Code* and The Molonglo Valley Stage 2 Draft Planning and Design Framework.

6.2.6 Public Open Space

The proposal meets the Rules and Criteria within the *Estate Development Code*. The design of the Denman Prospect Stage 1A Estate provides for attractive and accessible public open space that considers community requirements, incorporating landscaping and place-making elements that contribute to the character and identity of the Estate and to other surrounding suburbs to the south.

Refer also to the Landscape Master Plan (LMP.1-4, 13.1-13.4)

6.2.7 Block Layout and Building Envelope Plans

The EDP drawing meets the Rules and Criteria of the *Estate Development Code*. The layout of the sections and blocks in Denman Prospect Stage 1A correlates to the road layout. The layout of blocks provides potential for internal and external solar access for housing, maximises street address, increases housing mix and provides diversity in response to site features. Dwellings allocated as meeting the "Affordable Housing Plan" objectives have been strategically located close to open parkland and are accessible to other nearby community amenities. The road layout has reduced the incidence of high side and low side development issues.

The layout of sections and blocks allows for a wide range of block size, block layout and therefore, housing mix in response to market analysis and projected future housing needs. Variation in block size and typology and resultant mix of housing will encourage attractive and varied streetscapes.

Where possible, and or desirable, houses address open space areas, thereby increasing passive surveillance opportunities and interface with the public realm.

Where appropriate, blocks have been orientated to take advantage of external views and to capture the views to open space areas within the site.

Building Envelope Plans have been prepared for any blocks that do not comply with **Appendix A** – Block Compliance Table, but do comply with the Test Block requirements.

6.2.8 Utilities, Waste Management and Sediment and Erosion Control

For information relating to provision of utilities, refer to Section 16 of this document.

For information relating to Waste Management arrangements, refer to Section 24 of this document.

For information relating to Sediment and Erosion control, refer to Drawing C13172-EMCP1-29.1 TO 29.3.

6.2.9 Traffic Generation Numbers

Trip generation rates in Table 1A of the Estate Development Code have been adopted to calculate traffic generation for the development of Denman Prospect.

7. Traffic Analysis and Road Hierarchy

As part of an overall assessment of the development of Denman Prospect Stage 1A, an assessment of internal traffic generation and road hierarchy has been undertaken by Brown Consulting (refer to drawings C13172-RHP).

John Gorton Drive extension from Coombs and Wright has recently been designed by Brown Consulting and GHD and is currently under construction. These works provide stub roads into the Estate.

7.1 Road Hierarchy

The road hierarchy within the proposed Estate consists of minor collector roads connecting to the existing arterial roads (John Gorton Drive and Uriarra Road) and Access Streets. The internal road network and expected traffic volumes are shown on drawings C13172-RHP-11.1.

A description of the features for each road classification is tabulated on drawing C13172-RHP-11.2.

Some of the streets hierarchical status have been upgraded from the level complying with the relevant table in the Estate Development Code to the next highest level in the hierarchy of roads to facilitate a clear and logical road layout.

All proposed bus routes are minor collector roads with 8m wide carriageways plus indented parking bays for on street parking.

7.2 Traffic Generation

The following trip rates were used for this assessment:

- Peak hour traffic generation rate = **0.8 trips per dwelling** (0.6 trips for Multi-unit dwellings)
- Daily traffic generation = **8 trips per dwelling** (6 trips for Multi-unit dwellings)

7.3 Traffic Distribution

The majority of traffic in Denman Prospect Stage 1A is directed towards John Gorton Drive which provides easy access to the proposed Molonglo Commercial Centre, Belconnen Town Centre, or Civic. Based on the estate layout, key external attractors for motorists are limited to the proposed school which has minor collector roads around the perimeter of the school which link to John Gorton Drive i.e. external school traffic does not need to enter the estate other than the minor collectors around the school. The internal road network provides ready access to each road and therefore to John Gorton Drive from anywhere within the estate.

7.4 Key Internal Intersections

The majority of internal intersections in Denman Prospect Stage 1A are on Local Access streets for which intersection performance is not a problem due to low traffic volumes. The key internal intersections within Denman Prospect Stage 1A are on the minor collectors. The traffic volumes at these intersections have been modelled in SIDRA and will operate at a satisfactory Level of Service A. Refer to SIDRA analysis in **Appendix B**.

Four way intersections have been avoided as much as practical in the layout for the Estate. One four way intersections is proposed and this will all be controlled by a roundabout to control traffic flows.

Pavement thresholds are proposed on several intersections to delineate road hierarchy (collector roads) and priority movements at these intersections, refer Road Hierarchy Plan C13172-RHP1 for details.

8. Roads

8.1 Major Collector Roads

There are no proposed major collector roads within Denman Prospect Stage 1A.

8.2 Minor Collector Roads

Road 1 is a minor collector road which conveys traffic from Denman Prospect onto John Gorton Drive. Road 1 will be the main ingress and egress from the Estate. The first section of this road has a 10m wide pavement and 8.85m-11.5m verges. The other portion of Road 1 has a 8m wide pavement plus indented parking bays with 8.35m verges. Driveway access is permitted onto this road. This road forms part of the bus route through Denman Prospect. 2.5m wide shared paths are proposed on both verges of this road except for the first section along the school frontage where a 3.0m wide shared path is proposed.

Roads 2, 3 and 27 are minor collector roads with either 10m wide pavements or 8m wide pavements plus indented parking bays and 8.35m wide verges. The wider pavement and verges will signify to motorists the role of these roads in the road hierarchy compared to all other Access Street connections of narrower pavement and verge. A 2.5m wide shared path is proposed on both sides of the roads.

8.3 Access Streets

The standard reserve for Access Street A's within Denman Prospect Stage 1A is 19.50m which is formed from 6.25m wide verges and a 7.0m wide road pavement. Access street A's have 1.5m wide paths on both sides. Access streets that form an edge road have verge widths of 6.25m and 3.25m.

The standard reserve for Access Street B's within Denman Prospect Stage 1A is 21.60m which is formed from a 6.25m and a 7.85m wide verge and a 7.5m wide road pavement. Access street B's have 1.5m wide paths on one side and a 2.0m wide path on the other. The wider verge is necessary to accommodate the wider path and the clearances required to the 2.0m wide path.

Road 14 includes a 10m wide verge on the northern side to accommodate a trunk pedestrian and cycle priority east to west path proposed across the whole Denman Prospect 1 Estate. This path will link the future open space area (within stage 1B) to Cravens Creek in the west. This path will be at 5% or less and provide a link to a future bus stop on road 27 (stage 1B).

8.4 Parking

Visitor parking is sufficiently provided along the kerbside edge of all Access Street roads. There are no proposed blocks with a frontage of less than 12.5m. Indented parking bays have been provided along the bus routes.

8.5 Street Lighting

ActewAGL will undertake the underground electricity reticulation and street lighting design in accordance with the current Design Standards for Urban Infrastructure Part 12. The Estate is within 5km of the Mt Stromlo Observatory and as such will have streetlights with shields on them along with other additional design standards required due to the proximity of the Estate to the Observatory. Consideration has been given to light pollution including the orientation of roads, types of street lighting and street tree plantings.

8.6 Traffic Noise

Denman Prospect Stage 1A is bounded by John Gorton Road to the east, open space to the south and Uriarra Road to the west. John Gorton Drive will be constructed as capital works while Uriarra Road is existing.

In undertaking the noise assessment the relevant road traffic noise criteria is defined in ACTPLA's Noise Management Guidelines (Draft), March 1996. The guidelines stipulate that for new developments, the maximum noise levels from traffic at a point one metre in front of the façade of the nearest affected residential dwelling should be 63 dB(A)L10 (18 hour). Within a recreational courtyard of private open space not facing the road source, the noise levels should be 58 dB (A) L10 (18 hour).

Due to the distance (and traffic volumes) that the blocks are set back from John Gorton Drive and Uriarra Road there are no issues with regards to traffic noise.

A noise assessment report has been prepared by UNSW at ADFA. A copy of this report has been included in **Appendix F**.

The noise assessment looked at two typical cross sections for Uriarra Road as shown in the figures bellow.

Figure 3

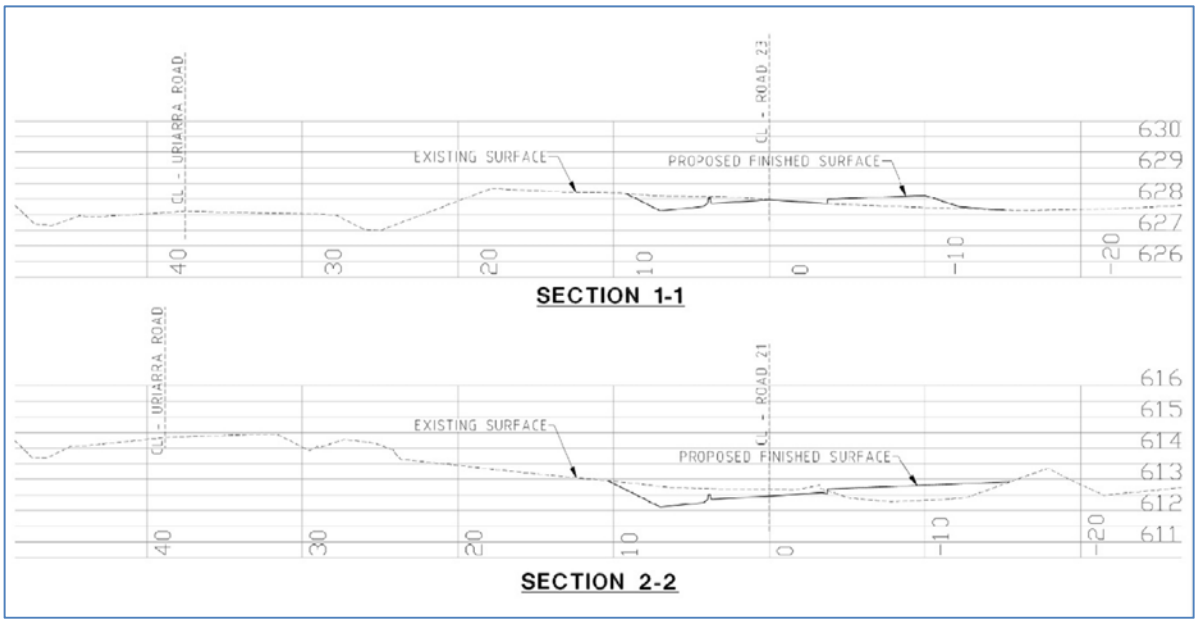


Figure 4

9. Cycle and Pedestrian Systems

9.1 Trunk Paths

A 3.0m wide trunk path is proposed on the southern side of Road 1 along the frontage of the school site. This path provides a linkage to John Gorton Drive, the proposed Molonglo Commercial Centre, and to the Molonglo River further east.

All minor collector roads include 2.5m wide paths on both sides of the road.

Road 14 is intended to be a pedestrian and cyclist priority street creating an east to west link across Denman Prospect. This path will continue through stage 1B to Cravens Creek in the west and John Gorton Drive to the east. The gradients for this path will be 5 percent or less and link to a proposed bus stop on road 27 (Stage 1B) and the open space in stage 1B.

9.2 Intermediate Paths

A 2.0m wide shared path is proposed along one side of all Access Street B's.

A multi-use path will be provided in the open space along the southern and western perimeter of the Estate. This path will provide links to John Gorton Drive, the Molonglo River, the proposed school sites, Uriarra Road and Stromlo Forest Park. The gradients for this path will be 5 percent or less.

9.3 Minor Paths

Minor paths are provided on both verges of all Access Street A's and on one side of all Access Street B's. These paths are all 1.5m wide and are located 1.2m offset from the block boundary in accordance with the typical cross-sections for Denman Prospect Stage 1A.

A path network is provided across the entire estate linking all roads directly with open space areas, nature reserves, school(s), and adjacent path networks.

10. Land Contamination

Numerous site contamination reports have been prepared by Aecom for the Molonglo Valley Stage 2 area. These reports cover the larger area of Molonglo Valley of which Denman Prospect Stage 1A is the first proposed Estate.

The Environmental Protection Authority (EPA) have reviewed and endorsed the various reports.

List of reports prepared for the Molonglo Valley:

Document	**Status**
Phase 1 Environmental Site Assessment Stage 2 Molonglo (west) ACT (Part 1)	Phase 1
Phase 1 Environmental Site Assessment Stage 2 Molonglo (west) ACT (Part 2)	Phase 1
Phase 1 Environmental Site Assessment Stage 2 Molonglo (west) ACT	Phase 1
Sampling and Analysis Quality Plan Molonglo Stage 2	SAQP
Phase 2 Environmental site Assessment Molonglo Stage 2 MV2-C1	**Phase 2**
Phase 2 Environmental site Assessment Molonglo Stage 2 MV2-C2	Phase 2
Phase 2 Environmental site Assessment Molonglo Stage 2 MV2-C4	Phase 2
Phase 2 Environmental site Assessment Molonglo Stage 2 MV2-C4-A3	Phase 2
Site Audit Report, MV2-C4-A1 and MV2-C4-A2 Molonglo Stage 2 ACT	Auditors Report
Site Audit Report, MV2-C4 excluding A1 A2 A3 Molonglo Stage 2 ACT	Auditors Report
Site Audit Report MV2-C1-A2 and MV2-C2 Molonglo Stage 2 ACT	Auditors Report
Site Audit Report MV2-C4-A3, Molonglo Stage 2 ACT	Auditors Report
Endorsement of Phase 1 Environmental Site Assessment Report - Molonglo Stage 2 Redevelopment Area	EPA Endorsement
Endorsement of Site Audit Statement and Report MV2-C4-A1 and MV2-C4-A2, Molonglo Stage 2	EPA Endorsement
Endorsement of Site Audit Statement and Report Molonglo Valley Stage 2 Part MV2 Audit Area	EPA Endorsement
Endorsement of Site Audit Statement and Report MV2-C1-A2 and MV2-C2 - Molonglo Stage 2	**EPA Endorsement**
Interim Advice No. 1 – Molonglo Stage 2, ACT Contaminated Land Management Strategy March 2012	EPA Advice
Interim Advice No. 2 – Molonglo Stage 2, ACT MV2-C4 House Block, Review of Remediation Works Plan	EPA Advice

The *Phase 2 Environmental Site Assessment Molonglo Stage 2, MV2-C1* prepared by AECOM Australia Pty Ltd in November 2012 is the most relevant to Denman Prospect Stage 1A i.e. covers the area of Denman Prospect Stage 1A. This report concludes that the site is suitable for residential development.

11. Public Transport

The proposed local bus network is shown on the Public Transport Network Systems plan, drawing C13172-PTNM.1, Plan 20.1. The proposed local bus capable route through Denman Prospect Stage 1, including indicative bus stop locations has been nominated, demonstrating that 90% of all dwellings in the estate are less than 500m from a proposed bus stop. A copy of the proposed bus route through Denman Prospect Stage 1 was provided to Action during the development of the Master Plan for the Estate. Action confirmed the proposed route was acceptable as long as it is designed to the appropriate standards.

In addition to the proposed bus route through Denman Prospect Stage 1 the Estate will be serviced by a proposed frequent network along John Gordon Drive with a bus stop proposed near the entry to the Estate on John Gordon Drive.

The roads around the school site have been designed to be trafficable by a bus. Indented parking bays have been provided on the bus routes.

12. Agency Liaison and Consultation

During the planning process and preliminary engineering design, there has been liaison and consultation with agency representatives from Actew Water, ActewAGL, ESDD, TAMS, ETD and ACTION. Other Agencies and Authorities will be liaised with during the EDP approval process.

13. Stormwater Concept Plan

13.1 Existing Stormwater Infrastructure

The topography of the Estate is such that there are two main stormwater catchments. The land generally falls to the south and east with one of the catchments discharging to an existing water quality control pond and the other a new floodway under John Gordon Drive.

The existing water quality control pond in the north eastern corner of the Estate is adjacent to John Gorton Drive. The northern portion of the Estate will drain towards this existing pond.

The southern portion of the Estate will drain to the south eastern corner of the Estate where there is an existing (under construction) floodway under John Gorton Drive.

13.2 Proposed Stormwater Infrastructure

A stormwater master plan has been prepared for Denman Prospect Stage 1A. The stormwater master plan illustrates the schematic stormwater pipe layout for the development, catchment areas, 5 and 100 year ARI flows, velocity depth safety criteria and 100 year ARI flood extents.

The detailed stormwater design will be in accordance with the TAMS Design Standards. Flows up to and including the 5 year ARI event are generally to be piped whilst the major system comprising roads conveys the 100 year ARI flows.

Major features of the proposed stormwater network for the Denman Prospect Stage 1A estate include:

» Two water quality control ponds with detention capacity that will reduce peak developed flows prior to discharge downstream. Both of these ponds are off-line only treating the Denman Prospect urban runoff before discharge to the creek. One of these ponds is existing (under construction as part of the Capital works on John Gorton Drive).

» Grassed swales along Uriarra Road to convey flows from existing culverts under Uriarra Road to the south and around the Estate. These culverts drain a small upstream catchment in the Stromlo Forest Park.

» Realignment of an existing flood way to facilitate the construction of the proposed water quality control pond.

» Piped flow for the 100 year ARI along the eastern end of Road 1.

13.3 Overland Flow Management

When stormwater flows exceed the capacity of the piped system (including an allowance for blockages), stormwater runoff will travel overland along the road network into swales and ponds.

Overland flows have been designed to meet the following criteria:

» Prevent flow up to the 100 year ARI from entering leased blocks.

» In road reserves to ensure velocity depth safety criteria is less than $0.4m^2/s$.

» In road reserves to ensure flow does not exceed a depth of 50mm above top of kerb.

» To ensure velocity of flows in swales is less than 2m/s to prevent scour.

» To ensure a minimum freeboard of 300mm to leased blocks.

13.4 Water Sensitive Urban Design

Water quality ponds provide the main WSUD treatment for Denman Prospect Stage 1A Estate with ponds provided as follows:

Northern catchment. This catchment will drain to the existing pond which will provide stormwater quantity and quality treatment for this Denman Prospect catchment only. This pond is an off-line pond.

South eastern catchment. This catchment will drain south to Pond 1 which will provide stormwater quantity and quality treatment for this Denman Prospect catchment only. This pond is an off-line pond separate to the adjacent floodway allowing the upstream flows to bypass the pond. The pond will include a wetland and be approximately 3,600 square meters (at normal operating water level).

Other treatment train WSUD measures within Denman Prospect Stage 1A include the following:

» Grassed swale along the eastern side of Uriarra Road.

» Edge roads with one way crossfall and permeable kerb discharging overland flows to grassed open space areas.

There has been a lack of support for tree pits and rain gardens by TAMS on previous projects so none are proposed for this Estate, also a large proportion of the Denman Prospect Stage 1A site is too steep for grassed

swales and tree pits and rain gardens, hence focusing the WSUD measures at the water quality ponds. The proposed ponds in combination with the other measures listed above provide a treatment train that ensures that the suburb meets the requirements of the ACTPLA Waterways Code. These measures provide extended detention and water quality treatment required for the estate. The Waterways Checklist for Pond 1 is provided in **Appendix D**.

40% reduction in potable water usage will be met by requiring installation of rainwater tanks to all blocks exceeding 300m^2. These rainwater tanks will also provide some of the extended detention volume for the estate.

The proposed stormwater pond will have a minor encroachment into North Wright. The pond has therefore been designed as efficiently as possible to limit land take required for the pond. The pond has been located as close of possible to Denman Prospect and as such is 'cut into the hill'. The ideal location (to avoid cutting into the hill) for the pond would be further south on lower, flatter terrain however this has been avoided to maximize the developable area in North Wright.

13.5 Water Quantity and Quality

The proposed Pond and the existing pond will provide all stormwater quality and quantity treatment required for the Denman Prospect Stage 1A estate to meet the objectives of the ACTPLA Waterways Code.

14. Sewer Concept Plan

14.1 Existing Sewer Infrastructure

The existing sewer infrastructure adjacent Denman Prospect Stage 1A includes the following:

» There is an existing trunk sewer along the eastern side of John Gordon Drive.

» There are two existing 225mm sewer connections from John Gordon Drive into Denman Prospect. One at each of the existing stub roads into the Estate.

14.2 Proposed Sewer Infrastructure

All sewer flows from Denman Prospect Stage 1A will discharge to the existing trunk sewer mains in John Gordon Drive. The Sewer Master Plan indicates the extent of catchments. The Master Plans have been prepared in accordance with the requirements of Appendix D of the ACTEW Corporation 'Water Supply and Sewerage Standards.' The detailed design will also be undertaken in accordance with Part 3 of the 'Water Supply and Sewerage Standards.'

The following summarises the key design components of the sewer master plan:

» The northern catchment of Denman Prospect 1A drains to the existing 225mm sewer main in the stub road adjacent to the existing pond.

» The southern catchment will connect to the to the existing 225mm sewer main in the stub road in the south eastern corner of the Estate.

» Inter-allotment sewers have been minimised to reduce the service easements on the blocks where practical to do so however the Estate is relatively steep and back of block sewer mains are required for the majority of the sections. Where back of blocks sewers are proposed, sewer maintenance access routes and easements are provided and shown on the EDP drawings.

» Denman Prospect Stage 1A is fully contained within the Southern Catchment of Molonglo Valley Stage 2 i.e. sewer flows to the south towards Coombs and Wright.

» A connection has been provided to a potential accommodation site in Stromlo Forest Park.

15. Water Concept Plan

15.1 Existing Water Infrastructure

There are no existing water supply mains within the estate. The following summarises the existing water mains adjacent to the estate:

» There is an existing 300mm diameter trunk water main (being constructed as part of the John Gorton Drive extension) along the eastern verge of John Gorton Drive adjacent to the Estate. This existing 300mm diameter main will service the low zone of Denman Prospect Stage 1A.

» There is an existing 150mm diameter water main (being constructed as part of the John Gorton Drive extension) along the western verge of John Gorton Drive adjacent to the Estate.

» There are existing 150mm diameter water main (connected to the existing 300mm trunk water main) along the stub road adjacent to the existing pond of John Gorton Drive.

» There is an existing 300mm trunk water main (under construction) along Uriarra Road. This existing 300mm diameter main will service the intermediate zone of Denman Prospect Stage 1A.

» Denman Prospect Stage 1A falls within two water pressure zones, being the low zone which will service a small portion of the estate of John Gordon Drive and the intermediate zone which will service the majority of the estate from Uriarra Road. The zone boundary is shown on the water masterplan.

15.2 Proposed Water Infrastructure

The Water Supply Master Plan indicates the alignment and size of the water mains for Denman Prospect Stage 1A. The Master Plan has been prepared in accordance with the requirements of Appendix D of the ACTEW Corporation 'Water Supply and Sewerage Standards.' The detailed design will also be undertaken in accordance with Part 2 of the 'Water Supply and Sewerage Standards.'

The proposed water design for Denman Prospect Stage 1A has the following features:

» A zone boundary is located through the Estate.

» The intermediate zone will connect to the 300mm trunk main in Uriarra Road.

» The low zone will connect to the 300mm trunk main in John Gorton Drive.

» 150mm dia water mains will be provided adjacent to all edge roads where a higher F5 fire category is required for bush fire requirements.

» F4 fire category is applicable to the school site in accordance with the ACTEW Corporation 'Water Supply and Sewerage Standards.'

» F5 fire category is applicable to all multi-unit sites in Denman Prospect due to the proposed density of these developments.

The intermediate and low zone water supply network has been modelled by Brown Consulting under peak flow and fire demand flow. The analysis indicates that sufficient pressures can be obtained throughout the estate area. A summary of the results can be seen on C13172-WMP.

16. Utilities

All services (telecommunications, electricity and gas) can be provided to the Estate. Preliminary planning for servicing of Molonglo Valley stage 2 development area has been carried out by the relevant utility companies. Telecommunications, electricity and gas services to Denman Prospect Stage 1A have been included in the extension of John Gorton Drive.

The utilities services layout for Denman Prospect Stage 1A is shown on drawing C13172-US.1.

17. Staging

It is proposed to construct the works in two (2) stages which will enable the progressive release of blocks to the market.

The proposed staging is shown in Drawing C13172-ST - Staging Plan. This plan shows the nominated Stages 1A1 and 1A2.

The stage boundary of 1A1 includes connection to Uriarra road to allow for the connection of the intermediate zone water main.

Stage 1A1 will be split into two sub stages, 1A1-A and 1A1-B. 1A1-B will include the proposed pond only to facilitate separate handover of the pond to TAMS.

18. Geotechnical Structure and Site Grading

Geotechnical investigations have been undertaken by Douglas and Partners for the Molonglo Valley Stage 2 area.

The following reports have been prepared:

- Report on Preliminary Geotechnical Investigation Proposed Residential Development Molonglo 2
- Factual Report on Geotechnical Investigation Proposed Residential Development Molonglo 2
- Factual Report on Preliminary Geotechnical Investigation Proposed Residential Development Stages B1 and B2 Molonglo 2

18.1 Site Grading

Denman Prospect Stage 1A is characterised by the ridge along the northern perimeter of Stage 1A (central within Denman Prospect 1). This ridge generally forms the boundary between Stages 1A and 1B. The land then falls steeply to the south and east with grades ranging from 5% to 20%+. The Slope Analysis Plan, C13172-SAP - Slope Analysis Plan shows the grades across the site.

The Site Fill Plans (drawings C13172.SG) provide a preliminary estimate of the earthworks required to construct the roads and grade blocks.

The site grading has been based on:

- Maximum allowance road longitudinal gradients.
- Achieving maximum 8% grade along proposed bus routes.
- Minimising back of block sewer easements by grading the sections to allow the sewer to drain to the road where possible.
- Minimising the slope of proposed blocks to aid house construction.
- Minimising path grades where practical to do so.
- Minimising earthworks.

Earthworks are provided for all roads, then on blocks where required to provide a satisfactory block grading. Blocks will also be stripped of any unsuitable material.

The earthworks will be undertaken in a staged manner with progressive stabilisation and will be undertaken in accordance with EPA Guidelines requiring approved sediment and erosion control measures. This will limit the risk of soil erosion from cut and fill operations. All disturbed areas will be stabilised on the completion of construction.

19. Off Site Works

The following offsite works outside the estate boundary are as follows:

- Path connections to and along John Gordon Drive and Uriarra Road.
- Sewer outfalls to John Gorton Drive.
- Water connection to John Gorton Drive.
- Water connection to Uriarra Road.
- Connection to existing water quality control pond including GPT access driveway.
- Utility Service connections.
- Landscaping adjacent to John Gordon Drive.
- Works associated with the Water Quality Control Pond.
- Landscaping and minor earthworks along Uriarra Road.
- Bushfire Protection measures.

20. Landscape Master Plan

20.1 Character

The landscape design philosophy for Denman Prospect Stage 1A is based on the following key principles:

» To develop a landscape which is sympathetic to the intrinsic cultural and environmental values of the area;

» To provide a new landscape which will flourish in urban conditions and will be environmentally effective now and into the future;

» To provide streetscapes and public domain to the Molonglo Commercial Centre commercial hub and Denman Prospect Local Centre reflecting the community focus of these areas and providing an attractive, comfortable urban amenity;

» To provide a public domain that shapes the character of the place. A public domain framework that is flexible and can accommodate development and redevelopment well into the future;

» To design a landscape that maximises the opportunity for people to identify with their home patch, their block, their immediate neighbourhood and to link with their hinterland, adjacent neighbourhoods and the district networks. Clarity of perception, address, connections, movement, and visual identity underpin the design;

» To provide open space areas that draw upon and work in harmony with the existing topography and landscape character;

» Effective streetscapes and large scale urban landscapes require space, soil, water to flourish; the design for the commercial hub provides enhanced verge growing conditions for large scale trees (space, improved soils, WSUD throughout);

» To provide perimeter and open space landscapes for recreation, habitat, and visual aesthetics; and

» Ensure the unique character of the site is integrated into the fabric of the landscape design.

Open Space Elements

The following key open space elements are identified in the landscape master plan and are to be read in conjunction with viewing landscape plans LMP.1-3, 13.1 - 13.3.

Open Space

The open space adjacent to Uriarra Road is to consist of a multi-use path, a series of seating nodes and an informal native planting. Mounds and rocks will be positioned and placed to reflect the character of the site.

The open space to the south of the site will continue the multi-unit path and seating nodes, the planting will seek to extend the Box Gum woodland along the creek line to connect with the Molonglo River Park system.

All entry roads will consist of an entry sign and dense planting of native trees to reinforce the estate entry character. The native theme will continue along the road until interface with dwellings occurs. The character will then change to exotic planting.

Streetscape

The collector roads are to be planted with distinctive large trees, reinforcing the road hierarchy and with a variety of species along different sections acting as placemakers and wayfinders to different residential areas.

The residential units have been created from a combination of slope and orientation as well as borrowing from the Arboretum patchwork quilt concept.

A major east west corridor has been created to link the open space in east to Cravens Creek corridor to the west. A 10m wide verge has been created allowing large trees to reinforce the corridor.

20.2 Development Interface

The interface landscape to the west and south will be informal native tree groupings, grassland, mounds, rocks and multi-use paths linking all parts of Denman Prospect Stage 1A to perimeter open spaces and to regional trails and bike routes.

20.3 Tree Survey and Retention

The LDA has undertaken a comprehensive Tree Assessment for the Molonglo Stage 2 including Denman Prospect.

Relevant pages (trees with Denman Prospect Stage 1A) from the Tree Assessment are included in appendix I.

Further trees within Denman Prospect Stage 1 were surveyed by **SPACE**LAB Studio Pty Ltd in 2014 to confirm impacts on certain trees.

The Tree Management Plans for Denman Prospect Stage 1A, refer DWG: C13172 – TMP – 14.1, identify the status of the trees on site and nominates those trees to be retained and those recommended for removal. The Plan indicates the following regulated tree removals:-

High Quality (1)

Medium Quality (6)

Poor quality (4)

There are a number of unregulated trees within the Box Gum woodland area and are to be assessed in the whole of the Molonglo 2 Estate. 94% of trees will be retained.

21. Block Compliance Plan

The Block Compliance Plan (BCP) was prepared using the *Estate Development Code* containing ***Appendix A*** – *Block Compliance Table*. All blocks that comply have been noted as a direct comparison to the *Block Compliance Table.*

The results of the Block Compliance assessment indicate 99% of the blocks in the Estate complied with the Block Compliance Table. Refer Dwg C13172 – BCP, drawings 1-3.

The BCP also indicates two types of blocks, ones that do not comply with the Building Compliance Tables but do comply with the Test Block requirements, and ones that comply with the Building Compliance Table but do not comply with the Test Block requirements. Both types of blocks are deemed as "limited development potential blocks".

22. Capital Works

No further capital works are required in association with the Denman Prospect Stage 1A. John Gorton Drive and intersections of Uriarra Road are currently under construction as Capital Works and are expected to be completed prior to commencement of construction of Denman Prospect Stage 1A.

23. Bushfire Protection Measures

A Bushfire Risk Assessment for Molonglo Stage 2 was prepared by Australian Bushfire Protection Planners Pty Ltd. A review of this report and the Stromlo Park Fire Management Plan 2012 Forest was carried out by Aurecon in relation to Denman Prospect Stage 1A. The report and review is attached at **Appendix C**. A bushfire plan C13172-BMP presents the proposed bushfire protection measures for this estate.

24. Waste Collection Plan

A waste collection plan is provided which shows on street garbage collection will be provided for all blocks. Refer drawing C13172-WCP.

25. Landuse Plan

A Landuse Plan (C13172-LUP-7.1) has been prepared to indicate the land use policy applicable to the site – refer also to Section 1.2 'Planning Context'.

26. Development Intentions Plan

Typical Development Intentions Plan has been prepared to show the building intent for the proposed school. Refer drawings C13172-DIP1 - 24.1.

27. Planning Controls Plan

Planning Controls Plans have been prepared to show block requirements in addition to *The Territory Plan – Single Dwelling Housing Code*. Refer drawings C13172-PCP-31.1 to 31.3.

28. Building Envelope Plan

Building envelopes have been prepared for all blocks that do not comply with the Block compliance Table. Refer drawings C13172-BDP-23.1 and 23.2.