ACT Government
Health

REF: FOI:15-54

[redacted]

Dear [redacted]

I refer to your application under the ACT Freedom of Information Act 1989 (the Act), received by ACT Health on 20 November 2015, in which you requested access to documents relating to public transport for the University of Canberra Public Hospital.

As Deputy Director General, Health Planning and Infrastructure, ACT Health, I am an officer authorised to make a decision in respect of a request for information, under section 22 of the Act.

After conducting a search of the relevant records, ACT Health has identified 314 pages of documentation in its possession that meet the scope of your request. I have decided that a number of documents are exempt or partially exempt from release, in accordance with provisions under the Act, as outlined in the Schedule of Documents attached to this letter. The remaining documents are to be fully released.

My decision is appealable under the Act. This means that if you are dissatisfied with this outcome you have a right to seek a review under section 59 of the Act. If you wish to seek a review you should write to:

The Principal Officer
C/- FOI Coordinator
Executive Coordination
ACT Health
GPO Box 825
CANBERRA ACT 2601

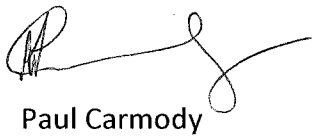
You have 28 days from the date of this letter to seek a review of the outcome or such other period as the Principal Officer permits.

Under section 54 of the Act, if you are concerned about the processing of your request or related administrative matters, you may complain to the Ombudsman, who may conduct an independent investigation into your complaint. There is no fee for this, and the contact details are as follows:

The Ombudsman
GPO Box 442
CANBERRA ACT 2601

If you have any queries concerning ACT Health's processing of your request, or would like further information, please contact the Freedom of Information Coordinator on: (02) 6205 1340 or via email at: HealthFOI@act.gov.au

Yours sincerely



Paul Carmody
Deputy Director General
Health Planning and Infrastructure

18 January 2016

SCHEDULE OF DOCUMENTS

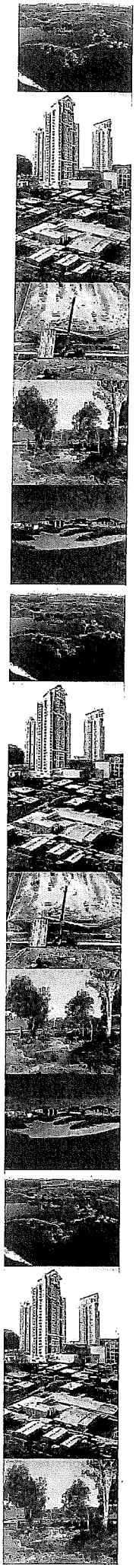
Documents relating to public transport and the University of Canberra Public Hospital – FOI15/54

FOLIO	ITEM	DATE	STATUS	REASON FOR EXEMPTION	Internet publication – YES/NO – if no, why not
1-39	Report – Traffic Impact Assessment	February 2013	Full release	This document formed part of the Development Application (DA) which was publically available during the DA approval process.	YES
40	Copy of email from consultant to department providing link to reports	13.04.15	Part release S41	Partial release – personal privacy which may identify a person. Link to report/s is no longer accessible, however the reports are the same as folio (1).	YES
41-47	Email from TAMS directorate, with attachments – proposed road access	16.04.15	Exempt S43(1)(b)	Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	NO
48-50	Email from TAMS to Health – summary of meeting goals regarding road access	01.05.15	Part release S41	Personal privacy which may identify a person from an external agency.	YES
51-52	Email from TAMS to Health – bus turnaround requirements	12.05.15	Full release		YES

53-56	Email from external agency to Health, with attachment regarding roads	18.08.15	Part release S41 S43(1)(b)	Personal privacy which may identify a person from an external agency. Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	YES
57-58	Email from TAMS to consultant and Health - proposal	15.05.15	Part release S43(1)(b)	Contents of document relate to business decisions not yet made. Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	YES
59-65	Email from TAMS to Health, with attachments – proposal	27.05.15	Part release S36(1) S41 S43(1)(b)	Relates to a draft report (i.e. an internal working document). Personal privacy which may identify a person from an external agency. Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	YES
66-67	Copy of email from TAMS to consultant, with attachment	11.08.15	Part release S36(1) S41	Relates to a draft report, (i.e. an internal working document). Personal privacy which may identify a person from an external agency.	YES
68-93	Email from TAMS to Health, with attachment - presentation	17.08.15	Exempt S43(1)(b)	Relates to business decision making process that is Cabinet-in-confidence. Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	NO

94-95	Email from Health to TAMS – public transport	17.08.15	Part release S41 S43(1)(b)	Personal privacy which may identify a person from an external agency. Relates to business decision making process that is Cabinet-in-confidence. Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	YES
96-97	Email re report, with attachment	09.09.15	Exempt S43(1)(b)	Relates to business decision making process that is Cabinet-in-confidence Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	NO
98-189	Email re report, with attachment	30.10.15	Exempt S43(1)(b)	Attachment marked as commercial in confidence. Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	NO
190-191	Copy of email from consultant to external agency, with attachment (meeting agenda)	04.11.15	Exempt S43(1)(b)	Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	NO
192-195	Email from external agency to Health, with attachments (drawings)	11.15.15	Part release S41	Personal privacy which may identify a person from an external agency.	YES
196-199	Internal department email, with attachments (drawings)	19.11.13	Exempt S41	Personal privacy which may identify a person from an external agency.	NO
200-205	Email from TAMS to external agency and Health – with attachment (meeting minutes)	18.11.15	Exempt S43(1) (b)	Documents contain commercially sensitive information which could affect the Directorate adversely in the conduct of business affairs.	NO

206	Internal department email re road	26.11.15	Part release S41	Personal privacy which may identify a person from an external agency.	YES
207-208	UCPH FAQ sheet - draft	2015	Exempt S36	Draft internal working document	NO
209-210	Email from Health to TAMS – meeting summary	01.05.15	Part release S41	Personal privacy which may identify a person from an external agency.	YES
211	Email – Health to TAMS - meeting	01.05.15	Part release S41	Personal privacy which may identify a person from an external agency.	YES
212-282	Development Application Submission – University of Canberra Public Hospital	April 2015	Full release	Development Application (DA) documentation was publically available during the DA approval process.	YES
283-314	Draft University of Canberra Public Hospital project Communications strategy	undated	Exempt S36	Draft internal working document, not yet endorsed for public release.	NO



BROWN
Smart Consulting

Traffic Impact Assessment

University of Canberra Public Hospital

C12189

February 2013

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NO	DATE	ISSUE	PREPARED BY	REVIEWED BY	AUTHORISED BY
1	20/02/13	Issued for review and comments	GO	JS	

DOCUMENT REFERENCE

H:\C12000\C12189\documents\sr\Traffic Impact Assessment Report\C12189 Traffic Impact Assessment Ver.1.docx

Table of Contents

1 INTRODUCTION

Brown Consulting has been commissioned by Shared Services Procurement to prepare a Traffic Impact Assessment of the University of Canberra Public Hospital, Bruce (refer Figure 1) referenced as 'the site', which has an area of 45,000 square metres.

The study area is situated between Ginninderra Drive to the north, Aikman Drive to the west and within proximity of Pantowora Street to the south-east.

Block 1 Section 3 Bruce is zoned under the ACT Government Territory Plan as CF: Community Facilities. ACT Government Health Directorate proposes to develop a new sub-acute hospital for the northern suburbs of Canberra. The facilities will be located at the University of Canberra and will be known as the University of Canberra Public Hospital.

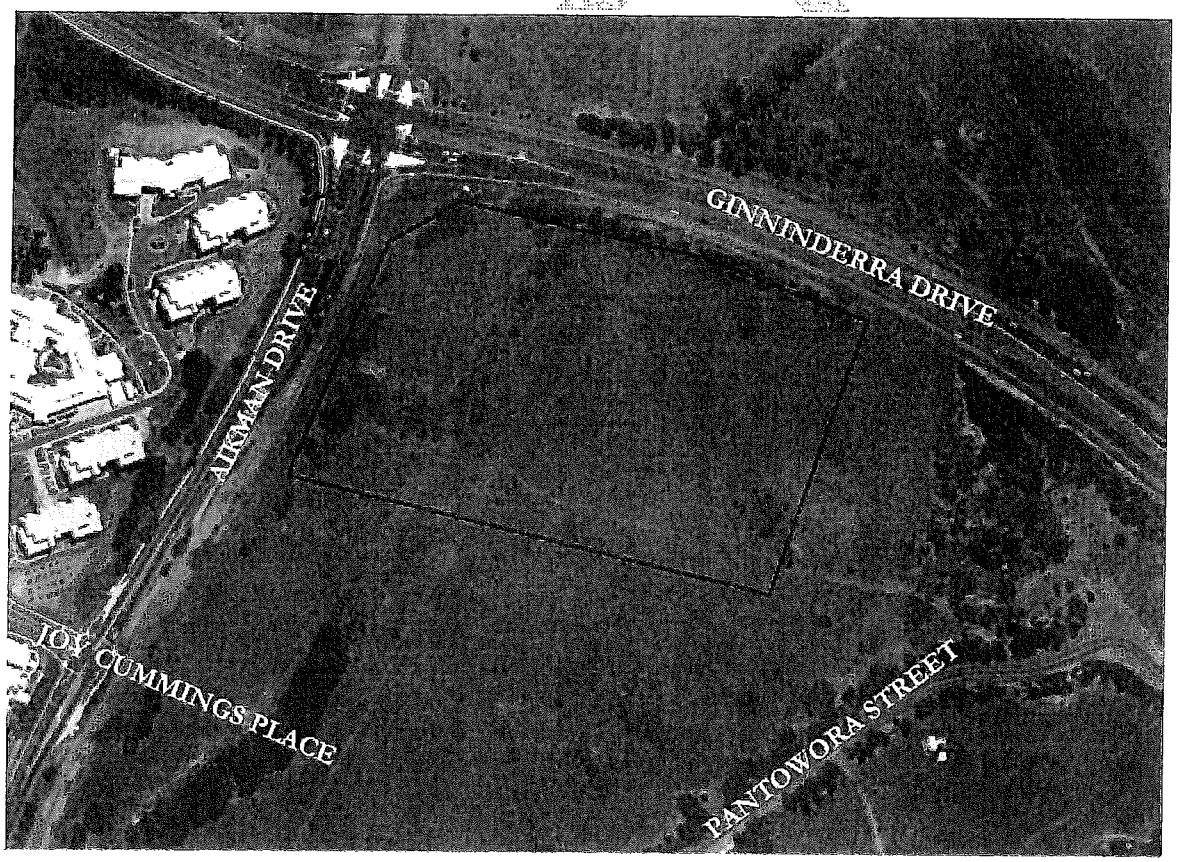


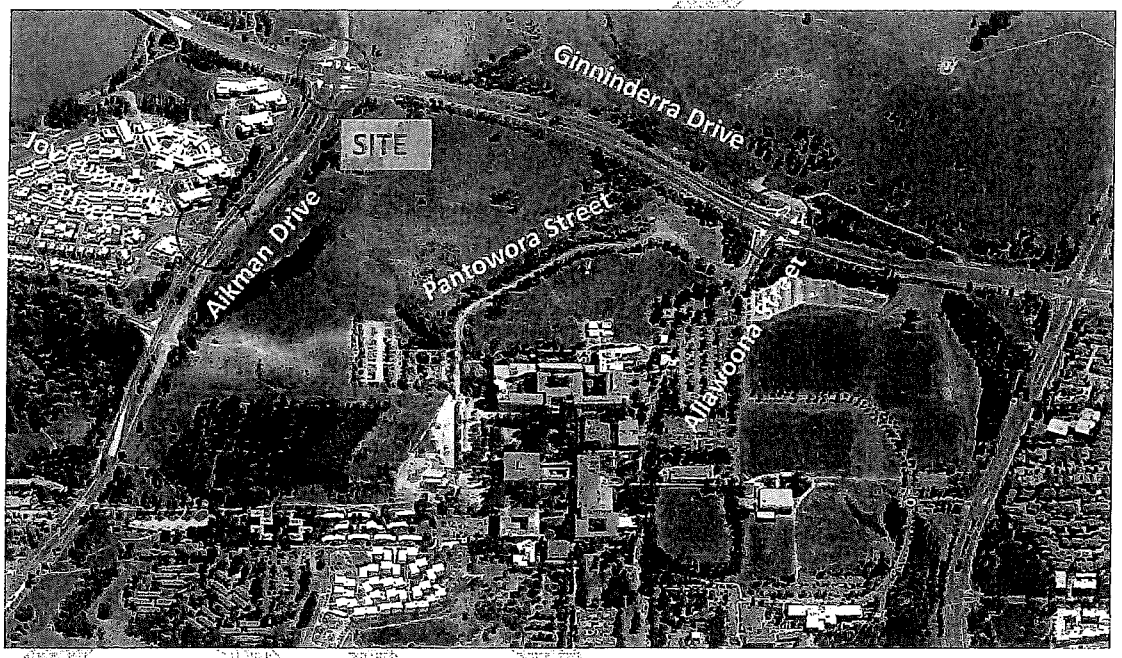
Figure 1 Site Map

Source: Google Earth

2 SITE DESCRIPTION

Block 1 Section 3 Bruce is situated approximately 1.8 km east of the Belconnen Business Centre. The block has direct road abuttal of Ginninderra Drive to the north, Aikman Drive to the west and within proximity of Pantowora Street to the south-east. The proposed hospital site has an area of approximately 45,000 square meters.

The site is bounded by Ginninderra Drive to the north, Aikman Drive to the west and Pantowora Street to the east. Intersections that will be impacted by the site are Ginninderra Drive/ Aikman Drive, Ginninderra Drive / Allawoona Street and Aikman Drive / Joy Cummings Place intersections.



Source: Google Earth

Figure 2 Site Location, Access Roads and Surrounding Intersections

3 EXISTING TRANSPORT CONDITIONS

3.1 Existing Road Network

- Aikman Drive

Aikman Drive is classified as an Arterial Road in the ACT Road Hierarchy System. This road is signposted 60 km/h and is expected to carry more than 6,000 vehicles per day. The road has one lane per direction with signalised intersections at Ginninderra Drive, Joy Cummings Place, Emu Bank and Eastern Valley Way and priority controlled intersections at Townsend Place and the access driveway to the University of Canberra (UC) Senior Secondary College.

- Ginninderra Drive

Ginninderra Drive is classified as an Arterial Road in the ACT Road Hierarchy System. This road is signposted 80 km/h and has two lanes per direction. Ginninderra Drive's intersections with Aikman Drive and Allawoona Street both have stubs for the future Lawson suburb.

- Allawoona Street

Allawoona Street is classified as an Access Street in the ACT Road Hierarchy System. This road is signposted 40 km/h and is the main access off Ginninderra Drive for the UC.

- Pantowora Street

Pantowora Street is classified as an Access Street in the ACT Road Hierarchy System. This road is signposted 40 km/h and is an access street to UC's Building 6 and 7 of the UC.

- Joy Cummings Place

Joy Cummings Place is classified as an Access Street in the ACT Road Hierarchy System. This road is signposted 40 km/h.

Figure 3 shows the existing daily traffic volumes for the surrounding road network.

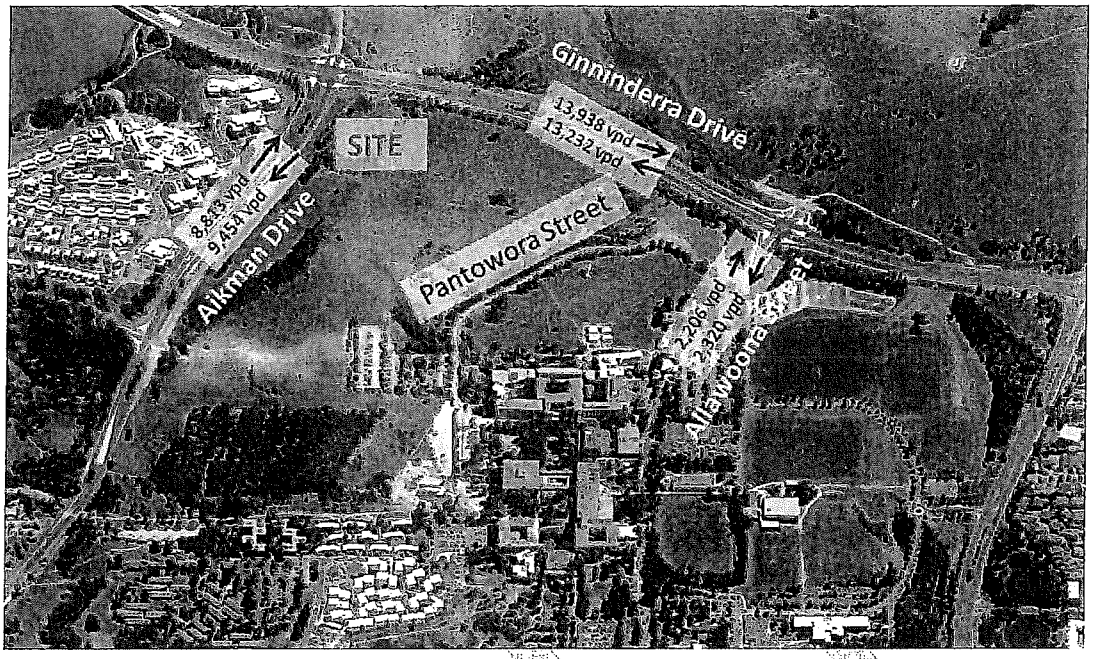


Figure 3 Daily Weekday Traffic Volumes – 2012 (vehicles per day)

3.2 Intersection Performance

As shown in **Figure 3**, a total of three intersections are noted within the vicinity of the site. Using SCATS data obtained from the Territory and Municipal Services (TAMS), SIDRA intersection performance analysis was undertaken. Table 1 below defines the level of service criteria for intersections. A summary of the existing intersection operating conditions are presented in Table 2 with the intersection locations in Figure 4.

Table 1 Level of Service Criteria for Intersections

Level of Service (LOS)	Average Delay per Vehicle (seconds)	Description for traffic signals and Roundabouts	Description for give way and stop signs
A	<14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity, incidents will	At capacity, requires

	cause excessive delays, roundabouts require other control mode	other control mode

Table 2 Pre Development LOS

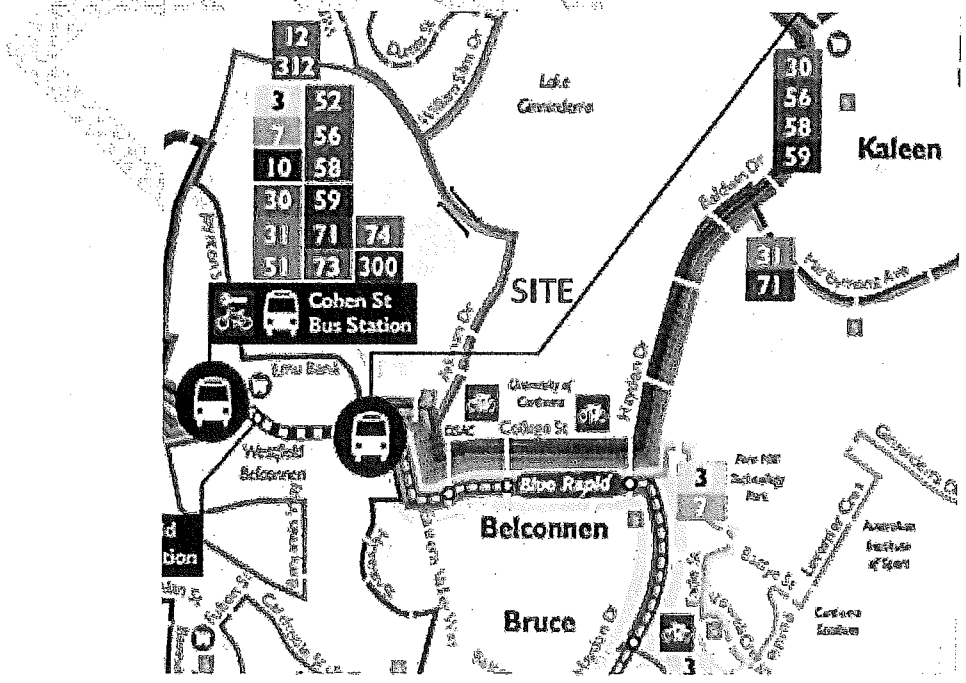
Intersection	Pre-Development			
	AM peak	Delay	PM peak	Delay
Aikman Drive / Ginninderra Drive	C	26.1	D	35.5
Ginninderra Drive / Allawoona Street	D	41.9	D	42.2
Aikman Drive / Joy Cummings Place	C	22.4	C	20.9

From **Table 2** it can be seen that all three intersections are performing well with only the Ginninderra Drive/ Allawoona Drive operating near capacity.

Appendix A of this report contains the SIDRA movement summaries for the above results.

3.3 Public Transport

The site is within close proximity to two ACTION Bus Routes; 51 and 52. These bus routes travel on Ginninderra Drive and Aikman Drive with the nearest bus stop at the intersection of Joy Cummings Place and Aikman Drive. Figure 5 shows the weekday bus routes near the site in **Figure 4**.

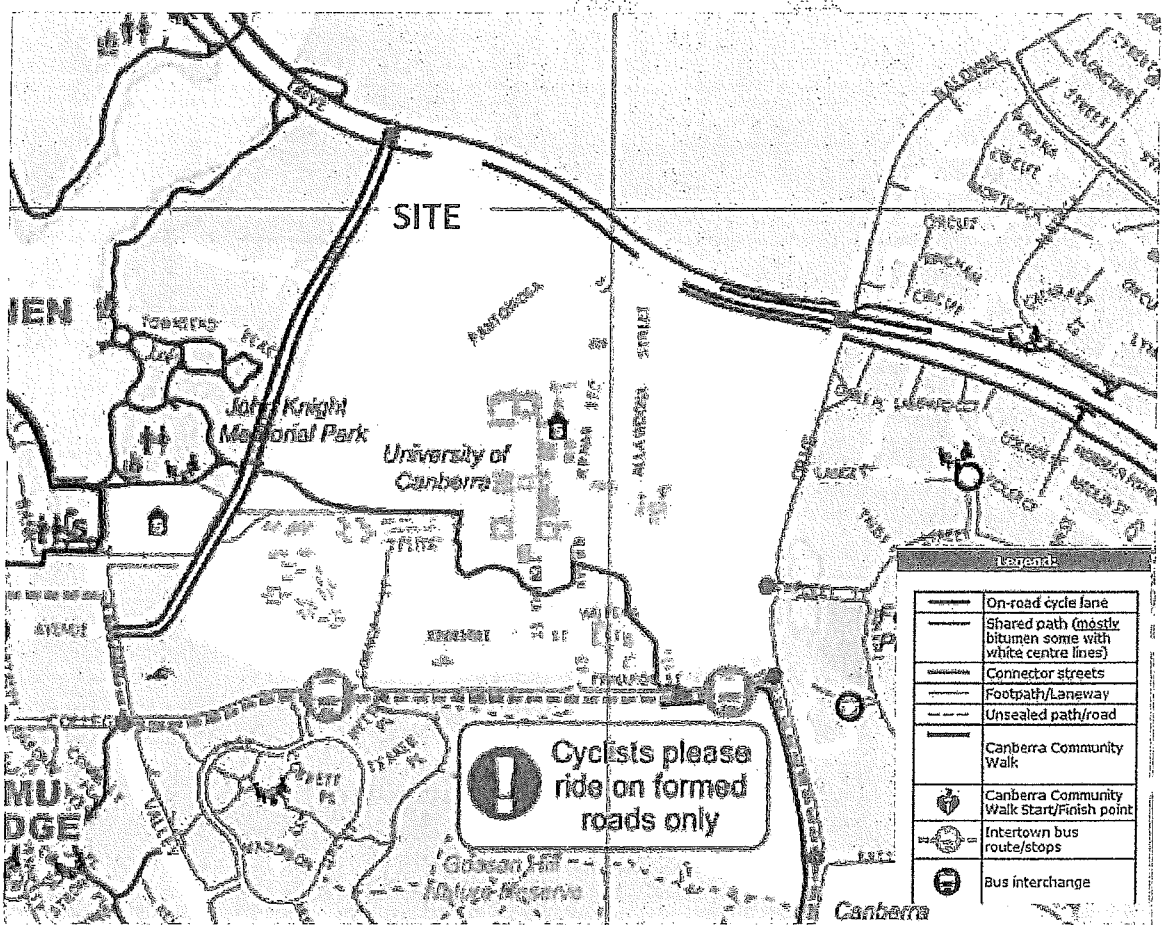


Source: ACTION Bus Route Weekday Map

Figure 4 ACTION Bus Routes

3.4 Pedestrian Links

A review of the Canberra and Queanbeyan Walking and Cycling Map shows that the site is covered by an extensive network of walking and cycling infrastructure. Aikman Drive has an off-road shared path on its west side from Ginninderra drive to Joy Cummings Place and on-road cycle lanes for its entire length. Along Ginninderra Drive, there are on-road cycle lanes and off-road shared paths on its south and north sides respectively. Allawoona Street has on-road cycle lanes from Ginninderra Drive to Pantowora Street.



Source: Canberra & Queanbeyan Pedestrian and Cycling Map

Figure 5 Pedestrian Map

3.5 Other Developments

University of Canberra – Masterplan

A review of the University of Canberra Masterplan 2012 determined that eastward extensions of Joy Cummings Place and Townsend Place to Pantowora Street are planned as future connections to the university. These road extensions will provide two new access points to the university from Aikman Drive. A north extension of the Pantowora shared street is also envisaged which may directly connect to the Site. The proposed UC circulation plan is shown in Figure 6.

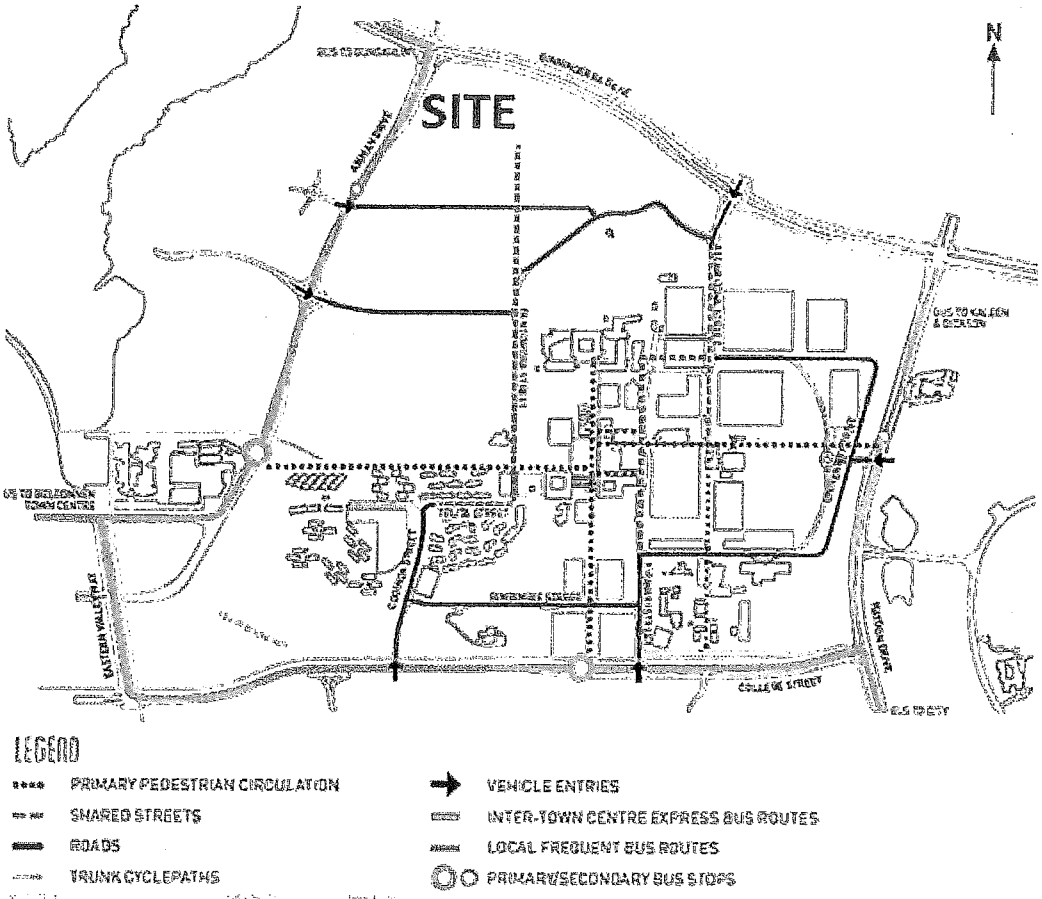


Figure 6 UC Masterplan Circulation Plan

Lawson South Suburb

Lawson South is a suburb located north of the site. This suburb is proposed to have 216 single dwellings, 1634 multi-unit dwellings, 14,141 square metres of mixed use floor space and 10,141 square metres of community facilities. Intersection traffic volumes cited in the Lawson South Master Planning Study – Cardno 2009 were used for in this study. Copies of the intersection traffic volumes are shown in Appendix B.

ACT GP Super clinic

A GP Super Clinic is being built at the east side of Allawoona Street. This development will have 4,820 square metres of GFA and will have GP Super Clinic occupying the first 2 floors with other floors housing the training facilities for the University's Faculty of Health and other health related organisations.

Using the RTA Guide to Traffic Generating Developments, the typical traffic generation rate for an extended hour medical centre is AM peak vehicle trip generation rate of 10.4 vehicles / hour / 100 square metre of GFA. Total AM Peak trip generation is 501 vehicles per hour which we will assume is equivalent to the PM Peak trip generation.

4 PROPOSED DEVELOPMENT AND IMPACTS

3.1 General

The UC Public Hospital is proposed to be a 200 bed facility with at least 150 full time employees. A review of the Orange Health Campus Redevelopment Study by MWT 2006 determined an effective trip generation rate of 0.84 and 0.8 trips 8 per bed for the AM and PM peak periods respectively. This equates to 168 AM peak hour vehicle trips and 160 PM peak hour vehicle trips

Based on the RTA Guide to Traffic Generating Developments, the typical traffic generation rates for a private hospital are:

- AM peak = -12.41 + 0.57*(number of beds)
- PM peak = -11.96 + 0.69*(number of beds)

This equates to 102 AM peak hour vehicle trips and 126 PM peak hour vehicle trips.

Comparing the resulting generated trips, this study used the conservative Orange Health Campus Redevelopment generated trips.

3.2 Site Access

The study assessed three access driveway locations; Aikman Drive, Ginninderra Drive and Pantowora Street. A review of the Calvary Hospital Parking and Traffic Study shows that there were regular occurrences of hospital employees using short stay / patient parking thus displacing and inconveniencing patients. A review of the Orange Health Campus showed similar attitude wherein hospital visitors and employees would utilise surrounding parking areas in the adjoining shops. To prevent this, the study recommends different access driveways for short stay and employee / long stay parking.

Aikman Drive is proposed to have a full access intersection that will be utilised by short stay, delivery and emergency vehicles.

For employee / long stay parking, there are two possible access arrangements;

- A left-in / left – out access along Ginninderra drive. Constraints for this access are possible conflict with the on-road cycle lanes and due to the proximity of the Ginninderra Drive / Aikman Drive intersection, the left-out access will be onto the left turn slip lane to Aikman Drive.

- A full access from Pantowora Street. The benefits of this access is that vehicles will be using the intersection of Ginninderra Drive / Allawoona Street and as discussed earlier, the UC Masterplan has identified future links to Pantowora Street; Joy Cummings Place extension and a northern extension of the Pantowora Street.

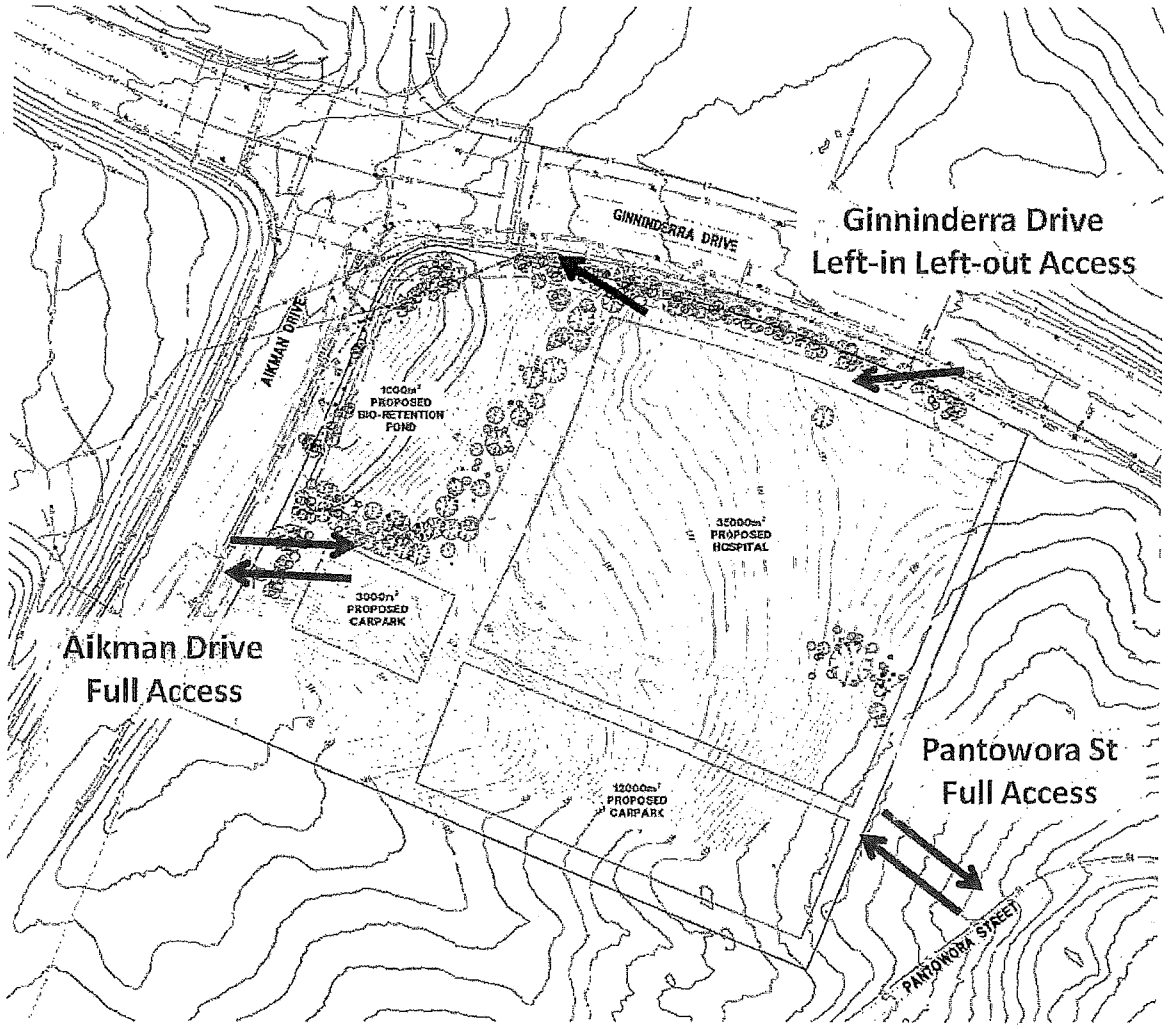


Figure 7 Proposed Access Driveways

3.3 Intersection Analysis

SIDRA Intersection analysis was undertaken for the post development scenario for the three intersections cited in Section 3.2 and a new intersection for a new access driveway on Aikman Drive for the UC Public Hospital. As seen in Table 4, the Ginninderra Drive / Allawoona Street intersection exhibited a poor LOS of F. This is attributed to the Lawson South suburb and GP Super clinic which both had generated traffic passing through this intersection. There also extensive queues along Aikman Drive for the AM Peak hour. There was a 400 metre queue and a 267 metre queue for the southbound lanes for the Aikman Drive / Joy Cummings Place and the Aikman Drive / UC Public Hospital Access respectively.

Table 3 Post Development LOS

Intersection	Post-Development			
	AM peak	Delay	PM peak	Delay
Aikman Drive / Ginninderra Drive	C	28.8	D	44.5
Ginninderra Drive / Allawoona Street	D	39.7	F	109.7
Aikman Drive / Joy Cummings Place	C	57.4	C	22.8
Aikman Drive / UC Public Hospital	C	24.7	B	14.9

3.4 Public Transport

The only impact the development will have on public transport is the addition of a new bus stop near the site's access driveway along Aikman Drive.

3.5 Pedestrian and Cyclist Links

The development may impact the on-road cycle lanes on the southern part of Ginninderra Drive if there the long stay / staff parking use the left in left out configuration on Ginninderra Drive. Otherwise, there are no adverse impacts on pedestrian and cyclist infra.

3.6 Proposed Parking

Vehicle parking requirements were calculated in accordance with the ACTPLA Parking and Vehicular Access General Code and parking rate estimates from the Orange Health Campus Redevelopment study. The Code determined a parking provision of 0.8 vehicle parking spaces per staff and 1.3 vehicle parking spaces per bed while the Orange study had 0.75 parking spaces per staff and 0.78 vehicle parking spaces per bed. The study has adopted the ACTPLA parking Code resulting in the site providing 260 vehicle parking spaces for the short stay and 120 vehicle parking spaces for the long stay / employee parking.

Based on the findings of the Calvary Parking and Traffic Study, parking requirements for hospital volunteers and medical students should also be catered for. At the time this report was written, no figures for volunteers and students were available.

Orange Health Campus Redevelopment

- 0.75 parking space per staff & 0.78 parking spaces per bed
- UC Hospital 200 beds = 156 parking spaces
- UC Hospital 150 staff = 113 parking spaces

ACTPLA Parking and Vehicular Access General Code

- 0.8 parking space per staff & 1.3 parking spaces per bed
- UC Hospital 200 beds = 260 parking spaces
- UC Hospital 150 staff = 120 parking spaces

5 CONCLUSIONS AND RECOMMENDATIONS

This report has assessed the traffic impacts of the proposed UC Public Hospital which will provide 200 beds and be staffed by 150 full time employees.

1. In terms of intersection performance in the post development AM peak scenario, all intersections have acceptable LOS. An issue that came up are the long queues on the southbound lanes for Aikman Drive / Joy Cummings Place and Aikman Drive / UC Public Hospital access intersections. It is recommended that these intersections have coordinated signals to minimise excessive queues.

2. For the PM peak scenario, the intersections on Aikman Drive exhibited acceptable LOS. The Ginninderra Drive / Allawoona Street intersection showed a poor LOS F. Noting that this intersection currently is operating near capacity, intersection improvements are recommended for this intersection to accommodate Lawson suburb, GP super clinic and UC Public Hospital employee vehicles.

3. Recommended access driveways for the site are:

    - Short Stay / Delivery / Emergency Vehicle access on Aikman Drive

- Long Stay / Employee vehicle access on Pantowora Street.

Access from Aikman Drive will need road widening on the east side. The bus stop will also need to be relocated to this intersection to provide public transport link to the hospital. These proposed changes are shown in Figure 8.

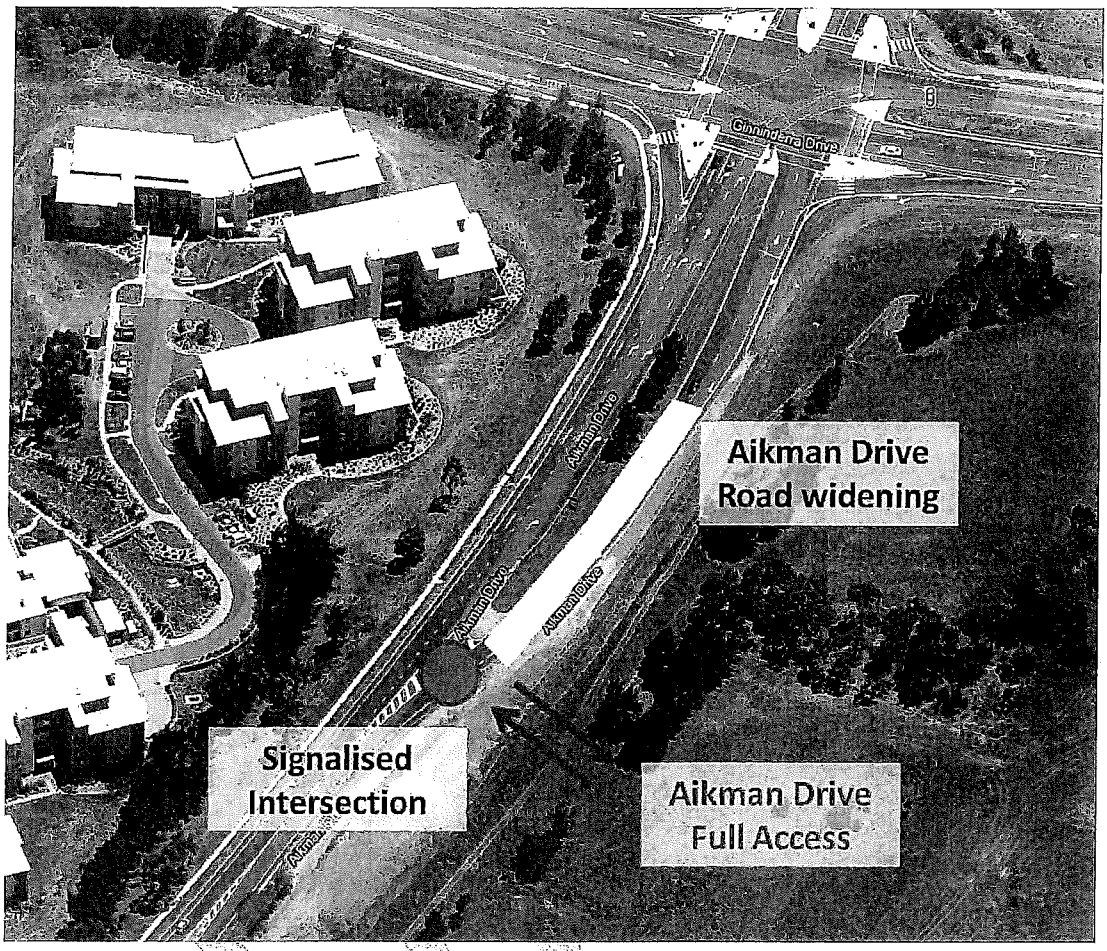


Figure 8 Recommended Aikman Drive Modifications

Access from Pantowora Street will require upgrading of the Allawoona Street consisting of creation of dedicated left turn lane onto Ginninderra Drive, duplication of Allawoona Street past Pantowora Street and the installation of a clear zone at the intersection of Allawoona Street / Pantowora Street intersection. These modifications are shown in Figure 9.

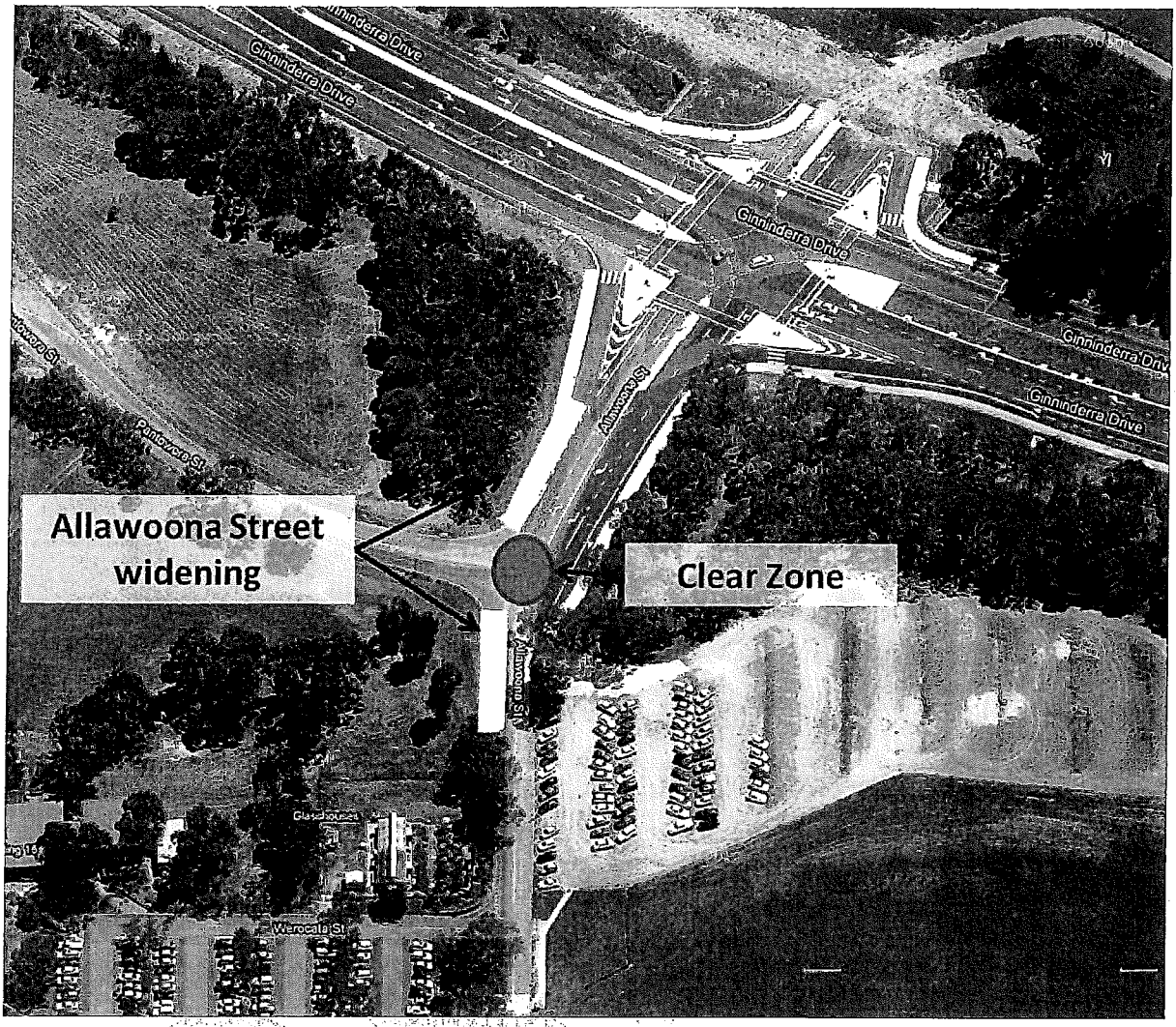


Figure 9 Recommended Allawoona Street Modifications

4. The site should provide for at least 260 parking spaces for short stay / patient / emergency and delivery vehicles and 120 parking spaces for long stay / employee parking. Additional vehicle parking spaces may be needed for volunteers and students.

APPENDICES

APPENDIX A: SIDRA Results
APPENDIX B: Lawson Suburb SIDRA Results

APPENDIX A

SIDRA Results

MOVEMENT SUMMARY

Site: FINAL -Post devt AM Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
Am Peak
Post development

Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	417	0.0	0.719	36.7	LOS D	32.1	226.7	0.87	0.90	30.4
22	T	805	3.0	0.719	35.0	LOS C	35.4	253.9	0.88	0.80	29.1
23	R	19	0.0	0.256	87.6	LOS F	1.4	10.0	1.00	0.70	17.7
Approach		1241	1.9	0.719	36.4	LOS D	35.4	253.9	0.88	0.83	29.2
North East: Lawson north											
24	L	81	0.0	0.158	30.5	LOS C	3.9	27.0	0.68	0.77	32.8
25	T	62	0.0	0.158	52.3	LOS D	3.9	27.0	0.86	0.67	23.7
26	R	42	0.0	0.565	89.7	LOS F	3.3	22.8	1.00	0.75	17.4
Approach		185	0.0	0.565	51.3	LOS D	3.9	27.0	0.81	0.73	24.7
North West: Ginninderra Drive west											
27	L	13	0.0	0.838	39.2	LOS D	54.2	389.2	0.89	0.94	30.3
28	T	1847	3.0	0.838	29.2	LOS C	54.5	391.4	0.89	0.83	31.7
29	R	412	0.0	0.756	48.2	LOS D	9.7	68.0	1.00	0.86	25.8
Approach		2272	2.4	0.838	32.7	LOS C	54.5	391.4	0.91	0.83	30.5
South West: Allawoona Street south											
30	L	78	0.0	0.176	28.4	LOS C	2.8	19.5	0.76	0.77	34.1
31	T	17	0.0	0.176	20.5	LOS C	2.8	19.5	0.76	0.61	35.2
32	R	14	0.0	0.188	87.0	LOS F	1.0	7.3	1.00	0.69	17.8
Approach		109	0.0	0.188	34.7	LOS C	2.8	19.5	0.79	0.73	30.6
All Vehicles		3807	2.1	0.838	34.9	LOS C	54.5	391.4	0.89	0.83	29.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	69.1	LOS F	0.2	0.2	0.96	0.96
P11	Across NE approach	53	18.8	LOS B	0.1	0.1	0.50	0.50
P13	Across NW approach	53	68.2	LOS F	0.2	0.2	0.95	0.95
P15	Across SW approach	53	31.4	LOS D	0.1	0.1	0.65	0.65
All Pedestrians		212	46.8	LOS E			0.77	0.77

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt AM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
AM Peak
Post development
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	148	2.0	0.114	11.2	LOS B	1.4	10.1	0.28	0.69	49.2
3	R	285	2.0	0.519	52.7	LOS D	6.6	47.2	0.97	0.80	26.8
Approach		433	2.0	0.519	38.5	LOS D	6.6	47.2	0.73	0.76	31.8
East: Ginninderra Drive east											
4	L	544	2.0	0.555	16.1	LOS B	12.9	92.3	0.56	0.83	49.8
5	T	331	3.0	0.555	29.4	LOS C	12.9	92.3	0.84	0.71	38.1
Approach		875	2.4	0.555	21.1	LOS C	12.9	92.3	0.66	0.78	44.3
West: Ginninderra Drive west											
11	T	1951	3.0	0.895	30.7	LOS C	49.7	356.8	0.95	0.98	37.5
12	R	782	2.0	0.805	27.1	LOS C	13.3	94.5	0.87	0.86	39.7
Approach		2733	2.7	0.895	29.7	LOS C	49.7	356.8	0.93	0.95	38.1
All Vehicles		4041	2.6	0.895	28.8	LOS C	49.7	356.8	0.85	0.89	38.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	32.0	LOS D	0.1	0.1	0.80	0.80
P2	Across S approach	53	32.0	LOS D	0.1	0.1	0.80	0.80
P3	Across E approach	53	39.6	LOS D	0.1	0.1	0.89	0.89
P4	Across E approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P7	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P8	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		318	39.4	LOS D			0.89	0.89

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak
Aikman Drive - Joy Cummings Place

Aikman Drive / Joy Cummings Place
PM Peak
Post development
Signals - Fixed Time Cycle Time = 119 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	659	2.0	0.438	4.5	LOS A	12.4	88.4	0.36	0.33	51.7
26	R	28	0.0	0.280	64.8	LOS E	1.6	11.0	0.96	0.72	21.5
Approach		687	1.9	0.438	7.0	LOS A	12.4	88.4	0.38	0.34	48.9
North West: Joy Cummings Place											
27	L	41	0.0	1.000[3]	65.4	LOS E	2.3	16.3	0.97	0.72	21.4
29	R	31	0.0	0.141	59.9	LOS E	1.6	11.5	0.93	0.73	22.7
Approach		72	0.0	1.000	63.0	LOS E	2.3	16.3	0.95	0.72	21.9
South West: Aikman Drive south											
30	L	44	0.0	0.420	60.5	LOS E	2.4	16.6	0.94	0.73	22.5
31	T	1129	2.0	0.906	28.5	LOS C	63.8	454.4	0.93	0.94	32.0
Approach		1173	1.9	0.906	29.7	LOS C	63.8	454.4	0.93	0.93	31.5
All Vehicles		1932	1.9	1.000	22.8	LOS C	63.8	454.4	0.74	0.72	35.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 .x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P13	Across NW approach	53	10.1	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		106	31.9	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: POST Devt -AM Peak Aikman Drive - UC Public Hospital

Aikman Drive / UC Public Hospital
AM Peak
Post devt
Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: UC Public Hospital											
21	L	2	0.0	0.017	31.6	LOS C	0.1	0.5	0.89	0.63	32.1
23	R	1	0.0	0.017	31.9	LOS C	0.1	0.5	0.89	0.64	32.1
Approach		3	0.0	0.017	31.7	LOS C	0.1	0.5	0.89	0.63	32.1
North East: Aikman Drive north											
24	L	15	0.0	0.806	25.2	LOS C	38.8	276.1	0.82	0.94	37.4
25	T	1334	2.0	1.000[3]	18.2	LOS B	38.8	276.1	0.87	0.79	37.8
Approach		1349	2.0	1.000	18.3	LOS B	38.8	276.1	0.87	0.79	37.8
South West: Aikman Drive south											
31	T	433	2.0	0.662	31.6	LOS C	20.1	143.4	0.90	0.79	30.6
32	R	15	0.0	0.662	40.0	LOS D	20.1	143.4	0.90	0.91	30.1
Approach		448	1.9	0.662	31.9	LOS C	20.1	143.4	0.90	0.79	30.6
All Vehicles		1800	2.0	1.000	21.7	LOS C	38.8	276.1	0.88	0.79	35.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	9.6	LOS A	0.1	0.1	0.42	0.42
P11	Across NE approach	53	49.2	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		106	29.4	LOS C			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
PM Peak
Post Development

Signals - Fixed Time Cycle Time = 127 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	111	0.0	1.102	170.4	LOS F	83.2	595.1	1.00	1.57	10.8
22	T	1352	3.0	1.102	165.3	LOS F	86.3	619.5	1.00	1.62	10.6
23	R	58	0.0	0.661	77.6	LOS E	3.8	26.9	1.00	0.80	19.3
Approach		1521	2.7	1.102	162.3	LOS F	86.3	619.5	1.00	1.59	10.8
North East: Lawson north											
24	L	20	0.0	0.032	18.1	LOS B	0.5	3.5	0.54	0.70	40.3
25	T	16	0.0	0.032	36.8	LOS D	0.7	4.6	0.77	0.55	28.7
26	R	13	0.0	0.068	64.2	LOS E	0.7	5.2	0.93	0.69	21.8
Approach		49	0.0	0.068	36.4	LOS D	0.7	5.2	0.72	0.65	29.7
North West: Ginninderra Drive west											
27	L	36	0.0	0.574	41.3	LOS D	21.9	157.2	0.80	0.92	29.2
28	T	934	3.0	0.574	30.8	LOS C	22.2	159.4	0.80	0.72	31.1
29	R	118	0.0	0.336	39.2	LOS D	1.9	13.2	0.97	0.75	28.9
Approach		1088	2.6	0.574	32.0	LOS C	22.2	159.4	0.82	0.73	30.8
South West: Allawoona Street south											
30	L	393	0.0	1.069	124.7	LOS F	52.9	370.3	1.00	1.27	13.7
31	T	239	0.0	1.069	116.8	LOS F	52.9	370.3	1.00	1.27	13.7
32	R	190	0.0	1.000[3]	112.2	LOS F	16.3	114.2	1.00	1.17	14.8
Approach		822	0.0	1.069	119.5	LOS F	52.9	370.3	1.00	1.25	13.9
All Vehicles		3480	2.0	1.102	109.7	LOS F	86.3	619.5	0.94	1.23	14.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	21	56.7	LOS E	0.1	0.1	0.94	0.94
P11	Across NE approach	21	27.1	LOS C	0.0	0.0	0.65	0.65
P13	Across NW approach	21	55.8	LOS E	0.1	0.1	0.94	0.94
P15	Across SW approach	21	35.5	LOS D	0.1	0.1	0.75	0.75
All Pedestrians		84	43.8	LOS E			0.82	0.82

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
PM Peak
Post development
Signals - Fixed Time Cycle Time = 119 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	157	0.0	0.208	27.6	LOS C	5.3	37.0	0.65	0.76	37.0
3	R	478	0.0	0.901	77.1	LOS E	16.0	112.3	1.00	1.01	21.2
Approach		635	0.0	0.901	64.8	LOS E	16.0	112.3	0.91	0.95	23.7
East: Ginninderra Drive east											
4	L	555	0.0	0.930	52.7	LOS D	60.8	429.9	1.00	1.04	28.0
5	T	1330	3.0	0.930	45.3	LOS D	62.0	444.8	1.00	1.06	30.3
Approach		1885	2.1	0.930	47.5	LOS D	62.0	444.8	1.00	1.06	29.6
West: Ginninderra Drive west											
11	T	565	3.0	0.238	10.5	LOS B	7.1	51.1	0.47	0.41	56.8
12	R	269	0.0	0.692	47.2	LOS D	7.5	52.7	0.98	0.83	29.1
Approach		834	2.0	0.692	22.4	LOS C	7.5	52.7	0.64	0.54	44.3
All Vehicles		3354	1.7	0.930	44.5	LOS D	62.0	444.8	0.89	0.91	30.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	15.6	LOS B	0.1	0.1	0.51	0.51
P2	Across S approach	53	15.6	LOS B	0.1	0.1	0.51	0.51
P3	Across E approach	53	47.2	LOS E	0.2	0.2	0.89	0.89
P4	Across E approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P7	Across W approach	53	51.8	LOS E	0.2	0.2	0.93	0.93
P8	Across W approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		318	39.6	LOS D			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak
Aikman Drive - Joy Cummings Place

Aikman Drive / Joy Cummings Place
PM Peak
Post development
Signals - Fixed Time Cycle Time = 119 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	659	2.0	0.438	4.5	LOS A	12.4	88.4	0.36	0.33	51.7
26	R	28	0.0	0.280	64.8	LOS E	1.6	11.0	0.96	0.72	21.5
Approach		687	1.9	0.438	7.0	LOS A	12.4	88.4	0.38	0.34	48.9
North West: Joy Cummings Place											
27	L	41	0.0	1.000[3]	65.4	LOS E	2.3	16.3	0.97	0.72	21.4
29	R	31	0.0	0.141	59.9	LOS E	1.6	11.5	0.93	0.73	22.7
Approach		72	0.0	1.000	63.0	LOS E	2.3	16.3	0.95	0.72	21.9
South West: Aikman Drive south											
30	L	44	0.0	0.420	60.5	LOS E	2.4	16.6	0.94	0.73	22.5
31	T	1129	2.0	0.906	28.5	LOS C	63.8	454.4	0.93	0.94	32.0
Approach		1173	1.9	0.906	29.7	LOS C	63.8	454.4	0.93	0.93	31.5
All Vehicles		1932	1.9	1.000	22.8	LOS C	63.8	454.4	0.74	0.72	35.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P13	Across NW approach	53	10.1	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		106	31.9	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: POST Devt -PM Peak Aikman Drive - UC Public Hospital

Aikman Drive / UC Public Hospital
PM Peak
Post devt
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: UC Public Hospital											
21	L	15	0.0	0.271	61.7	LOS E	1.8	12.5	0.98	0.72	22.3
23	R	15	0.0	0.271	62.0	LOS E	1.8	12.5	0.98	0.72	22.2
Approach		30	0.0	0.271	61.9	LOS E	1.8	12.5	0.98	0.72	22.2
North East: Aikman Drive north											
24	L	1	0.0	0.326	18.2	LOS B	11.2	80.1	0.41	0.94	41.2
25	T	822	2.0	1.000[3]	15.0	LOS B	11.2	80.1	0.68	0.59	40.5
Approach		823	2.0	1.000	15.0	LOS B	11.2	80.1	0.68	0.60	40.6
South West: Aikman Drive south											
31	T	635	2.0	0.509	12.5	LOS B	21.6	153.5	0.55	0.50	42.9
32	R	2	0.0	0.509	21.0	LOS C	21.6	153.5	0.55	1.04	39.8
Approach		637	2.0	0.509	12.6	LOS B	21.6	153.5	0.55	0.50	42.9
All Vehicles		1490	2.0	1.000	14.9	LOS B	21.6	153.5	0.63	0.56	40.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	7.6	LOS A	0.1	0.1	0.33	0.33
P11	Across NE approach	53	64.1	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		106	35.8	LOS D			0.64	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 AM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
AM Peak
2012
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	148	2.0	0.113	11.2	LOS B	1.4	10.1	0.28	0.69	49.2
3	R	174	2.0	0.316	51.1	LOS D	3.9	27.7	0.93	0.77	27.3
Approach		322	2.0	0.316	32.7	LOS C	3.9	27.7	0.63	0.74	34.4
East: Ginninderra Drive east											
4	L	541	0.0	0.610	15.6	LOS B	13.9	97.3	0.57	0.84	50.4
5	T	324	0.0	0.610	29.5	LOS C	13.9	97.3	0.84	0.70	37.9
Approach		865	0.0	0.610	20.8	LOS C	13.9	97.3	0.67	0.79	44.5
West: Ginninderra Drive west											
11	T	1927	3.0	0.884	28.6	LOS C	47.3	339.6	0.94	0.96	38.8
12	R	823	2.0	0.765	23.0	LOS C	10.7	76.2	0.79	0.83	42.8
Approach		2751	2.7	0.884	26.9	LOS C	47.3	339.6	0.90	0.92	39.8
All Vehicles		3937	2.0	0.884	26.1	LOS C	47.3	339.6	0.83	0.87	40.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	37.0	LOS D	0.1	0.1	0.86	0.86
P2	Across S approach	53	37.0	LOS D	0.1	0.1	0.86	0.86
P3	Across E approach	53	39.6	LOS D	0.1	0.1	0.89	0.89
P4	Across E approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P7	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P8	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		318	41.0	LOS E			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 Am Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
Am Peak
2012

Signals - Fixed Time Cycle Time = 138 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	176	0.0	0.569	35.3	LOS D	23.0	163.7	0.79	0.88	31.3
22	T	805	3.0	0.569	28.9	LOS C	24.0	172.4	0.79	0.71	31.8
23	R	1	0.0	0.012	77.7	LOS E	0.1	0.5	0.97	0.59	19.3
Approach		982	2.5	0.569	30.1	LOS C	24.0	172.4	0.79	0.74	31.7
North East: Lawson north											
24	L	1	0.0	0.002	28.5	LOS C	0.0	0.3	0.62	0.64	33.9
25	T	1	0.0	0.002	42.2	LOS D	0.0	0.3	0.79	0.47	26.7
26	R	1	0.0	0.012	77.7	LOS E	0.1	0.5	0.97	0.59	19.2
Approach		3	0.0	0.012	49.5	LOS D	0.1	0.5	0.79	0.57	25.2
North West: Ginninderra Drive west											
27	L	1	0.0	0.889	68.0	LOS E	59.1	424.6	0.96	0.98	21.8
28	T	1847	3.0	0.889	48.1	LOS D	59.2	425.0	0.96	0.94	24.8
29	R	172	0.0	0.492	43.5	LOS D	3.5	24.5	0.99	0.77	27.4
Approach		2020	2.7	0.889	47.7	LOS D	59.2	425.0	0.96	0.92	25.0
South West: Allawoona Street south											
30	L	27	0.0	0.032	14.1	LOS B	0.5	3.2	0.42	0.69	43.4
31	T	1	0.0	0.032	6.2	LOS A	0.5	3.2	0.42	0.32	47.7
32	R	14	0.0	0.173	80.2	LOS F	1.0	6.7	0.99	0.69	18.9
Approach		42	0.0	0.173	35.9	LOS D	1.0	6.7	0.61	0.68	30.3
All Vehicles		3047	2.6	0.889	41.9	LOS D	59.2	425.0	0.90	0.86	26.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	63.1	LOS F	0.2	0.2	0.96	0.96
P11	Across NE approach	53	20.4	LOS C	0.1	0.1	0.54	0.54
P13	Across NW approach	53	62.2	LOS F	0.2	0.2	0.95	0.95
P15	Across SW approach	53	28.1	LOS C	0.1	0.1	0.64	0.64
All Pedestrians		212	43.4	LOS E			0.77	0.77

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 AM Peak
Aikman Drive - Joy Cummng Place

Aikman Drive / Jpy Cummings Place
AM Peak
2012
Signals - Fixed Time Cycle Time = 96 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	1258	2.0	0.896	19.5	LOS B	54.5	388.2	0.85	0.88	37.1
26	R	50	0.0	0.293	31.7	LOS C	1.6	11.2	0.72	0.73	32.0
Approach		1308	1.9	0.896	20.0	LOS B	54.5	388.2	0.85	0.87	36.8
North West: Joy Cummings Place											
27	L	32	0.0	0.442	31.3	LOS C	1.0	7.0	0.71	0.70	32.2
29	R	39	0.0	0.144	47.5	LOS D	1.6	11.4	0.91	0.73	26.0
Approach		71	0.0	0.442	40.2	LOS D	1.6	11.4	0.82	0.72	28.5
South West: Aikman Drive south											
30	L	25	0.0	0.188	47.1	LOS D	1.0	7.2	0.90	0.71	26.1
31	T	282	2.0	0.439	27.0	LOS C	10.4	73.7	0.83	0.71	32.9
Approach		307	1.8	0.439	28.6	LOS C	10.4	73.7	0.84	0.71	32.2
All Vehicles		1686	1.8	0.896	22.4	LOS C	54.5	388.2	0.84	0.84	35.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	42.2	LOS E	0.1	0.1	0.94	0.94
P13	Across NW approach	53	26.3	LOS C	0.1	0.1	0.74	0.74
All Pedestrians		106	34.2	LOS D			0.84	0.84

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 PM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
PM Peak
2012
Signals - Fixed Time Cycle Time = 106 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	149	0.0	0.180	21.7	LOS C	3.9	27.3	0.58	0.75	40.6
3	R	447	0.0	0.850	65.3	LOS E	12.8	89.3	1.00	0.96	23.6
Approach		596	0.0	0.850	54.4	LOS D	12.8	89.3	0.90	0.91	26.3
East: Ginninderra Drive east											
4	L	435	0.0	0.880	42.0	LOS D	42.0	298.0	0.96	1.00	32.6
5	T	1211	3.0	0.880	34.2	LOS C	43.2	310.4	0.97	0.98	35.1
Approach		1646	2.2	0.880	36.3	LOS D	43.2	310.4	0.97	0.98	34.4
West: Ginninderra Drive west											
11	T	543	3.0	0.239	10.7	LOS B	6.5	46.8	0.50	0.43	56.3
12	R	267	0.0	0.611	38.8	LOS D	6.3	44.3	0.96	0.79	32.7
Approach		810	2.0	0.611	20.0	LOS B	6.5	46.8	0.66	0.55	46.2
All Vehicles		3052	1.7	0.880	35.5	LOS D	43.2	310.4	0.87	0.85	34.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	16.4	LOS B	0.1	0.1	0.56	0.56
P2	Across S approach	53	16.4	LOS B	0.1	0.1	0.56	0.56
P3	Across E approach	53	42.6	LOS E	0.1	0.1	0.90	0.90
P4	Across E approach	53	47.2	LOS E	0.2	0.2	0.94	0.94
P7	Across W approach	53	47.2	LOS E	0.2	0.2	0.94	0.94
P8	Across W approach	53	47.2	LOS E	0.2	0.2	0.94	0.94
All Pedestrians		318	36.2	LOS D			0.81	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 PM Peak
Aikman Drive - Joy Cummings Place

Aikman Drive / Jpy Cummings Place
PM Peak
2012
Signals - Fixed Time Cycle Time = 119 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	544	2.0	0.362	4.2	LOS A	9.4	66.8	0.33	0.30	52.3
26	R	28	0.0	0.159	26.0	LOS C	0.9	6.0	0.56	0.70	34.9
Approach		572	1.9	0.362	5.2	LOS A	9.4	66.8	0.34	0.32	51.1
North West: Joy Cummings Place											
27	L	43	0.0	0.577	29.4	LOS C	1.4	10.1	0.57	0.75	33.1
29	R	29	0.0	0.133	59.8	LOS E	1.5	10.8	0.93	0.72	22.7
Approach		72	0.0	0.577	41.6	LOS D	1.5	10.8	0.71	0.74	27.9
South West: Aikman Drive south											
30	L	44	0.0	0.420	60.5	LOS E	2.4	16.6	0.94	0.73	22.5
31	T	282	2.0	0.562	41.2	LOS D	14.2	101.5	0.92	0.78	27.0
Approach		326	1.7	0.562	43.8	LOS D	14.2	101.5	0.92	0.77	26.3
All Vehicles		970	1.7	0.577	20.9	LOS C	14.2	101.5	0.56	0.50	37.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P13	Across NW approach	53	37.9	LOS D	0.1	0.1	0.80	0.80
All Pedestrians		106	45.8	LOS E			0.87	0.87

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 PM Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
PM Peak
2012

Signals - Fixed Time Cycle Time = 127 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	60	0.0	0.901	58.0	LOS E	47.4	339.6	1.00	1.03	24.1
22	T	1352	3.0	0.901	50.0	LOS D	47.4	340.6	1.00	1.03	24.2
23	R	1	0.0	0.011	71.6	LOS E	0.1	0.4	0.97	0.59	20.3
Approach		1413	2.9	0.901	50.4	LOS D	47.4	340.6	1.00	1.03	24.2
North East: Lawson north											
24	L	1	0.0	0.002	18.5	LOS B	0.0	0.1	0.57	0.64	40.1
25	T	1	0.0	0.002	35.0	LOS C	0.0	0.3	0.76	0.45	29.3
26	R	1	0.0	0.011	71.6	LOS E	0.1	0.4	0.97	0.59	20.3
Approach		3	0.0	0.011	41.7	LOS D	0.1	0.4	0.77	0.56	27.7
North West: Ginninderra Drive west											
27	L	1	0.0	0.485	45.7	LOS D	28.0	201.3	0.70	0.92	27.6
28	T	934	3.0	0.485	29.9	LOS C	28.0	201.3	0.70	0.62	31.8
29	R	67	0.0	0.191	38.9	LOS D	1.1	8.0	0.95	0.72	29.0
Approach		1002	2.8	0.485	30.5	LOS C	28.0	201.3	0.72	0.63	31.5
South West: Allawoona Street south											
30	L	155	0.0	0.256	24.9	LOS C	5.5	38.6	0.72	0.78	35.9
31	T	22	0.0	0.256	17.1	LOS B	5.5	38.6	0.72	0.59	37.3
32	R	78	0.0	0.889	85.0	LOS F	5.5	38.8	1.00	0.95	18.1
Approach		255	0.0	0.889	42.6	LOS D	5.5	38.8	0.80	0.81	27.6
All Vehicles		2673	2.6	0.901	42.2	LOS D	47.4	340.6	0.88	0.86	26.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	57.6	LOS E	0.2	0.2	0.95	0.95
P11	Across NE approach	53	22.1	LOS C	0.1	0.1	0.59	0.59
P13	Across NW approach	53	56.7	LOS E	0.2	0.2	0.94	0.94
P15	Across SW approach	53	29.8	LOS C	0.1	0.1	0.69	0.69
All Pedestrians		212	41.6	LOS E			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

APPENDIX B

Lawson Suburb SIDRA Results

Cardno
Shaping the Future

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Our Ref YN110003 Lawson South Master Plan

Date: 6 Dec 2011

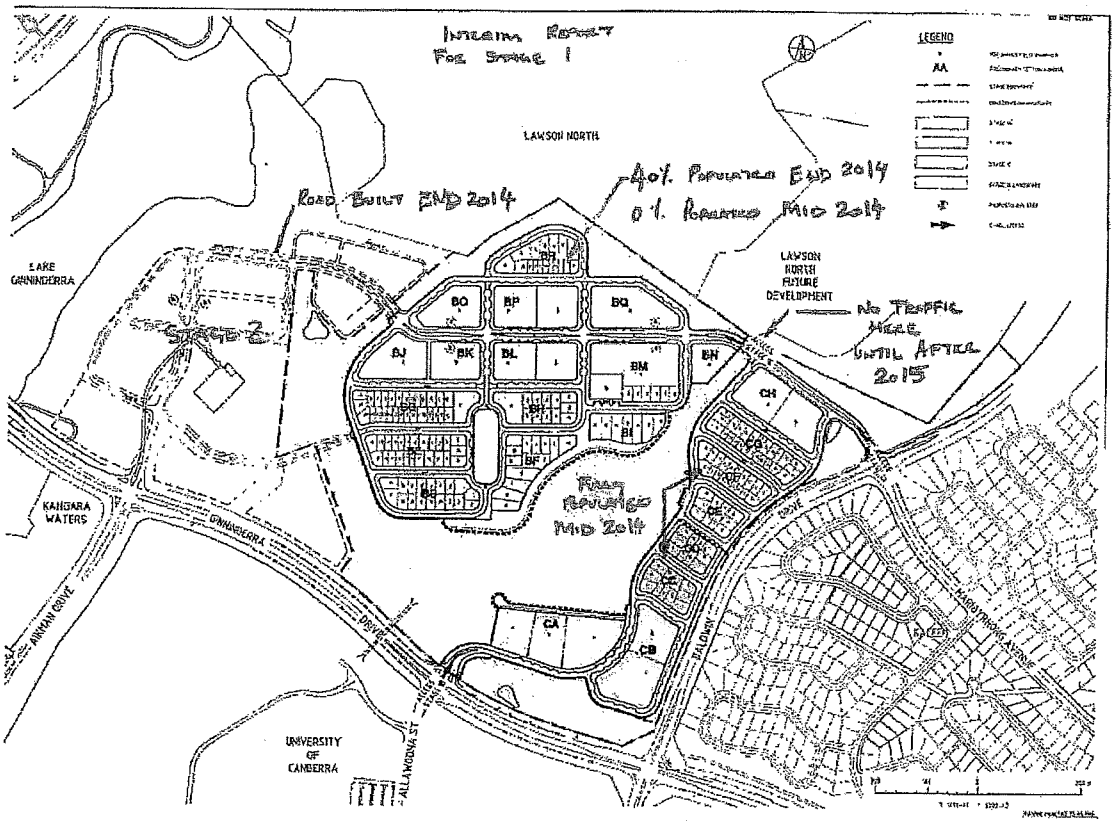
Attn: Ian Patrick

DESIGN NOTE – Lawson South

1.1 Introduction

The design note supplements the Lawson South Masterplanning Study; Traffic Analysis and Road Hierarchy Report, Cardno 2011. It has been prepared following a request to consider the traffic impact of interim development prior to full release on the internal and external road network. The end of 2014 has been assessed, immediately prior to construction of the Road 2 – Road 1 connection, as it is considered to represent the worst case scenario. **Figure 1** illustrates the short term staging plan for Lawson South.

Figure 1 **Interim Staging Plan**



Key aspects to note concerning the 'end of 2014' scenario include:

- There are only two points of entry / exit to Lawson South as Aikman Drive / Ginninderra Drive and Lawson North connections have not yet been constructed
- The eastern portion of Stage 1 is fully released
- The central portion of Stage 1 is 40% released
- Stage 2 is yet to be released

1.2 Traffic Distribution and Generation

Traffic movements have been re-distributed across the network, with the most significant impact occurring at Road 2 / Baldwin Drive / Maribyrnong Avenue. This access represents the most efficient entry to the external road network for the whole of the central portion of Stage 1. As a result, Road 2 facilitates the bulk of re-assigned traffic movements into/out of the development (Road 2 = 2,765 vpd c.f. Road 3 = 1,779 vpd). The total number of external traffic movements generated in 2014 is approximately 4,500 vpd.

The total number of vehicle movements generated by Lawson upon full release is 13,600 vpd, excluding the Lawson North movements (1,400 vpd) which travel through Lawson South.

In order to assess the performance of Road 2 / Baldwin Drive / Maribyrnong Avenue and Road 3 / Ginninderra Drive / Allawoona Street, a background traffic forecast for 2014 is required at these intersections. Background volumes were determined through interpolating between the intersection turn counts obtained as part of the *Lawson Outline Plan; External Traffic Analysis Working Paper, Total Lawson Development (Maunsell 2009)* and the 2021 Canberra Transport Model (EMME) forecast.

1.3 Intersection Analysis

Figures 2 – 5 summarise the intersection performance of Road 2 / Baldwin Drive / Maribyrnong Avenue and Road 3 / Ginninderra Drive / Allawoona Street in 2014 and 2021 during both peak periods. Complete Sidra Movement Summaries are appended to this report.

Figure 2 2014 AM Performance Summary

Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	1.000	63.7	LOS E
Baldwin Drive/Maribyrnong Avenue	>1.000	72.1	LOS F

Figure 3 2021 AM Performance Summary

Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	>1.000	286.8	LOS F
Baldwin Drive/Maribyrnong Avenue	1.000	69.1	LOS E

Figure 4 2014 PM Performance Summary

Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	1.000	75.8	LOS F
Baldwin Drive/Maribyrnong Avenue	1.000	33.7	LOS C

Figure 5 2021 PM Performance Summary

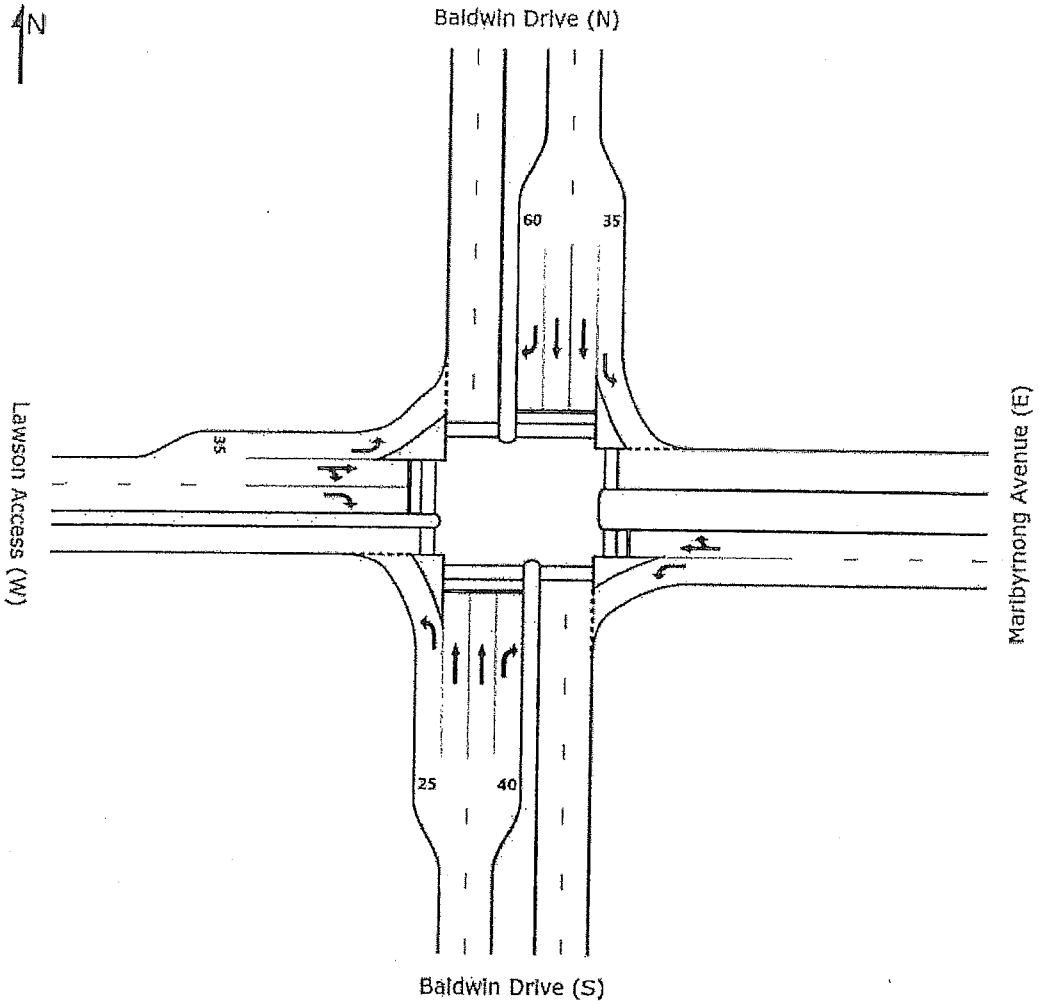
Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	>1.000	611.2	LOS F
Baldwin Drive/Maribyrnong Avenue	1.000	28.6	LOS C

Some inconsistencies were observed between the counts undertaken in 2009 and the Canberra Transport Model 2021 forecast; in particular a significant drop in right turning vehicles on the Baldwin Drive (South) right turn movement, however in the main the 2014 scenario represented a small increase in vehicle movements over the 2009 observed volumes. An update to the EMME model in this region, accommodating current planning intentions of nearby landuses such as University of Canberra is recommended to provide greater clarity concerning future volumes along Baldwin Drive and Ginninderra Drive.

Road 3 / Ginninderra Drive / Allawoona Street performs unsatisfactorily primarily due to capacity constraints on Ginninderra Drive and Allawoona Street.

Road 2 / Baldwin Drive / Maribyrnong Avenue (illustrated in **Figure 6**) performs satisfactorily during the PM peak period, however is at capacity during the AM peak period. The phasing adopted is in line with signalised plan S-251-3 (Roads ACT, 2009). Alternative phasing arrangements were tested, including a Single Diamond Overlap (SDO) arrangement on the Baldwin Drive approaches, however the performance was not improved.

Figure 6 **Road 2 / Baldwin Drive / Maribyrnong Avenue**

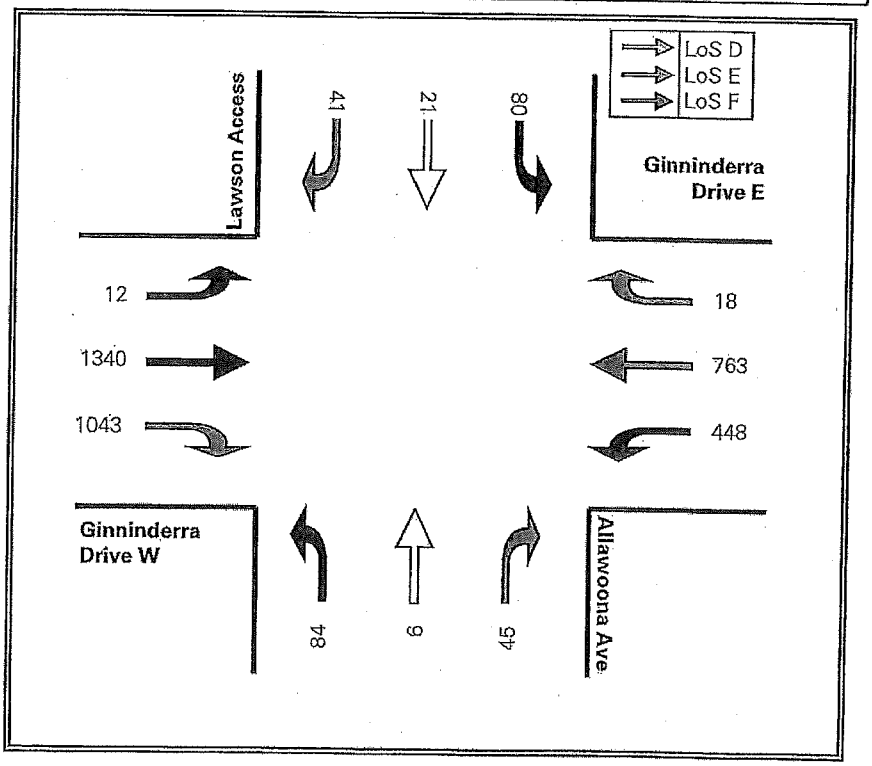


Attachments: Peak period Sidra movement summaries.

Ginninderra Drive/Allawoona Ave AM: 2014 AM

Signals

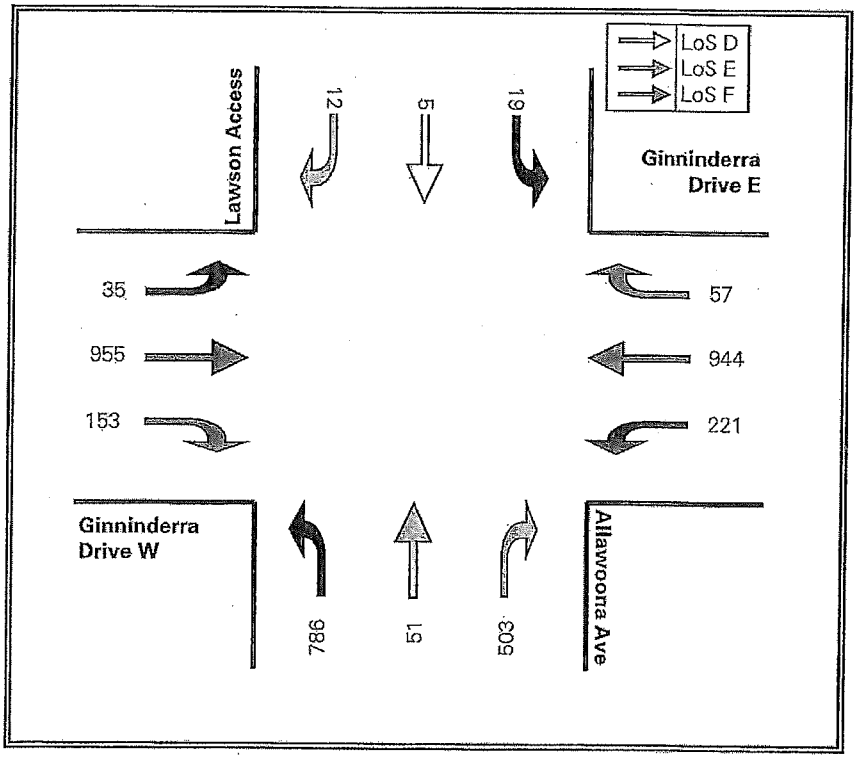
Movement	Light Vehicles	Heavy Vehicles	DoS	Delay (s)	LoS	95% Back of Queue (m)
Allawoona Ave						
Left	81	3	0.244	20.5	LOS B	24
Through	6	0	0.018	49.5	LOS D	4
Right	44	1	0.605	85.9	LOS F	34
Approach	**131**	**4**	**0.605**	**43.6**	**LOS D**	**34**
Ginninderra Drive E						
Left	435	13	1.000	22.6	LOS B	78
Through	740	23	0.997	122.0	LOS F	384
Right	17	1	0.248	84.4	LOS F	15
Approach	**1192**	**37**	**1.000**	**98.3**	**LOS F**	**384**
Lawson Access						
Left	78	2	0.383	20.6	LOS B	26
Through	20	1	0.032	49.8	LOS D	7
Right	40	1	0.552	85.4	LOS F	31
Approach	**138**	**4**	**0.552**	**43.6**	**LOS D**	**31**
Ginninderra Drive W						
Left	12	0	0.008	10.1	LOS A	0
Through	1300	40	0.708	23.9	LOS B	267
Right	1012	31	1.000	85.0	LOS F	408
Approach	**2324**	**71**	**1.000**	**48.2**	**LOS D**	**408**
All Vehicles	**3785**	**116**	**1.000**	**63.7**	**LOS E**	**408**



Ginninderra Drive/Allawoona Ave PM: 2014 PM

Signals

Movement	Light Vehicles	Heavy Vehicles	DoS	Delay (s)	LoS	95% Back of Queue (m)
Allawoona Ave						
Left	762	24	1.000	21.7	LOS B	78
Through	49	2	0.881	57.7	LOS E	276
Right	488	15	0.849	61.0	LOS E	261
Approach	**1299**	**41**	**1.000**	**49.8**	**LOS D**	**276**
Ginninderra Drive E						
Left	214	7	0.266	10.5	LOS A	14
Through	916	28	0.982	107.4	LOS F	365
Right	55	2	0.662	86.0	LOS F	42
Approach	**1185**	**37**	**0.982**	**88.9**	**LOS F**	**365**
Lawson Access						
Left	18	1	0.100	35.0	LOS C	9
Through	5	0	0.008	51.9	LOS D	2
Right	12	0	0.058	61.8	LOS E	8
Approach	**35**	**1**	**0.100**	**46.3**	**LOS D**	**9**
Ginninderra Drive W						
Left	34	1	0.026	10.7	LOS A	3
Through	926	29	0.968	96.0	LOS F	340
Right	148	5	0.887	94.4	LOS F	57
Approach	**1108**	**35**	**0.968**	**93.2**	**LOS F**	**340**
All Vehicles	**3627**	**114**	**1.000**	**75.8**	**LOS F**	**365**



Fawcett, Alice (Health)

From: [redacted]
Sent: Monday, 13 April 2015 11:29 AM
To: Hocking, Chris
Cc: True, Phil
Subject: UC Public Hospital - Aikman Dr Intersection Concept Layout & TIA

Chris,

Further to our discussion last week, please follow the link below to find attached a concept of the Aikman Drive intersection and the new road into the UC Public Hospital. Also included in the link is a copy of the Traffic Impact Assessment we prepared in 2013 for UCPH.

[redacted] – no longer accessible 30/4/15

I've copied in Phil True from SSP who engaged us to undertake the above.

Regards

[redacted]
Calibre Consulting (ACT) Pty Ltd
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601
GPO Box 261, Canberra, ACT, 2601
[redacted]
www.calibreconsulting.co

Fawcett, Alice (Health)

From: Roulston, David
Sent: Friday, 1 May 2015 1:18 PM
To: True, Phil
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen; Gray, Sophie
Subject: RE: Meeting

Phil this is a key starting point and captures the three key issues as it currently stands. As agreed our Supported with Conditions for the DA will be sent back to ACTPLA today.

Regards,

David

DAVID ROULSTON AIPM CPPD
DIRECTOR ASSET INFORMATION AND MANAGEMENT SERVICES AND CAPITAL WORKS COORDINATOR |
INFRASTRUCTURE, ROADS AND PUBLIC TRANSPORT DIVISION |
TERRITORY AND MUNICIPAL SERVICES DIRECTORATE | ACT GOVERNMENT
PH: +61 2 6207 6628 [redacted] FAX: +61 2 6207 7484 |
david.roulston@act.gov.au

"One Government One ACT Public Service"

" Using innovation and imagination let's do more with what we have" *Kim Smith GIS Day ACT Government*

From: True, Phil
Sent: Friday, 1 May 2015 9:45 AM
To: Roulston, David
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen; Gray, Sophie
Subject: RE: Meeting

David,

Thanks and to summarise the information which we will hope to clarify with your team is :-

(1) Understanding of the commitments made within the Acquisition & Development Deed made between the Territory & UC (as regards road position & car parking arrangements)

(2) The recent inclusion for the potential of "on site" parking for the hospital i.e. currently indicated on the concept drawings as 250 underground & 60 above ground

(3) Potential additional traffic analysis on the three car park locations indicated feeding onto the new Hospital road and implications on traffic flow both internally & volume onto Ginninderra

(4) Potential design of the new access/crossing to Aikman drive to incorporate "future" proofing for the potential duelling of this road and implications on the overall construction period of the Hospital build ie. timing considerations should it go ahead.

(5) Bus route currently shown on the PSP design is based on a theoretical road design which may not eventuate - risk mitigation could be to potentially modify the internal bus stop / drop off area to allow the bus to re-route back to Aikman drive as currently no ACTION buses run along Ginninderra at this location.

(6) Position on recently submitted business case in connection with overall UC parking strategy.

Best Regards
Philip

From: Roulston, David
Sent: Friday, 1 May 2015 9:25 AM
To: True, Phil
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen
Subject: RE: Meeting

Phil,

That sounds great and we are very happy to provide as much support as is required to reduce the impacts of our discussion and to reduce the amount of any rework throughout the next phase when you have an assigned a prime contractor and subsequent design consultant

Regards,

David

DAVID ROULSTON AIPM CPPD
DIRECTOR ASSET INFORMATION AND MANAGEMENT SERVICES AND CAPITAL WORKS COORDINATOR |
INFRASTRUCTURE, ROADS AND PUBLIC TRANSPORT DIVISION |
TERRITORY AND MUNICIPAL SERVICES DIRECTORATE | ACT GOVERNMENT
PH: +61 2 6207 6628 [redacted] FAX: +61 2 6207 7484 |
david.roulston@act.gov.au

"One Government One ACT Public Service"

" Using innovation and imagination let's do more with what we have" *Kim Smith GIS Day ACT Government*

From: True, Phil
Sent: Friday, 1 May 2015 9:18 AM
To: Roulston, David
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen
Subject: Meeting

Morning Dave,

Great to meet you and your team yesterday and we look forward to working with your good selves in the coming months on development of the wider understanding & implications of the scheme as a whole within the ACT transport network – including of course further work in consideration of the bus routing etc . I have just tried to

contact Joël Stevenson so we can set up the first of our co-ordination meetings however, he is on leave until mid week next. We will schedule a meeting accordingly upon his return.

Best Regards
Philip

Phil True, Snr. Project Manager, Health Infrastructure, Procurement and Capital Works
Phone 02 617 48092 | Fax 02 617 48092 | Mobile [redacted]
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 1 Building 23, The Canberra Hospital, Yamba Drive, Garran, ACT 2605| PO Box 818, Dickson, ACT 2602
www.act.gov.au

Fawcett, Alice (Health)

From: Joseph, Gabriel
Sent: Tuesday, 12 May 2015 1:26 PM
To: Collins, Jen
Cc: True, Phil; Jatheendran, Lingam
Subject: RE: UCPH - Bus Turnaround information

Jen

I have had some preliminary discussion with ACTION after the meeting. Our initial view is that the current sharp bend at the corner will not accommodate the bus turning movement. It needs to be widened significantly to accommodate the buses. Currently we design all bus turning movements to accommodate the steer-tag busses. They have very large turning circles and therefore not be feasible for the hospital facility. The next one down is the rigid buses. However, the rigid buses comes with bike racks and the turning circles are still larger. If we are to have a bus service that comes through the new public road around the facility we have to design a three to five intersections for the buses to enter from Aikman, do a loop and come back to Aikman. This will require significant land take for turning. In addition, the buses can make the general operation of this road very complicated if the road Is also to be used as entry and exit to three car parks.

Do you still want to pursue this option?

Regards

GABRIEL JOSEPH
SENIOR MANAGER ASSET ACCEPTANCE
IAMS | IRAPT | TAMS | ACT GOVERNMENT
PH: +61 2 6207 6581 | FAX: +61 2 6207 7484 |
gabriel.joseph@act.gov.au
"GREAT SERVICES- QUALITY ASSETS- BETTER LIFESTYLE"

From: Collins, Jen
Sent: Tuesday, 12 May 2015 11:16 AM
To: Joseph, Gabriel
Cc: True, Phil
Subject: UCPH - Bus Turnaround information

Dear Gabriel,

As you are aware from our recent meeting, we are half way through an interactive bidding process (IBP) with the three shortlisted head contractors. Throughout the process the shortlisted head contractors are refining the reference design (our 100% PSP design).

We are keen to provide them with some instructions on the design of the bus turnaround as soon as possible. Although they will be provided with the DA conditions, this won't be until 12 June 2015, our tender closes on 18 June 2015, which would not provide them with sufficient time to incorporate a bus turnaround into their designs.

We intend to incorporate this excerpt from the request for further information received from TAMS via ACTPLA:

Please clarify how it is intended for public transport to service the proposed facility, noting access to Ginninderra Drive by buses via left in and left out cannot be supported. Please also clarify whether ACTION buses will be able to negotiate the sharp bends within the site.

In addition to this are there any specific technical guidelines or ACTION requirements that we should point them to?

Kind regards,
Jen.

Jen Collins | Health Infrastructure, Procurement and Capital Works
Phone 02 6174 7797 | Fax 02 6121 0433
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 1 Building 23, The Canberra Hospital, Yamba Drive, Garran, ACT 2605| PO Box 818, Dickson, ACT 2602 | www.act.gov.au

Work days: Monday - Thursday

Fawcett, Alice (Health)

From: [redacted]
Sent: Tuesday, 18 August 2015 11:57 AM
To: True, Phil
Subject: FW: UCPH hospital - Extension to Pantowora St
Attachments: [redacted]

FYI

Regards,
[redacted]

From: [redacted]
Sent: Tuesday, 18 August 2015 11:32 AM
To: [redacted]
Cc: [redacted]
Subject: UCPH hospital - Extension to Pantowora St

[redacted]

[redacted]

Regards,
[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, 18 August 2015 10:03 AM
To: [redacted]
Subject: Fwd: UCPH hospital

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Sent from my iPhone

Begin forwarded message:

From: [redacted]
Date: 18 August 2015 09:10:39 GMT+10
To: [redacted]
Subject: FW: UCPH hospital

P, Paul Carmody also called after-hours yesterday. He'd like you to call him please on 6205 0877. G

From: Carmody, Paul (Health) [mailto:Paul.Carmody@act.gov.au]
Sent: Monday, 17 August 2015 6:16 PM
To: [redacted]
Cc: [redacted] Wise, Tim (Health)
Subject: FW: UCPH hospital

[redacted]

Further to our meeting last week, Tim Wise and I met with Paul Peters and Tony Gill this afternoon to discuss the duplication of Aikman Drive and also a possible link road to Pantoworra Street. The outcome of the meeting is referred to below.

To proceed the discussion would you be able to provide a plan of the link road that we could provide to Paul?

regards

Paul Carmody
Deputy Director-General
Health Planning and Infrastructure
Phone: (02) 6205 0907 | Mobile: [redacted] | Email: Paul.Carmody@act.gov.au

From: Peters, Paul
Sent: Monday, 17 August 2015 5:09 PM
To: Carmody, Paul (Health)
Cc: Wise, Tim (Health); True, Phil; Elsey, Melissa (Health); Gill, Tony; McGlinn, Ian
Subject: UCPH hospital

Hi Paul,

Thanks for meeting today.

Re the link to Pantowora St –

Our definite preference from a public transport viewpoint would be to continue the link through to Pantowora St.

We may be able to design the link (and probably construct it) as part of the Aikmann Drive work subject to agreement with the Uni and sorting out funding and any other approval issues.

The intersection with Ginninderra Drive at Allawoona St looks fine from an operational perspective.

If you had a plan with the original link to Pantowora St on it we might be able to get a better idea of cost which might better inform a decision.

Regards

Paul Peters
Executive Director
Infrastructure, Roads and Public Transport

Territory and Municipal Services

Ph (02) 6207 0738

Fawcett, Alice (Health)

From: Joseph, Gabriel
Sent: Friday, 15 May 2015 7:30 AM
To: Joel Stevenson; True, Phil
Cc: Collins, Jen; Cloos, Karl; Zeta, Darwin; Pincombe, Neil; Hocking, Chris; James Mason
Subject: RE: Aikman Drive Duplication and Intersection Upgrade - Calibre Action Items

Thanks Joel,

Phil

Some corrections as indicated below.

Regards

GABRIEL JOSEPH
SENIOR MANAGER ASSET ACCEPTANCE
IAMS | IRAPT | TAMS | ACT GOVERNMENT
PH: +61 2 6207 6581 | FAX: +61 2 6207 7484 |
gabriel.joseph@act.gov.au
'GREAT SERVICES- QUALITY ASSETS- BETTER LIFESTYLE'

From [redacted]
Sent: Thursday, 14 May 2015 5:23 PM
To: True, Phil
Cc: Collins, Jen; Joseph, Gabriel; Cloos, Karl; Zeta, Darwin; Pincombe, Neil; Hocking, Chris; [redacted]
Subject: Aikman Drive Duplication and Intersection Upgrade - Calibre Action Items

[redacted]

Can you please confirm your agreement of the above.

Regards

[redacted]

Calibre Consulting (ACT) Pty Ltd
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601
GPO Box 261, Canberra, ACT, 2601
[redacted]

Fawcett, Alice (Health)

From: Hocking, Chris
Sent: Wednesday, 27 May 2015 5:13 PM
To: True, Phil
Cc: Collins, Jen; Cloos, Karl; Pincombe, Neil; Zeta, Darwin; Joseph, Gabriel; McHugh, Ben; Gill, Tony; Roulston, David; Badgery, Alex (Health)
Subject: Aikman Drive duplication: Traffic Impact Assessment and feasibility study
Attachments: Calibre Proposal.pdf; 20150514. Minutes.doc

Hi Phil,

Aikman Drive duplication: Traffic Impact Assessment and feasibility study

Roads ACT approves the 'optional services' component of the attached Aikman Drive proposal up to a maximum of [redacted] Extract from proposal below.

[redacted]

Attached also are final minutes from our discussion on 14 of May 2015.

Roads ACT are happy to assist in supporting yourselves, in getting the other elements of the attached proposal supported by the Health Directorate.

Regards

Chris.

Chris Hocking
CAPITAL WORKS OFFICER | TERRITORY AND MUNICIPAL SERVICES DIRECTORATE
TRANSPORT AND INFRASTRUCTURE DIVISION | ROADS ACT | STRATEGIC PLANNING AND DEVELOPMENT
Mailing Address: Locked Bag 2000, CIVIC SQUARE ACT 2608
☎ PHONE: +61 2 6205 9676
FAX: +61 2 6207 6587
✉ E-MAIL: chris.hocking@act.gov.au

Calibre Consulting (ACT) Pty Ltd
Level 6, 121 Marcus Clarke Street
Canberra ACT 2601
GPO Box 261
Canberra ACT 2601
[redacted]
ABN 36 109 434 540

Our Ref: 15-001126 UCPH Aikman Drive Intersection Upgrade Feasibility - Proposal.docx
Contact: Phil True

18 May 2015

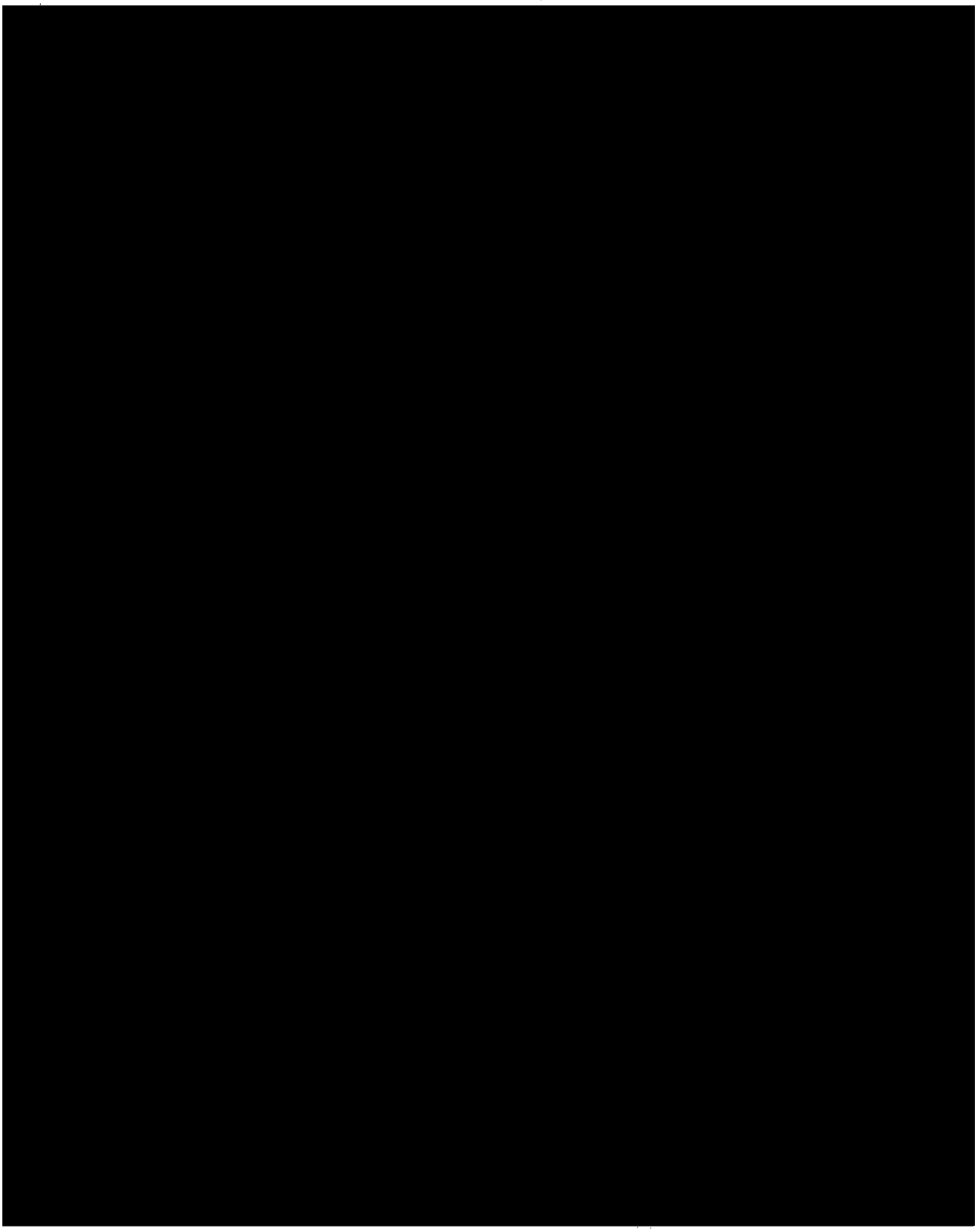
Procurement and Capital Works
TCH Campus Building 23
Hospital Road
Garran ACT 2605

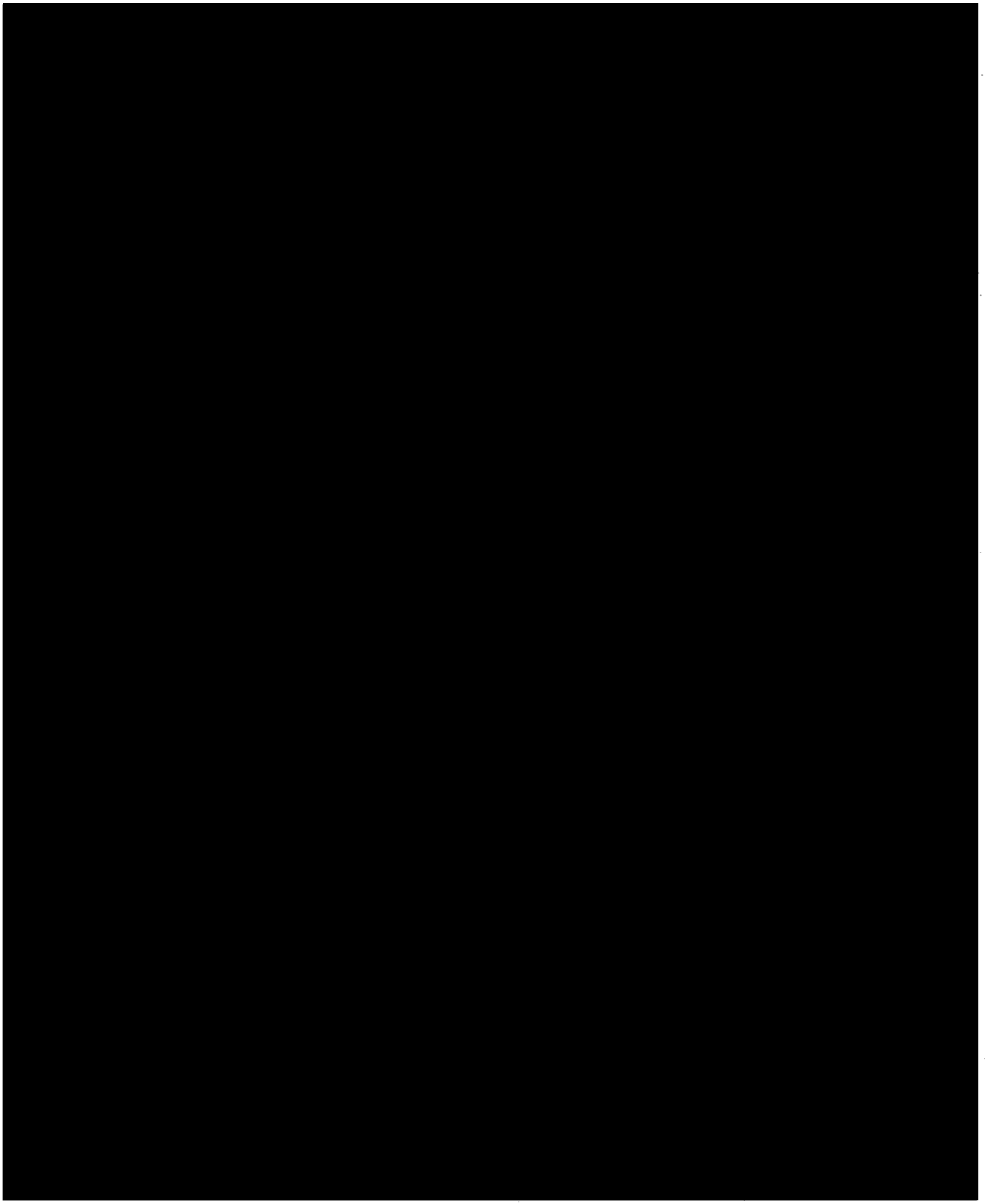
Attention: Phil True

Dear Phil

Proposal for UCPH Aikman Drive Intersection Upgrade Feasibility

[redacted]





Aikman Drive duplication and UC Hospital Development 14 May 2015

Meeting minutes

Meeting details
10:15am to 11:30am. Canberra Hospital Woden, Building 23, L2, UCPH Conference Room

Meeting attendees

Karl Cloos – (KC) – TAMS Roads ACT Strategic Planning and Development
Jen Collins (JC) – Procurement and Capital Works
Gabriel Joseph (GJ) TAMS Asset Acceptance
[redacted]
Neil Pincombe (NP) – TAMS Roads ACT Strategic Planning and Development
Chris Hocking (CH) – TAMS Roads ACT Strategic Planning and Development
Phil True (PT) – Procurement and Capital Works
Darwin Zeta (DZ) – TAMS Roads ACT Strategic Planning and Development

Apologies
Ben McHugh (BM) – TAMS Capital Works Design and Development
David Roulston (DR) - TAMS Operational Support and Capital Works Coordination

Discussion summary

1 Welcome and introduction

PT welcomed the meeting group and provided a summary of the University of Canberra's imminent Hospital Development (UC Hospital).

2 Background

PT explained the reason for Roads ACT involvement in this meeting as guidance regarding the re-design of the intersection of Aikman Drive and the UC Hospital's access road.

PT explained that Aikman Drive intersection with UC access road was originally designed as one lane in each direction, however following the last meeting with TAMS (GJ, DR and CH) on 30 April 2015 where TAMS explained of an interest in duplicating the entire length of Aikman Drive, PCW are now looking to engage Calibre consulting to, at a minimum design the UC access road intersection with Aikman Drive to accommodate a fully duplicated Aikman Drive.

3 Current position

KC noted that Aikman Drive duplication was not currently well developed on the Roads ACT capital works program and that traditionally projects could take up to three years from inception to capital financing.

PT explained that the UC Hospital Development was aiming for an October 2017 construction completion date with an early 2018 Hospital Operation date.

CH explained, that if the ACT Government (via Roads ACT) were going to achieve a fully duplicated Aikman Drive to coincide with the opening of the UC Hospital Development a bid for capital funding would be required in the 16-17 *The Capital Framework* budget bidding process.

CH explained that, should the full duplication of Aikman Drive be considered a Roads ACT priority, then Road ACT would need to prioritise the release of:

- Feasibility and prelim design funding in June 2015 – study complete September 2015
    - The above study is essential in developing a 16-17 capital funding bid

- Forward Design funding around October 2015 – Designs complete June 2016

4 Going forward

PT explained that PCW had invited Calibre consulting to today's meeting with the intention asking Calibre to assist with design of the Aikman Drive intersection.

DZ explained that a minimum (yet not desirable) scenario from Roads ACT perspective would be the design of and construction of preliminary earthworks to accommodate a fully duplicated scenario.

GJ explained that the UC Hospital ring road must be designed as a minor collector as defined in the Estate Development Code.

GJ explained that the UC Hospital ring road should be tested with turning circles for a rigid bus with bike racks to enter from and exit through Aikman Drive/UC Hospital Access road intersection

DZ stressed the importance of supporting justification for the Aikman Drive duplication: 'A statement of the need for the duplication'. DZ explained that traditional duplication demand analysis parameters include existing and proposed traffic volumes, analysis of different vehicle movements and requirements, intersection analysis, safety risk as well as crash data.

There appeared to be collective consensus from the meeting that, subject to 16-17 *The Capital Framework* funding and supporting duplication demand analysis, it would be ideal for the ACT Government to have completed construction of the full duplication of Aikman Drive complete prior to the construction completion of the UC Hospital Development around October 2017.

Actions

[redacted]

4.2 Roads ACT

The meeting group collective agreed to prepare a briefing paper up the chain to Executive Director Roads ACT Public Transport (Paul Peters) seeking funding direction on option action 4.1.5 Aikman Drive duplication feasibility design and cost estimate, to coincide with 16-17 *The Capital Framework* budget bidding processes.

4.3 Procurement and Capital Works

PCW to liaise with Road ACT again prior to making a decision on the Calibre proposal.

Meeting close 11.30am

Fawcett, Alice (Health)

From: Hocking, Chris
Sent: Tuesday, 11 August 2015 10:16 AM
To: [redacted]
Cc: Collins, Jen; True, Phil; Wise, Tim (Health); Jollon, Michael; Zeta, Darwin; Pincombe, Neil; McHugh, Ben
Subject: FW: 15-001126 Aikman Drive Intersection - Draft Feasibility Study Report
Attachments: 15-001126 Aikman Drive_Joy Cummings Place_UCPH Access Feasibility Report (Rev 0 Draft).pdf

same attachment.

Thanks [redacted]

ACT Government will review and provide collective comment, over the coming week(s).

The draft report looks good, is clear and is well structured.

To my mind the principle shortcoming of the draft is the 'needs assessment' for construction of option five within the next 24 months – as this looks like a reasonable option..

Regards

Chris.

Chris Hocking
CAPITAL WORKS OFFICER | TERRITORY AND MUNICIPAL SERVICES DIRECTORATE
TRANSPORT AND INFRASTRUCTURE DIVISION | ROADS ACT | STRATEGIC PLANNING AND DEVELOPMENT
Mailing Address: Locked Bag 2000, CIVIC SQUARE ACT 2608
☎ **PHONE:** +61 2 6205 9676
🖷 **FAX:** +61 2 6207 6587
✉ **E-MAIL:** chris.hocking@act.gov.au

From: [redacted]
Sent: Monday, 10 August 2015 4:32 PM
To: Collins, Jen
Cc: Hocking, Chris
Subject: 15-001126 Aikman Drive Intersection - Draft Feasibility Study Report

Hi Jen,

Re: Aikman Drive Intersection

Please find attached our draft feasibility study report.

[redacted]

Regards

[redacted]

Calibre Consulting (ACT) Pty Ltd
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601
GPO Box 261, Canberra, ACT, 2601

[redacted]

Fawcett, Alice (Health)

From: Hocking, Chris
Sent: Monday, 17 August 2015 4:31 PM
To: Collins, Jen
Cc: True, Phil; Wise, Tim (Health); Pincombe, Neil; Jollon, Michael; Zeta, Darwin; McHugh, Ben; Gill, Tony; Cloos, Karl
Subject: Aikman Drive duplication – EPO presentation
Attachments: Aikman Drive EPOv3.pptx

Hi all,

Aikman Drive duplication – EPO presentation

Please find attached final Aikman Drive duplication presentation for tomorrow.

Regards

Chris.

Chris Hocking
CAPITAL WORKS OFFICER | TERRITORY AND MUNICIPAL SERVICES DIRECTORATE
TRANSPORT AND INFRASTRUCTURE DIVISION | ROADS ACT | STRATEGIC PLANNING AND DEVELOPMENT
Mailing Address: Locked Bag 2000, CIVIC SQUARE ACT 2608
☎ **PHONE:** +61 2 6205 9676
🖷 **FAX:** +61 2 6207 6587
✉ **E-MAIL:** chris.hocking@act.gov.au

Fawcett, Alice (Health)

From: Carmody, Paul (Health)
Sent: Monday, 17 August 2015 6:09 PM
To: Peters, Paul
Cc: Wise, Tim (Health); True, Phil; Elsey, Melissa (Health); Gill, Tony; McGlinn, Ian
Subject: RE: UCPH hospital

Hi Paul,

Thank you for your email and time today.

I will discuss with the UC and get back to you with a plan.

[redacted]

Regards

Paul Carmody
Deputy Director-General
Health Planning and Infrastructure
Phone: (02) 6205 0907 | Mobile: [redacted] | Email: Paul.Carmody@act.gov.au

ACT Government Health

From: Peters, Paul
Sent: Monday, 17 August 2015 5:09 PM
To: Carmody, Paul (Health)
Cc: Wise, Tim (Health); True, Phil; Elsey, Melissa (Health); Gill, Tony; McGlinn, Ian
Subject: UCPH hospital

Hi Paul,

Thanks for meeting today.

Re the link to Pantowora St –

Our definite preference from a public transport viewpoint would be to continue the link through to Pantowora St.

We may be able to design the link (and probably construct it) as part of the Aikmann Drive work subject to agreement with the Uni and sorting out funding and any other approval issues.

Off-set would be not needing the bus turn around and getting a much better bus service.

The intersection with Ginninderra Drive at Allawoona St looks fine from an operational perspective.

If you had a plan with the original link to Pantowora St on it we might be able to get a better idea of cost which might better inform a decision.

[redacted]

Regards

Paul Peters
Executive Director
Infrastructure, Roads and Public Transport

Territory and Municipal Services

Ph (02) 6207 0738

Fawcett, Alice (Health)

From: Collins, Jen
Sent: Wednesday, 9 September 2015 5:26 PM
To: Wise, Tim (Health); True, Phil
Cc: Macri, Sam; Harman, Maria (Health); Polkinghorn, Bindi (Health); Oughton, Andy
Subject: FW: 15-001126 Aikman Drive Intersection - Feasibility Study Report
Attachments: 15-001126 Aikman Drive_Joy Cummings Place_UCPH Access Feasibility Report (combined).pdf same attachment as previous email.

Hi Team,
Please find attached the Aikman Drive Intersection Feasibility Report, which has also been provided to Roads ACT. Let me know if you have any questions or comments.
Cheers,
Jen.

From: [redacted]
Sent: Tuesday, 8 September 2015 4:48 PM
To: Collins, Jen
Cc: Hocking, Chris
Subject: RE: 15-001126 Aikman Drive Intersection - Feasibility Study Report

Hi Jen,

Please find attached an amended version of the report in response to your comments below.

[redacted]

Regards

[redacted]

Calibre Consulting (ACT) Pty Ltd
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601
GPO Box 261, Canberra, ACT, 2601
[redacted]
www.calibreconsulting.co

From: Collins, Jen [mailto:Jen.Collins@act.gov.au]
Sent: Monday, 7 September 2015 2:39 PM
To: [redacted]
Subject: RE: 15-001126 Aikman Drive Intersection - Feasibility Study Report

Hi [redacted]

Thanks for sending though the update. Overall the report is looking great, thank you. I just have a few points I'd like to discuss, but haven't been able to catch you on the phone, could you give me a ring to discuss the points below when you're free?

- 1 EXECUTIVE SUMMARY:
  Include some discussion to acknowledge that Option 2 will adequately support the needs of the hospital, but is less favourable in terms of redundant work etc.

- P10. 3.4: ...with residential development in occurring in Lawson...
- TABLE 5-1: LOS Criteria
  Is the 'average delay' the average/normal wait time at the intersection?
- TABLE 6-1: Opinion of Cost
  Under which heading are mains relocation costs indicated?
- 7.2 RECCOMENDATION:
  Add in a short statement at the end to also acknowledge that Option 2 will adequately support the needs of the hospital.

Thanks,
Jen.

From: [redacted]
Sent: Friday, 4 September 2015 4:47 PM
To: Collins, Jen
Cc: Hocking, Chris
Subject: 15-001126 Aikman Drive Intersection - Feasibility Study Report

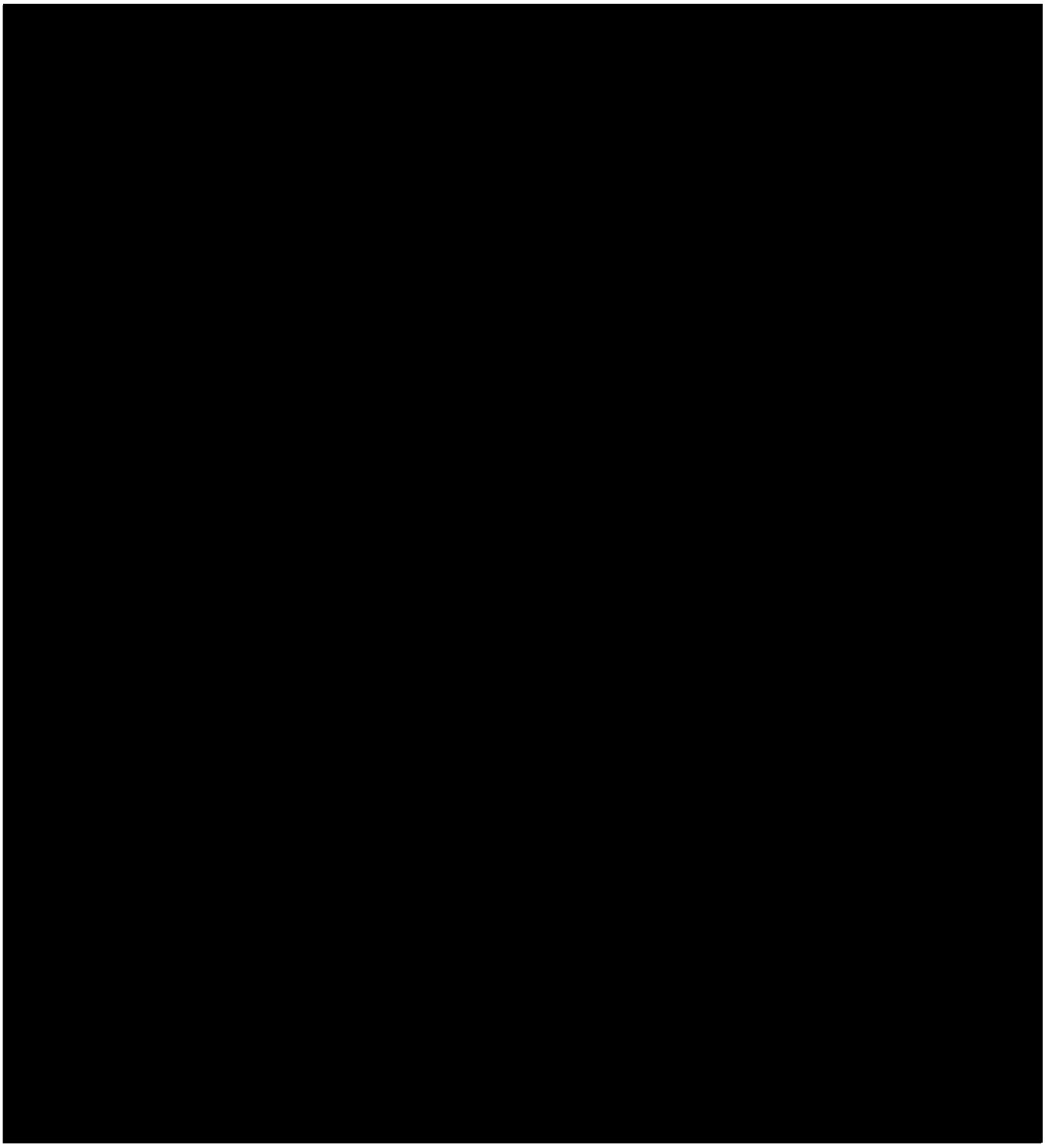
Hi Jen,

Re: Aikman Drive Intersection

Please find attached the amended feasibility study report.

Regards

[redacted]
Calibre Consulting (ACT) Pty Ltd
Level 6,121 Marcus Clarke Street, Canberra City, ACT, 2601
GPO Box 261, Canberra, ACT, 2601
[redacted]



Fawcett, Alice (Health)

From: [redacted]
Sent: Wednesday, 11 November 2015 9:30 AM
To: True, Phil
Cc: Macri, Sam
Subject: RE: UCPH Roads
Attachments: AA03-0001_2.pdf; AA10-0100_2.pdf

Hi Phil,

Thank for forwarding the below as background information.

In relation to the current design of the roads, bus route, bus stops - have you got an more current drawings than the attached?

Regards,

[redacted]

From: True, Phil [mailto:Phil.True@act.gov.au]
Sent: Tuesday, 10 November 2015 10:24 AM
To: [redacted] Wise, Tim (Health)
Cc: Macri, Sam
Subject: FW: UCPH Traffic Report

[redacted]

The below is TAMS position on the existing road layout & traffic volume. I'm sending you this as it remains their position i.e. no other vehicles other than the quantum identified in the DA are allowed to use this "Hospital" new road.

I will call you on this matter just to clarify the genesis of this decision as it was some time ago however, their position remains.

Phil True, Snr. Project Manager, Health Infrastructure, Procurement and Capital Works
Phone 02 617 48092 | Fax 02 617 48092 | Mobile [redacted]
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 1 Building 23, The Canberra Hospital, Yamba Drive, Garran, ACT 2605| PO Box 818, Dickson, ACT 2602
www.act.gov.au

From: Jatheendran, Lingam
Sent: Thursday, 23 January 2014 4:28 PM
To: True, Phil; Badgery, Alex (Health); Joseph, Gabriel
Subject: UCPH Traffic Report

Hi Phil

Further to the email from Gabriel Joseph, Senior Manager, AA, TAMS. Asset Acceptance endorses the proposed intersection layout plan in principle based on the traffic analysis carried out by Browns Consulting.

Please note that this endorsement in principle is provided on the basis of excluding any future traffic generated by developments proposed in the UC Master Plan. Therefore the proposed road will not cater for any additional traffic generated by the land use within the University Campus or a connection to the University internal road network, as these will reduce the capacity and performance of the new intersection on Ginninderra Drive beyond the acceptable level of service.

If and when the situation is changed and the proposed road is required to carry additional traffic from UC, a new traffic study must be carried out and all improvement measures identified to accommodate the additional traffic must be implemented before the road is opened to additional traffic.

If you need any clarification on the above please do not hesitate to contact me."

Regards

Lingam Jatheendran
Chief Engineer
Asset Acceptance Section | Operational Support Branch | Directorate Services Division
Territory & Municipal Services Directorate (TAMS) | ACT Government

☎Ph: (02) 6207 6592 | 🖷 Fax: (02) 6207 7484

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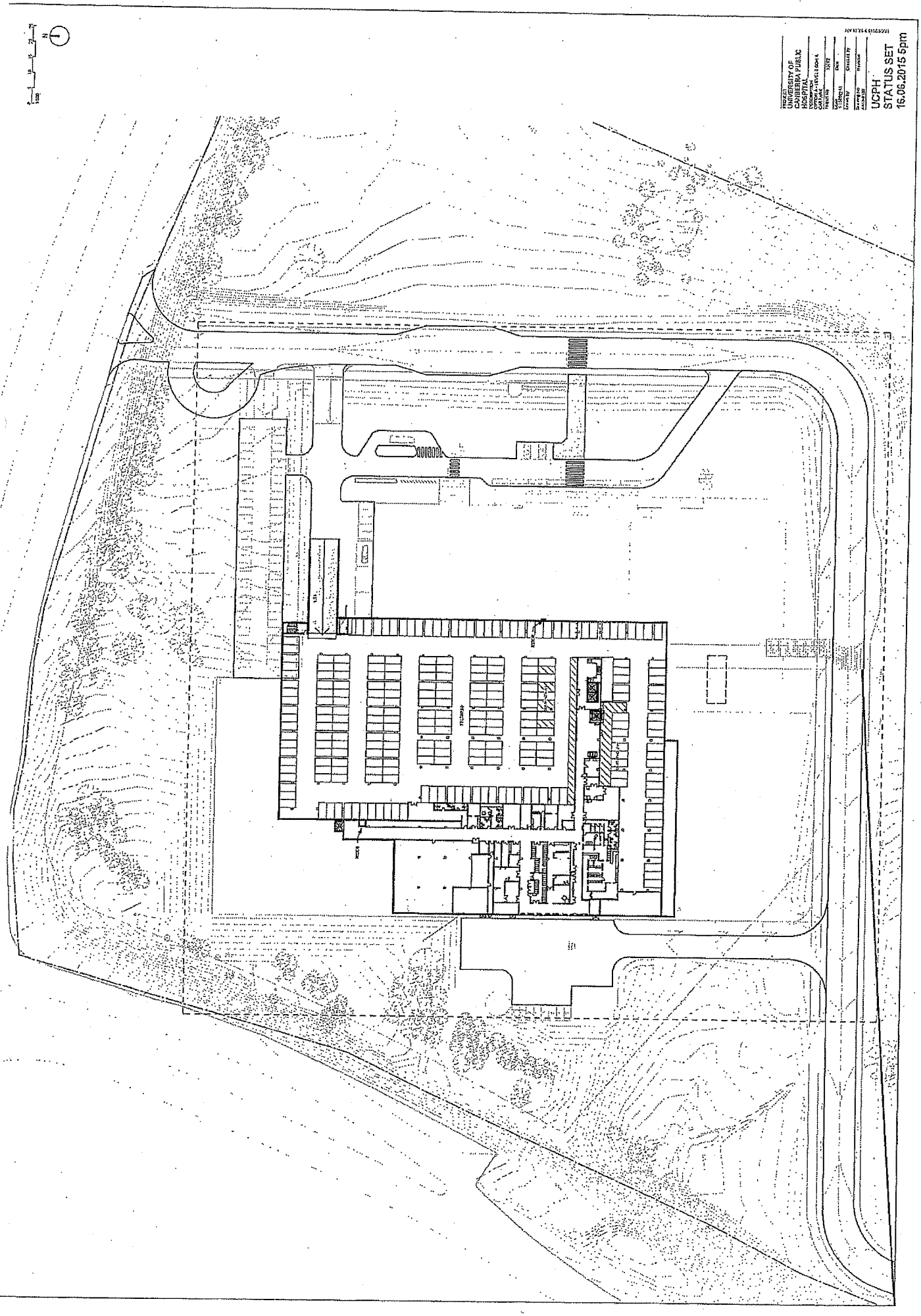
Territory and Municipal Services

PROJECT
UNIVERSITY OF
CAMBRIDGE FORVIC
HOSPITAL
DESCRIPTION
SITE PLAN PROPOSED


UNIVERSITY OF CANBERRA PUBLIC HOSPITAL
UCPH
STATUS SET
16.06.2015 5pm

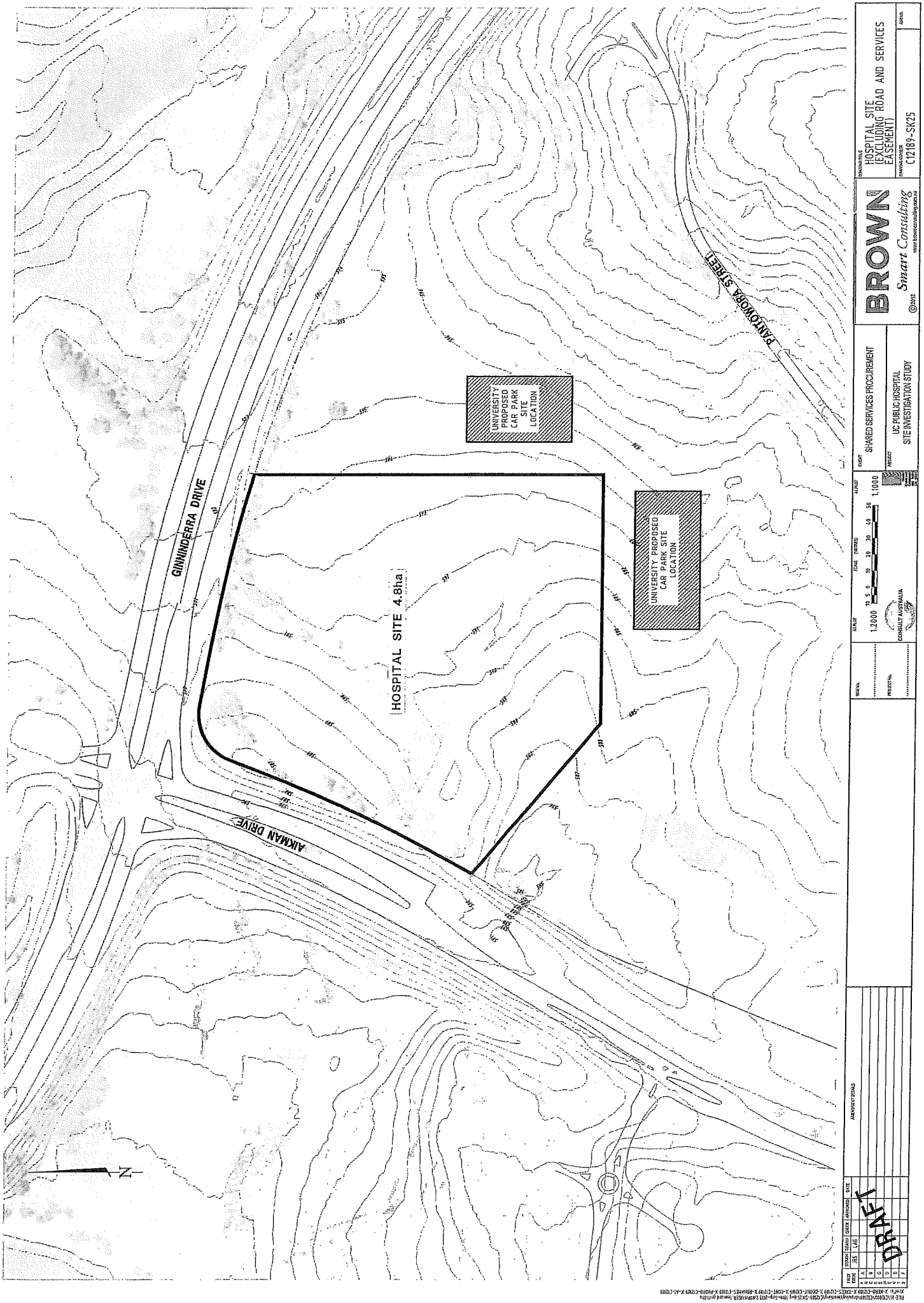
Fawcett, Alice (Health)

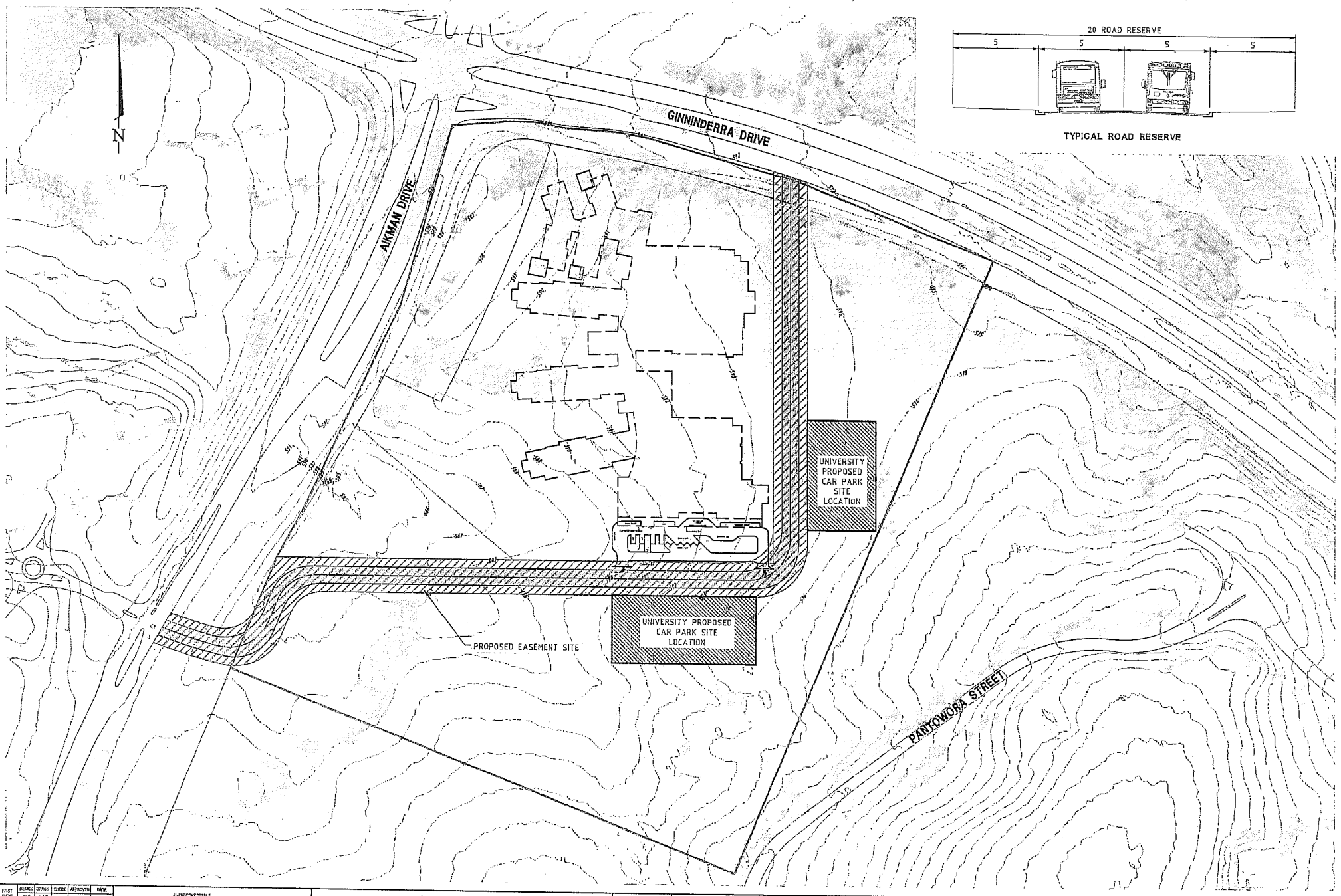
From: Badgery, Alex (Health)
Sent: Tuesday, 19 November 2013 4:50 PM
To: True, Phil
Subject: Emailing: 130927_C12189-SK25+_UCPH Site Plan + Carpark_excl easement_Brown, 130927_C12189-SK23+_UCPH Site Plan + Carpark_Ginninderra Option_Brown, 130927_C12189-SK24+_UCPH Site Plan + Carpark_Pantowora Option_Brown
Attachments: 130927_C12189-SK25+_UCPH Site Plan + Carpark_excl easement_Brown.pdf; 130927_C12189-SK23+_UCPH Site Plan + Carpark_Ginninderra Option_Brown.pdf; 130927_C12189-SK24+_UCPH Site Plan + Carpark_Pantowora Option_Brown.pdf

Your message is ready to be sent with the following file or link attachments:

130927_C12189-SK25+_UCPH Site Plan + Carpark_excl easement_Brown 130927_C12189-SK23+_UCPH Site Plan + Carpark_Ginninderra Option_Brown 130927_C12189-SK24+_UCPH Site Plan + Carpark_Pantowora Option_Brown

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.


GINNINDERRA DRIVE
AIKMAN DRIVE
PANTOWORA STREET
HOSPITAL SITE 4.8ha
UNIVERSITY PROPOSED CAR PARK SITE LOCATION
UNIVERSITY PROPOSED CAR PARK SITE LOCATION
N
BROWN
Smart Consulting
HOSPITAL SITE (EXCLUDING ROAD AND SERVICES EASEMENT)
C12189-SK25
SHARED SERVICES PROCUREMENT
UC PUBLIC HOSPITAL SITE INVESTIGATION STUDY
CONSULT AUSTRALIA
1:2000
DRAFT



TYPICAL ROAD RESERVE

DRAFT

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
	IRS	LAB				
A						
B						
C						
D						
E						
F						

SCALE	1.2000 (A1 PLOT) / 1.1000 (A3 PLOT)
CLIENT	SHARED SERVICES PROCUREMENT
PROJECT	UC PUBLIC HOSPITAL SITE INVESTIGATION STUDY
DRAWING TITLE	PROPOSED EASEMENT SITE OPTION 1
DRAWING NUMBER	C12189-SK23
ISSUE	

BROWN Smart Consulting
www.brownconsulting.com.au
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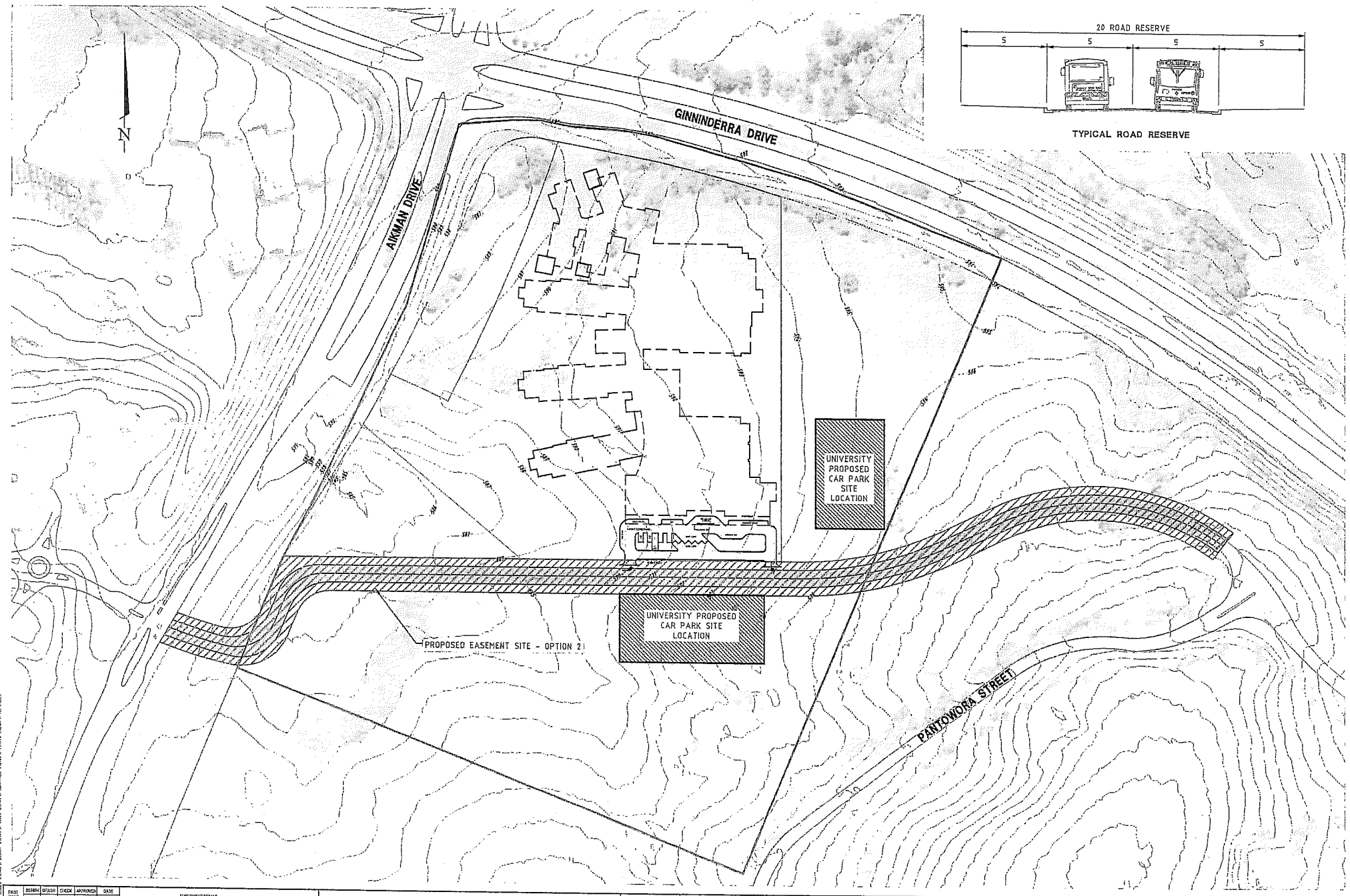
CONSULT AUSTRALIA



DRAFT

FIRST ISSUE	BEARH	DRAWN	CHECK	APPROVED	DATE	AMENDMENT DETAILS
A		JRS	LAG			
B						
C						
D						
E						
F						

WORK No. .....

PROJECT No. .....

AS PLOT SCALE (METRES) AT PLOT

1.2000 50 5 0 10 20 30 40 50 1.1000

CONSULT AUSTRALIA

CLIENT: SHARED SERVICES PROCUREMENT

PROJECT: UC PUBLIC HOSPITAL SITE INVESTIGATION STUDY

BROWN Smart Consulting www.brownconsulting.com.au

DRAWING TITLE: PROPOSED EASEMENT SITE OPTION 2

DRAWING NUMBER: C12189-SK24

ADP NO.

Fawcett, Alice (Health)

From: True, Phil
Sent: Thursday, 26 November 2015 9:41 AM
To: Bell, Jeff; Roulston, David
Cc: Mooney, Colm; Wise, Tim (Health); 'Arch Fotheringham'
Subject: Revised Road Layout Scheme : UCPH

Gentlemen,

Thank you for your time yesterday afternoon and we appreciate your initial acceptance (in principle) for the principle changes identified on the drawing tabled yesterday now incorporating:-

Principle Agreed Changes

- Bus stops located on southern hospital road
- Roundabout included in the scheme to serve potential future connections of Pantaworra + one spur for UC access
- Indicative locations for UC car parks identified
- Left in only from Ginninderra Drive
- Intersection design accommodates "future proofing" for Aikman drive duplication

Further refinement through design acceptance stage

- the inclusion of a mini-roundabout on the hospital road adjacent basement entrance,
- modification of swept path to wind in road closer to original road easement (as best we can),
- consideration of speed ramps / control to consider reducing operational speed of road from 50kmh/hr to 40km/hr
- identification for future services upgrades
- possible adjustment to island locations to prohibit access on "missed turn" on the eastern road

We will of course issue a new drawing as part of the DA amendment which we plan to submit ahead of the 03rd December deadline by ACTPLA.

Thanks again
Philip

Phil True, Snr. Project Manager, Health Infrastructure, Procurement and Capital Works
Phone 02 617 48092 | Fax 02 617 48092 | Mobile [redacted]
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 1 Building 23, The Canberra Hospital, Yamba Drive, Garran, ACT 2605| PO Box 818, Dickson, ACT 2602
www.act.gov.au

University of Canberra Public Hospital - fact sheet

Introducing the University of Canberra Public Hospital (UCPH) – a purpose-built rehabilitation hospital which will be the first of its kind in the ACT. It will provide rehabilitation and support for people with illness or injuries or who are recovering from surgery.

What services will the UCPH provide?
The UCPH will provide tailored rehabilitation programs run by a multi-disciplinary team of clinicians, to support people to live in their community. The hospital will have specially designed therapy and support spaces including gyms, kitchens and rehabilitation courtyards, as well as a hydrotherapy pool. This kind of hospital is also known as a subacute facility.

What conditions will be treated at the UCPH?
Rehabilitation treatment will be offered for neurological conditions such as stroke, brain injury, spinal cord injury, motor neurone disease, multiple sclerosis and Guillain-Barre syndrome. It will also be offered for amputations, surgery or trauma recovery, and de-conditioning and disability associated with illness. Rehabilitation treatment will also be offered for conditions associated with ageing such as cognitive impairment, hip and other fractures, ortho-geriatric conditions and Parkinson's Disease.

UCPH will also offer mental health rehabilitation programs to support people to build resilience and develop skills and resources for living in the community.

Why is the UCPH needed?
The UCPH is being built as part of the Health Infrastructure Program to meet the current and future health care needs of the ACT. The hospital will have capacity for 140 overnight inpatient beds and 75 day places for rehabilitation, including mental health rehabilitation. It will focus on helping people become more independent and supporting them to have an enhanced quality of life.

Comment [ab1]: Still no mention of outpatient services.

What is a day place?
A day place is a person's place in a Day Service program at the UCPH. Their program of treatment and therapy might be conducted in a gym, the hydrotherapy pool, therapy areas or a combination of these. People using the Day Service will be admitted to the hospital as day patients and will attend half or full day rehabilitation programs several times a week.

Where will the UCPH be built?
The UCPH will be built at the University of Canberra on the corner of Aikman and Ginninderra Drive, Bruce. The UCPH will be a teaching hospital and locating it at the University of Canberra will enhance training and research opportunities.

How will the UCPH support the work of Canberra and Calvary Hospitals?
The UCPH will ease the pressure on major hospitals such as Canberra Hospital and Calvary Hospital, allowing them to focus on acute services such as emergency, intensive care and surgery. All general rehabilitation services will move to the UCPH and will no longer be available at Canberra Hospital or Calvary Hospital.

Will UCPH have an emergency department?
As a rehabilitation hospital, the UCPH will not have an emergency department or intensive care unit. It will not provide surgery, maternity services, palliative care or psycho-geriatrics. People who need emergency care will need to attend the emergency department at either Canberra Hospital or Calvary Hospital.

When would I use the UCPH?
You may be admitted to the UCPH or visit as a day patient following surgery or an acute hospital admission. Depending on your situation, you may be stepping up from the care provided by community based services, or stepping back from inpatient services.

Comment [ab2]: Aren't the 140 and 75 admitted patients? Doesn't that mean that they are inpatients? Or is this different.

How would I be referred to the UCPH?
For Rehabilitation services, referrals may be initiated by clinicians in ACT public and private hospitals, medical specialists, general practitioners, interstate health care facilities or even the individual or their family.

Referrals to the Adult Mental Health Rehabilitation Unit and Day Service may be initiated by other services within the Mental Health, Justice Health & Alcohol and Drug Services Division of ACT Health, such as a mental health community team. Referrals can also be made by a general practitioner, an allied health practitioner or an adult mental health service specialist.

All referrals will be screened and triaged to ensure people are seen by the appropriate service.

What ages will ~~be~~ the UCPH cater for?
The UCPH will offer rehabilitation services for adults (aged 18 years and older) and mental health services for people aged 18 to 65 years.

What is the UCPH's relationship with the University of Canberra?
The new hospital will be located at the University of Canberra and will be a teaching hospital, continuing ACT Health's integration of clinical and teaching environments for the benefit of current and future health care providers. Training will be offered in a state of the art facility. This relationship will also enable collaborative research opportunities that will benefit our community and the broader health care sector, and build our health care workforce locally.

When will the UCPH open?
Construction of the hospital is expected to start in 2016 and it is expected to open ~~mid~~ in 2018.

How will I get to the UCPH?
The UCPH will be accessible by public transport. There will be a bus stop right outside the hospital and we are working with ACTION to maximise public transport services. There will also be 710 parking spaces: 250 underground, below the hospital; 60 spaces within the hospital site and a 400-space parking lot immediately next to the hospital.

Will there be changes to traffic arrangements near the site?
ACT Health is working with the Territory and Municipal Services Directorate to address potential traffic arrangements.

Who has been involved in the design of the UCPH?
Clinicians, user groups and consumer and carer representatives have played a significant part in developing the reference design for the UCPH. ACT Health has sought input from Carers ACT, the Health Care Consumers' Association, the Mental Health Consumers' Network, the ACT Emergency Services Agency and ACT Health staff. The wider community also had the opportunity to provide input when the reference designs were released for public comment in March 2015.

For more information visit www.health.act.gov.au or email HIP@act.gov.au.

Fawcett, Alice (Health)

From: True, Phil
Sent: Friday, 1 May 2015 9:45 AM
To: Roulston, David
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen; Gray, Sophie
Subject: RE: Meeting

David,

Thanks and to summarise the information which we will hope to clarify with your team is :-

(1) Understanding of the commitments made within the Acquisition & Development Deed made between the Territory & UC (as regards road position & car parking arrangements)

(2) The recent inclusion for the potential of "on site" parking for the hospital i.e. currently indicated on the concept drawings as 250 underground & 60 above ground

(3) Potential additional traffic analysis on the three car park locations indicated feeding onto the new Hospital road and implications on traffic flow both internally & volume onto Ginninderra

(4) Potential design of the new access/crossing to Aikman drive to incorporate "future" proofing for the potential duelling of this road and implications on the overall construction period of the Hospital build ie. timing considerations should it go ahead.

(5) Bus route currently shown on the PSP design is based on a theoretical road design which may not eventuate - risk mitigation could be to potentially modify the internal bus stop / drop off area to allow the bus to re-route back to Aikman drive as currently no ACTION buses run along Ginninderra at this location.

(6) Position on recently submitted business case in connection with overall UC parking strategy.

Best Regards
Philip

From: Roulston, David
Sent: Friday, 1 May 2015 9:25 AM
To: True, Phil
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen
Subject: RE: Meeting

Phil,

That sounds great and we are very happy to provide as much support as is required to reduce the impacts of our discussion and to reduce the amount of any rework throughout the next phase when you have an assigned a prime contractor and subsequent design consultant

Regards,

David

DAVID ROULSTON AIPM CPPD
DIRECTOR ASSET INFORMATION AND MANAGEMENT SERVICES AND CAPITAL WORKS COORDINATOR |
INFRASTRUCTURE, ROADS AND PUBLIC TRANSPORT DIVISION |
TERRITORY AND MUNICIPAL SERVICES DIRECTORATE | ACT GOVERNMENT
PH: +61 2 6207 6628 | [redacted] FAX: +61 2 6207 7484 |
david.roulston@act.gov.au

"One Government One ACT Public Service"

" Using innovation and imagination let's do more with what we have" Kim Smith GIS Day ACT Government

---

From: True, Phil
Sent: Friday, 1 May 2015 9:18 AM
To: Roulston, David
Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen
Subject: Meeting

Morning Dave,

Great to meet you and your team yesterday and we look forward to working with your good selves in the coming months on development of the wider understanding & implications of the scheme as a whole within the ACT transport network – including of course further work in consideration of the bus routing etc . I have just tried to contact [redacted] so we can set up the first of our co-ordination meetings however, he is on leave until mid week next. We will schedule a meeting accordingly upon his return.

Best Regards
Philip

Phil True, Snr. Project Manager, Health Infrastructure, Procurement and Capital Works
Phone 02 617 48092 | Fax 02 617 48092 | Mobile [redacted]
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 1 Building 23, The Canberra Hospital, Yamba Drive, Garran, ACT 2605| PO Box 818, Dickson, ACT 2602
www.act.gov.au

Fawcett, Alice (Health)

From: True, Phil
Sent: Friday, 1 May 2015 9:18 AM
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Cc: Collins, Jen; Badgery, Alex (Health); Mooney, Colm; Collins, Jen
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Phil True, Snr. Project Manager, Health Infrastructure, Procurement and Capital Works
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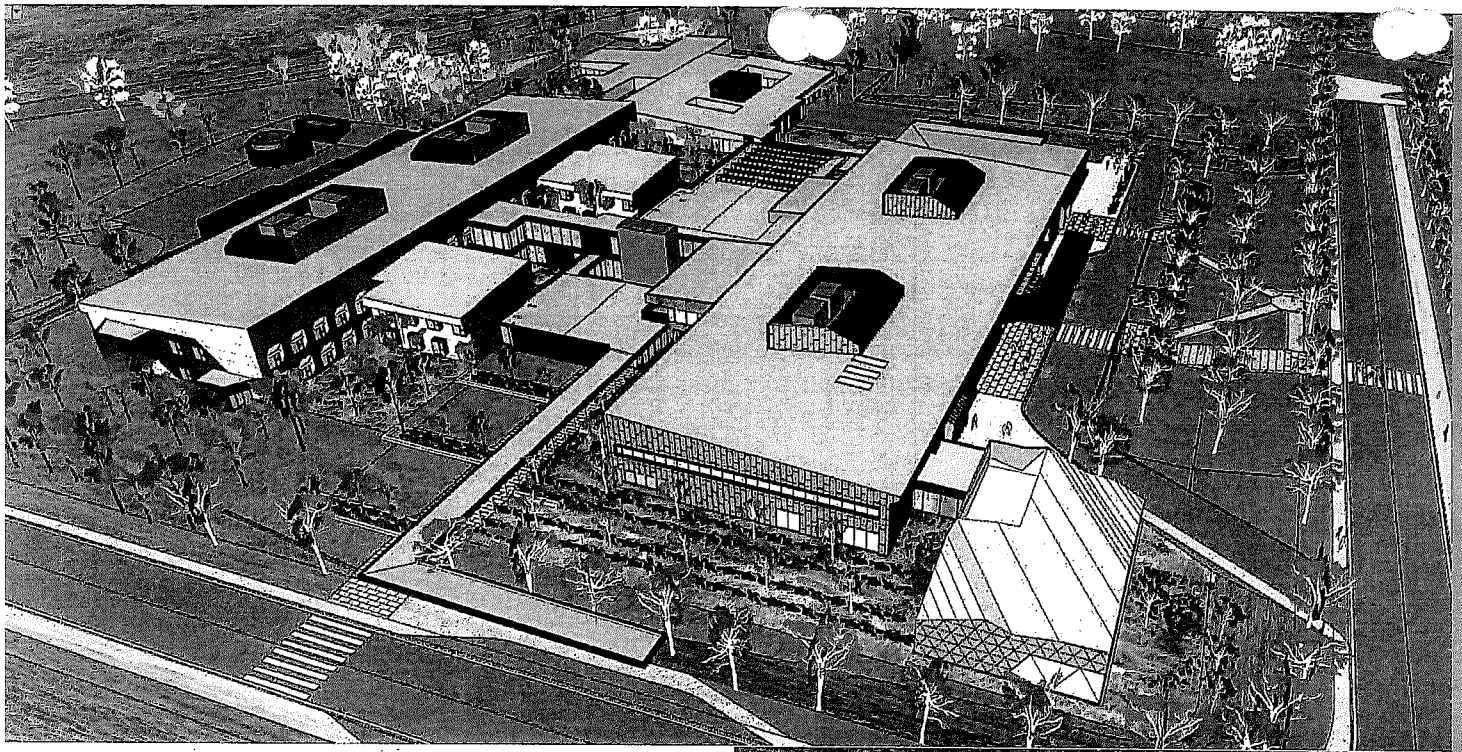


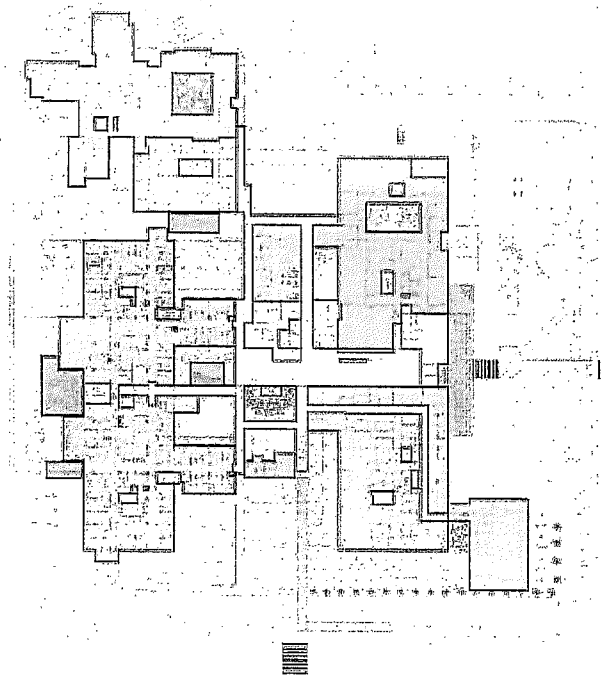
April 2015

UNIVERSITY OF CANBERRA HOSPITAL (UCH)

DEVELOPMENT APPLICATION SUBMISSION

Lyons
Level 3, 246 Bourke Street
Melbourne VIC 3000
T 03 9600 2818
F 03 9600 2819
E lyons@lyonsarch.com.au
W www.lyonsarch.com.au

lyons



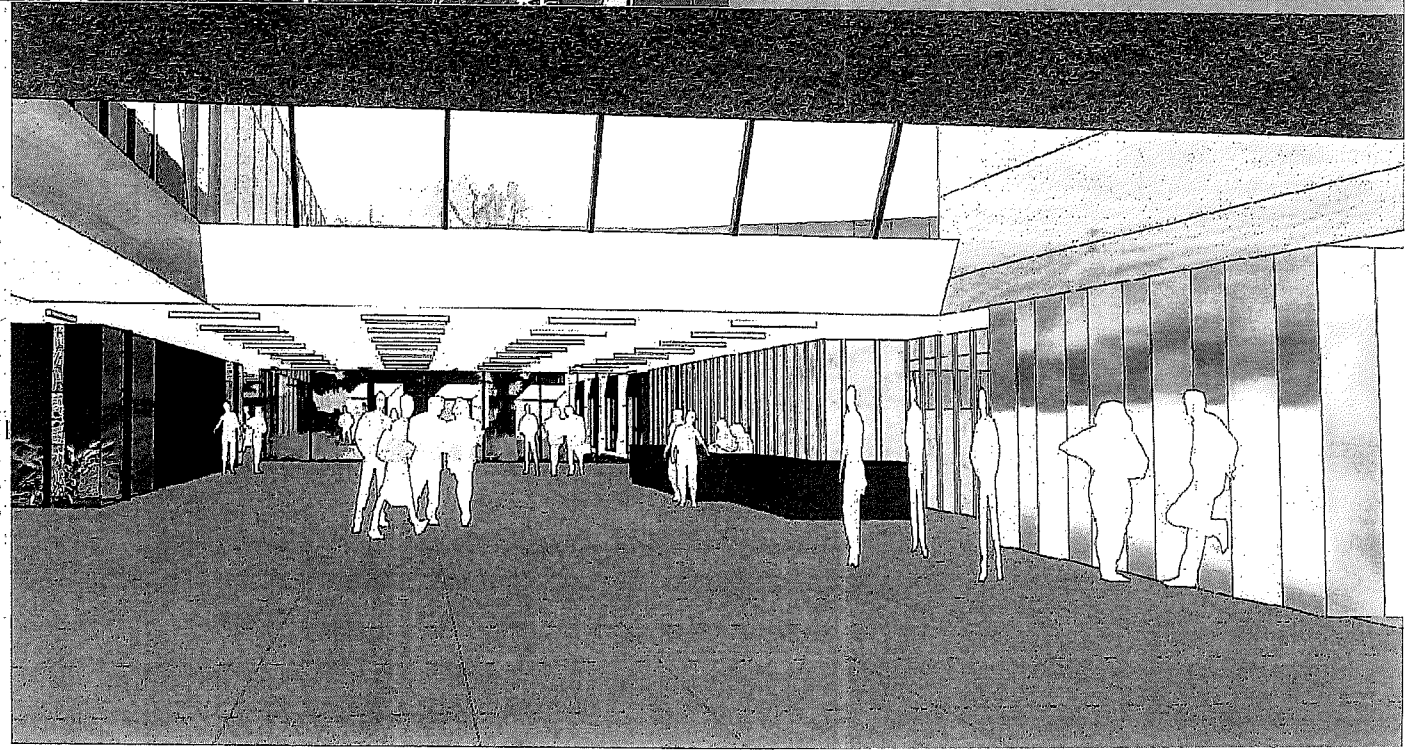


Table of Contents

Section 1 | Introduction

Section 1 | Introduction

Project Overview

UCH is a part of the ACT Health's Health Infrastructure Program (HIP) which is the single largest capital works program undertaken in the history of the Australian Capital Territory (ACT). The HIP involves the overhaul and expansion of all aspects of the ACT Health system.

The University of Canberra Hospital (UCH) will continue the expansion of health and hospital services in the ACT. The existing ACT public health care system needs to expand to meet future health demand created by an ageing and growing population and consumer expectations.

The UCH will respond to this demand as well as allowing the transfer of the majority of adult rehabilitation and subacute facilities of the Canberra Hospital (TCH) and Calvary Hospital (CH) to the new north-side hospital.

The UCH will provide rehabilitation, aged care and mental health services for the populations of the ACT and neighbouring NSW, as well as research and educational facilities. The hospital will comprise 140 overnight inpatient beds made up of 20 Mental Health and 120 Rehabilitation beds.

In addition to the overnight beds, the hospital will comprise 75 day places (30 bed equivalents) made up of 25 Mental Health, 25 Rehabilitation and 25 Aged Care places.

Acute services including emergency department services will not operate from the site.

The UCH will be a teaching hospital that provides a forward-looking approach to patient care by multi-disciplinary teams, teaching, training and research focusing on patient and professional outcomes.

The Territory will be responsible for the design and construction of the facility, including University related areas, and the Access Road. The University of Canberra will be responsible for the design and construction of the car park, with the Territory requiring approximately 660 car parks.

Background

Significant milestones achieved in the development of the hospital include the following:

- September 2012, the ACT Government signed a Heads of Agreement with the University of Canberra to build a new subacute hospital on the University's Bruce campus near Belconnen. The UCH will be located on a 4.8 hectare site within the campus on the corner of Ginninderra Drive and Aikman Drive.
- June 2013, four companies were shortlisted for Principal Consultant (Design) services
- August 2013, a Service Delivery Plan (SDP) was completed. This key document defines the project scope and has informed the Preliminary Sketch Design (PSP) phase. The SDP is comprised of a Functional Brief for each functional area of the hospital and includes a Concept Master Development Plan (CMDP) and Engineering Briefs. The public consultation period closed on 16 July 2014.
- October 2013, the Commonwealth Department of the Environment issued a 'controlled action' decision under the Environmental Protection and Biodiversity Conservation Act (EPBC Act) for the proposed site. It was determined that the proposed action is likely to have a significant impact on listed threatened species and communities protected under the EPBC Act. Public consultation commenced in June 2014 and closed in July 2014. No adverse comments were received
- December 2013 the Acquisition and Development Deed was executed by the Australian Capital Territory (Territory) and the University of Canberra (University). These parties entered into this deed to facilitate and regulate, amongst other things:
  - The grant of the Executive Crown Lease to the Territory
  - The design and construction of the Hospital
  - The physical and other interfaces between the Campus and the Hospital
  - Entry into the Collaboration Deed and the Sublease December 2013, the Collaboration Deed was signed by the Territory and University. The parties have entered into this deed to, amongst other things create a framework to realise the mutual benefits to the University and Territory arising from the co-location of the University Campus and the Hospital and manage the use and occupancy of areas of the facility
- January 2014, the Request For Tender (RFT) was released to the four shortlisted Principal Consultants
- June 2014, Lyons was engaged as the Principal Consultant and commenced the Preliminary Sketch Plan (Design) phase
- October 2014 three (of seven) respondents to the EOI documents issued for Design Construct Manage contract were successfully shortlisted
- August 2014, the 30% complete PSP was endorsed to continue at the 30% complete Milestone Review Workshop by the UCH High Level Users and Design Advisory Group (DAG)
- October 2014, the 50% complete PSP was endorsed with conditions at the 50% complete Milestone Review Workshop by the UCH High Level Users and Design Advisory Group (DAG)
- December 2014, the 100% complete PSP was endorsed to continue with conditions at the 100% complete Milestone Review Workshop by the UCH High Level Users and Design Advisory Group (DAG).

Objectives of the UCH

The broad objective of the UCH is to provide for the current and future sub-acute rehabilitation health service needs of the community. More specifically, the facility is to:

- Integrate with the broader network health systems in the ACT to support a high quality patient journey
- Provide a flexible, fit for purpose facility, which integrates teaching, training and research activities within the framework of quality service and patient care
- Enhance the education of healthcare professionals
- Facilitate future expansion
- Allow for growth in demand to 2022-26
- Facilitate the implementation of current and new models of care and clinical innovation
- Attract and retain the appropriate workforce
- Achieve high levels of functionality enabling the facility to operate efficiently for visitors, consumers and staff
- Provide good access for patients, carers and visitors
- Be accessible via public transport and link to the community by bicycle and other modes of transport
- Deliver project requirements within the approved budget
- Be able to be efficiently maintained and serviced
- Deliver a compact footprint that optimises site utilisation
- Ensure the siting and design of UCH and its Associated Infrastructure are consistent with the University of Canberra Campus Master Plan (and the guidelines that form part of the Campus Master Plan) and the Campus Character Plan
- Provide effective and efficient physical linkages between UCH, the Hospital Site, the Associated Infrastructure and the Campus including the Heartland, Health and Cultural precincts identified in the Campus Master Plan
- Be designed incorporating contemporary construction methodologies that achieve high value capital and recurrent cost effectiveness
- Deliver a high amenity environment that is evidence based and reflective of international best practice in the design for patient wellness and recovery
- Incorporate Environmentally Sustainable Design (ESD) initiatives in line with the ACT Health Sustainability Environmental Principals and Guidelines and ACT Carbon Neutral Framework and Whole of Life efficiencies

Clinical services

The table below sets out a summary of service profile for clinical services for the UCH.

Clinical services		
Mental health	**No.**	**Functional units**
Rehabilitation	20	Sub-acute beds
Day service	25	Day places (equivalent of 10 beds)
Day service (consult)	2-3	Consult rooms
Rehabilitation		
Inpatient	120	Beds
Day hospital	25	Day places (equivalent of 10 beds)
Day hospital (consult)	6-7	Consult / interview / treatment rooms
Ambulatory care clinics	3.25 / 1 / 1	Consult / interview / treatment room
Aged Care		
Day hospital	25	Day places (equivalent of 10 beds)
Day hospital (consult)	6-7	Consult room / interview / treatment rooms
Ambulatory care clinics	3.5 / 1 / 1	Consult / interview / treatment room

UCH Scope of Works

The UCH Scope of Works will include, in summary:

- Enclosed covered areas and unenclosed covered areas as detailed in Section 2.2 of this report
- Additional Areas (shared space between University and Territory), nominated as the Shared Education and Research department here as detailed in Section 2.2 of this report. Education and research areas will be provided for shared use by ACT Health, the University of Canberra and other institutions
- University Premises (1000m2 University only space) and nominated as the Faculty of Health here as detailed in Section 2.2 of this report. This1,000 sqm Net Lettable Area will be subleased to the University of Canberra , Faculty of Health.
- Access Road as shown in the Appendix A of this report
- The hospital will comprise 140 overnight inpatient beds made up of 20 Mental Health and 120 Rehabilitation beds. In addition to the overnight beds, the hospital will comprise 75 day places (30 bed equivalents) made up of 25 Mental Health, 25 Rehabilitation and 25 Aged Care places as well as other consulting and treatment spaces for outpatient and ambulatory services
- An Adult Mental Health Rehabilitation Unit will include 20 beds, including places for assessment as well as rehabilitation. The facility will have a hydrotherapy pool as well as space for pharmacy and pathology services
- The UCH will provide for executive and staff workspaces as well as a range of hospital support services
- Clinical support services – medical imaging, pharmacy and pathology, hydrotherapy pool
- Non clinical support services –food, cleaning, waste management, linen, property management and maintenance

The following table summarises the schedule of accommodation for the hospital.

Table UCH Schedule of Accommodation

University of Canberra Public Hospital
Schedule of Accommodation - Departmental Overview

Revision: 9

	Functional Brief				WORKING PSP AREAS (TO BE CONFIRMED BY ACT H)				Variation
	Sub Total Area	Circ. %	Circ. Area Estimate	Sub Total GDA	Sub Total Area	Circ.%	Circ. Area	Sub Total GDA	
1 Rehabilitation and Aged Care Inpatient Units									
Inpatient Unit - Neurological Rehab	939	40%	376	1315	955	40%	382	1337	22
Inpatient Unit - General Rehab	939	40%	376	1315	952	40%	380	1331	17
Inpatient Unit - Older Person's Rehab	930	40%	372	1302	885	40%	354	1239	-63
Inpatient Unit - Slow Stream Rehab	930	40%	372	1302	891	40%	356	1247	-55
Inpatient Unit - Shared Space	807	40%	323	1130	934	40%	374	1308	178
Transition Space	24	40%	10	34	24	40%	10	34	0
Medical Overnight Accommodation	14	15%	2	16	14	15%	2	16	0
Sub Totals	4583	40%	1830	6413	4654	40%	1858	6512	99
2 Adult Mental Health Rehabilitation Unit									
Patient Areas	554	40%	222	776	552	40%	221	773	-3
Patient Areas - Central	167	40%	67	234	109	40%	44	153	-81
Clinical Support Areas	312	40%	125	437	274	40%	110	384	-53
Public Amenities	6	40%	2	8	6	40%	2	8	0
Sub Totals	1039	40%	416	1455	941	40%	376	1317	-137
3 Rehabilitation & Aged Care Day Service / Community / Ambulatory Care Services									
Entry Reception	147	30%	44	191	163	30%	48	209	18
Day / Community / Ambulatory Services	859	30%	258	1117	886	30%	266	1152	35
Day Activity Spaces	154	30%	46	200	106	30%	32	138	-62
Clinical Support Areas	106	30%	32	138	79	30%	24	103	-35
Sub Totals	1266	30%	380	1646	1232	30%	370	1602	-44
4 Adult Mental Health Day Service									
Reception/Entry	45	32%	14	59	45	32%	14	59	0
Treatment Areas	282	32%	90	372	266	32%	85	351	-21
Staff Support Areas	95	32%	30	125	97	32%	31	128	3
Sub Totals	422	32%	135	557	408	32%	131	539	-18
5 Hydrotherapy									
General	354	25%	89	443	358	25%	90	448	5
Sub Totals	354	25%	89	443	358	25%	90	448	5
6 Executive and Central Staff Workspaces									
RACC/Mental Health Executive/Admin	407	25%	102	508	447	25%	112	558	50
RACC/Mental Health Shared Workspace	1260	25%	315	1575	1099	25%	275	1374	-201
Sub Totals	1668	25%	417	2083	1546	25%	386	1932	-151
7 Clinical Technology & Equipment Services									
General	148	25%	37	185	123	25%	31	154	-31
Sub Totals	148	25%	37	185	123	25%	31	154	-31
8 Main Entry and Hospital Operations									
Main Reception	171	25%	43	214	156	25%	39	195	-19
Public Amenities	30	10%	3	33	31	10%	3	34	1
Café	100	20%	20	120	100	20%	20	120	0
Multi Faith Area, Veteran's Liaison and A&TSI Liaison	130	15%	20	150	85	15%	13	98	-52
Clinical Records	103	15%	15	118	20	15%	3	23	-95
Ward Services	29	15%	4	33	29	15%	4	33	0
Sub Totals	563	17%	105	667	421	17%	82	503	-164
9 Central Staff Amenities									
General	149	15%	22	171	247	15%	37	284	113
Sub Totals	149	15%	22	171	247	15%	37	284	113

10	Education, Research and Meeting Facilities								
	Skills Training and Research	1302	30%	391	1694	704	24%	169	872	-821
	Meetin Spaces	154	30%	46	200	225	24%	54	279	79
	Informal Learning Commons	193	30%	58	251	80	24%	19	99	-152
	Support - Central Workspace - Research	213	30%	64	276	0	24%	0	0	-276
	Support - Shared Support / Amenities	208	30%	62	270	154	24%	37	191	-79
	Space to be Collocated with UCPH Clinical Areas	200	30%	60	260	100	24%	24	124	-136
	Sub Totals	2271	30%	681	2952	1263	24%	303	1566	-1386
11	Pharmacy									
	General	246	20%	49	295	236	20%	47	283	-12
	Sub Totals	246	20%	49	295	236	20%	47	283	-12
12	Pathology									
	General	76	20%	15	91	76	20%	15	91	0
	Sub Totals	76	20%	15	91	76	20%	15	91	0
13	Body Holding									
	General	45	20%	9	53	24	20%	5	28	-25
	Sub Totals	45	20%	9	53	24	20%	5	28	-25
14	Support Services / Front of House									
	General	88	20%	18	106	44	20%	9	53	-53
	Sub Totals	88	20%	18	106	44	20%	9	53	-53
15	Food Services									
	General	238	25%	60	298	244	25%	61	305	8
	Sub Totals	238	25%	60	298	244	25%	61	305	8
16	Cleaning / Waste Management and Hygiene									
	General	152	20%	30	182	149	20%	30	179	-4
	Sub Totals	152	20%	30	182	149	20%	30	179	-4
17	Linen Services									
	General	76	20%	15	91	70	20%	14	84	-7
	Sub Totals	76	20%	15	91	70	20%	14	84	-7
18	Supply and Docks									
	General	102	20%	20	122	107	20%	21	128	6
	Sub Totals	102	20%	20	122	107	20%	21	128	6
19	Support Services / Back of House									
	Clinical Engineering	91	20%	18	109	76	20%	15	91	-18
	Shared Services - Information, Communication & Technology	30	20%	6	36	30	20%	6	36	0
	Property Management and Maintenance	123	20%	25	147	128	20%	26	154	7
	Sub Totals	244	20%	49	292	234	20%	47	281	-11
20	Medical Imaging									
	General	59	20%	12	71	67	20%	13	80	9
	Sub Totals	59	20%	12	71	67	20%	13	80	9
21	Faculty of Health									
	General	833	20%	167	1000	826	20%	165	991	-8
	Sub Totals	833	20%	167	1000	826	20%	165	991	-8

Section 2 | Design Response

Section 2 | Design Response

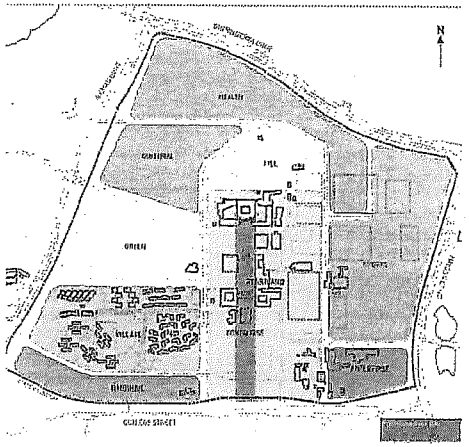
2.1 Urban Design Response

Analysis of Context

Site Location

The new hospital is to be constructed on a new greenfields site at the University of Canberra. The site is located within the University's Health Innovation Precinct in the north western zone of the campus. Refer campus zoning plan right.

It is important that the new hospital, the treatment of the site within the Health Precinct and connections to the main campus be developed to support the University's key planning objectives.



These design and planning principles are directed toward enhancing the identity and context of the UC campus and are outlined in the University's *Campus Masterplan 2012* and *Campus Character Plan 2012*. They include providing legible connections between the Health Innovation Precinct and the Campus Heartland, reinforcing and enhancing the robust rectilinear order of the main campus/Concourse, framing views inside and outside the campus, developing and enhancing the existing landscape context and incorporating shared pedestrian and bicycle pathways.

A Deed of Agreement between the Territory and the University delineates 4.8 hectares of land within the Health Innovation Precinct for the construction of the new hospital. An alignment for a new site road servicing the new hospital also forms part of the Deed of Agreement. This is shown to the right.

Access to the Hospital will be from this new site road, with left in access and left out access from Ginninderra Drive and signalised access in both directions from Aikman Drive at the current intersection of this road with Joy Cummings Place. This is further detailed in Section 4.2 of this Report.

The site is located close to the Belconnen Town Centre and Lake Ginninderra and is bounded on the west by Aikman Drive and to the north by Ginninderra Drive. These two arterial roads feed the surrounding residential suburb of Belconnen and the Town Centre. Bus transport runs close to the site and existing routes will be adjusted to provide public transport service to the new hospital.

Topography and Views

The proposed site for the new hospital slopes down from the north east to the south west and is generally open grassland with some overland water flow from University Road and existing carparking areas. In the north west corner of the site there is a remnant tree plantation along a previous track and this will be retained where not affected by changes in site levels for construction.

There are two existing water retention areas adjacent to the western boundary to the east of Aikman Drive. These are important elements of the site context and will be modified as required to suit the new development while maintaining their status as important environmental features.

The site context has also been analysed in terms of views both out from the site and into the site from surrounding streets and suburbs.

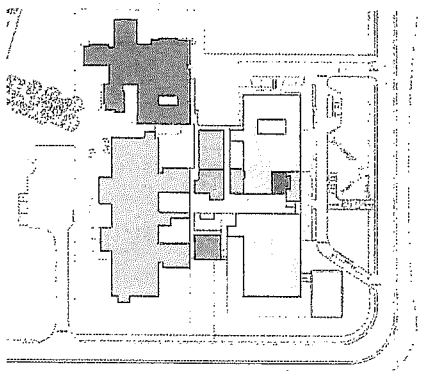
Views looking out from the site to the west and south west are particularly attractive, and will be available from the upper levels of the new hospital buildings however it is noted that design strategies will need to be implemented to control summer afternoon sun along the western facades of new buildings.

Ground floor spaces of the facility will be able to take advantage of both near and far landscape views including to the existing treed canopies along Aikman and Ginninderra Drives. Outlooks from the upper levels of the new buildings on the eastern side of the campus will take advantage of views toward the distant horizon including the Brindabellas to the south west.

The new hospital buildings will be seen from outside the site, particularly from Aikman and Ginninderra Drives. The scale and height of the buildings and their relationship to the landscape along these edges has been developed to be sympathetic to the site context in terms of typology, landscaping and setbacks.

Siting

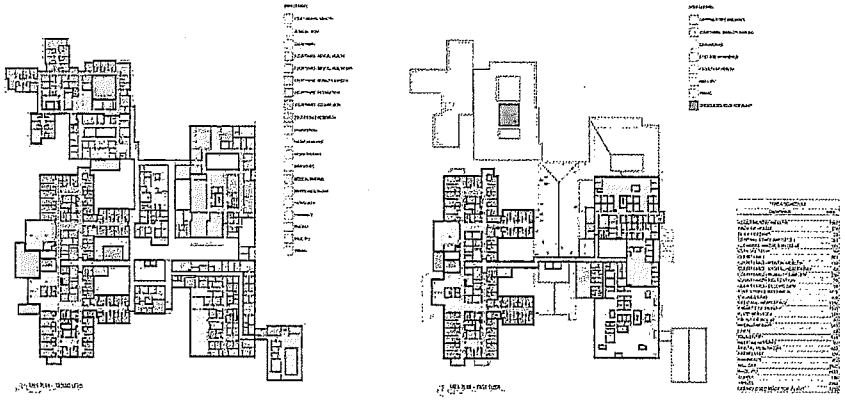
The arrangement and siting of the proposed buildings on the proposed site has been derived through considerations of functionality, opportunities for future expansion, creating an appropriate 'address' for the new hospital and the need to reflect the rectilinear modernist urban structure of the main campus concourse.



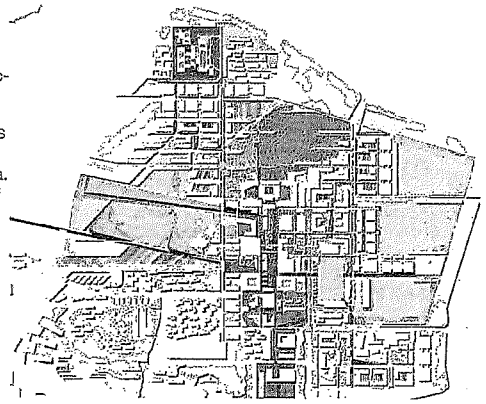
A wide range of functional arrangements were explored as part of the design and planning process. The siting arrangement for the new hospital building as agreed during the PSP phase is illustrated right.

It was agreed that this north south arrangement of buildings provided the most functional arrangement for the new hospital buildings and also made the most effective utilisation of the available site. A main drop off driveway and main entry is shown along the longer east side of the new hospital. A secondary entry is proposed from the south road. Both entries bring patients and visitors to a central hospital reception point.

The proposed north south siting of the new buildings also provides for clear zonings on the site. This includes a 24 hour inpatient zone along the western side of the campus, departments which are open during 'business hours' only consolidated in a building on the eastern side of the site and a central zone of support and diagnostic services. This siting/zoning arrangement allows for those parts of the hospital which do not operate 24 hours a day to be closed at the end of each business day.



The north south orientation and rectilinear floor plans of the proposed buildings and their siting aligns closely with the rectilinear order and character of the main University of Canberra concourse – refer diagram below.



The strategy to locate the hospital buildings in the south eastern corner of the site results in an efficient use of the available land and also provides expansion space for future development of the hospital (refer Section *Future Expansion Capabilities*, below).

The proposed siting of the hospital building also allows for clear connections to be made to future carparking facilities to be developed by the University of Canberra. These are indicatively proposed on the eastern side of the eastern site road and to the south of the southern site road. The southern carpark offers an opportunity to develop an at grade linkage between the carpark and the southern hospital entry.

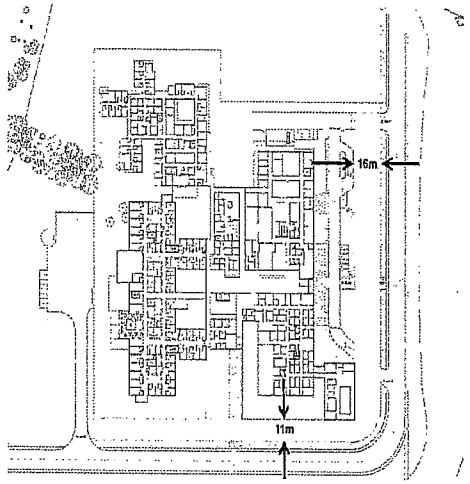
A one way access driveway serving the main entry incorporates drop-off spaces, parking for patients, community transport and accessible vehicles before exiting the site at the northern end of the eastern roadway. The numbers of drop-off/carparking spaces included in this arrival area are in accordance with the Deed of Agreement. There is an opportunity to increase the number of spaces along this drop-off entry way if required. The northern exit of the drop-off roadway includes a separate access/service road for use by emergency vehicles and as a drop-of zone for the Clinical Technical Equipment and Equipment Loans Scheme stores.

The siting proposals also include provision of a ramp and delivery area on the western side of the hospital. This separates service delivery vehicle traffic from visitor and carpark traffic (including to the future UC carparks) and minimises impacts on pedestrians and cyclists. These areas for back-of-house functions, in-ground tanks for rainwater harvesting, mains connections for infrastructure services and circulation at basement level will be excavated into the benched site to serve the new complex. A service tunnel from the loading dock area will extend to two basement lift lobbies – one for the RACC inpatient unit and one for the inpatient adult mental health unit. These tunnels will be wide enough to accommodate AGVs for delivery of linen, food and other consumables to central points on the ground and first floors.

The locations of new buildings on the site has also been determined by considerations of cut and fill. The proposed siting produced equal quantities of cut and fill to create the bench for the new building.

The proposed benching level is RL 591.30 which results in an approximately two metre level difference between the eastern site road and the hospital's main entry. The proposed setback of buildings from this roadway accommodates this change of level over a gentle slope that meets access requirements (AS1428.1) and is landscaped with grass and trees. This setback (along with the hospital footprint) impacts on the number of regulated trees that require removal. Along the southern boundary of the site, the proposed site bench level will meet the southern site ring road at grade.

The siting response also takes into consideration one of the key objectives of the University of Canberra Campus Character Plan which is that future developments on the campus should read clearly as 'buildings in the landscape'. To achieve this, it is proposed that the hospital buildings have substantial setbacks from the road alignments and that are landscaped to provide a formal/informal landscaped setting for the new buildings. The Hydrotherapy building on the south east corner of the hospital is set back 11 metres from the southern road boundary and 16 metres from the eastern road boundary. Other major building elements are set back 22 metres and 44 metres from these two road frontages while achieving access requirements. Although generous, these setbacks cannot be minimised without directly impacting upon access requirements.



The proposed siting and arrangement of buildings also addresses the need for high use areas to be as close as possible to access points. These high volume departments and functional units address the main eastern frontage of the hospital while the quieter/24 hour zones of the hospital – including all of the inpatient areas – are located away from the new road and take advantage of views across Aikman Drive to the Brindabella mountains in the west and south west.

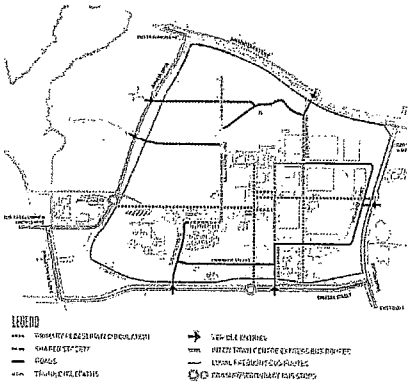
Integration with other Onsite Facilities/Services

The design response has been developed to make strong links back to the main campus of the University and to reflect its distinctive character.

Specifically, the design response addresses a physical link between the main campus/Concourse and the new hospital for pedestrians and cyclists. It is expected that this shared pathway will be used by students, staff and visitors moving between the hospital and the main campus facilities.

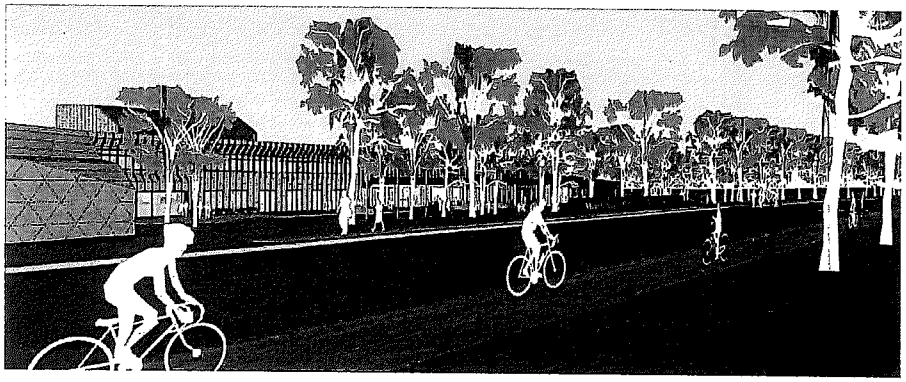
This pedestrian/bicycle linkage will be developed in accordance with the UC Campus Character Plan which proposes a rectilinear arrangement of roads and pathways as connections from the main Concourse to the Health Innovation Precinct. These circulation lines and paths from the Campus Character Plan are illustrated right.

It is proposed that users accessing the new hospital from the main campus will exit the central Concourse at its northern end, adjacent to Building 6 and travel west along a new shared pathway to Pantowora Street. A new shared pedestrian/cycle way would then travel in a northerly direction, aligned with Pantowora Street to bring users to the eastern side of the new hospital.



With the University Shared Facilities located at ground level in the new main front building, it is proposed that a pedestrian/cycle crossing be incorporated on the eastern roadway to allow safe crossing of this road by people coming down from the main campus. Once pedestrians and cyclists have crossed the road a series of steps and 1 in 20 ramps provide a direct connection to a dedicated University entry on the main frontage of the new building.

This arrangement reinforces a natural line for access by students, staff and others travelling down from the main campus. It also effectively separates University pedestrian and traffic flows from the movement of patients, visitors and staff who are accessing core services in the hospital. This will be particularly important during periods where large numbers of students will be arriving and departing over short periods of time.



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Building Form/Height

The plan forms for the new hospital buildings have been developed from the following considerations:

- providing optimum long term adaptability and flexibility
- optimising constructability
- optimising the site utilisation/yield

Each building in the new hospital campus is proposed as a rectilinear plan shape. This allows for use of a modular structural/planning grid and for building footprint shapes which allow for high levels of flexibility and adaptability in internal planning. These simple plan shapes also offer a high level of constructibility and are effective from a capital cost perspective.

The proposed rectilinear plan forms also provide optimum daylighting. Their widths and orientations have been established to optimise daylight penetration into the central zones of each building.

As noted in the previous section, the resultant configuration/arrangement of these rectilinear building forms – some large, some medium and some small in scale – reflects closely the urban character and built form of the existing UC campus.

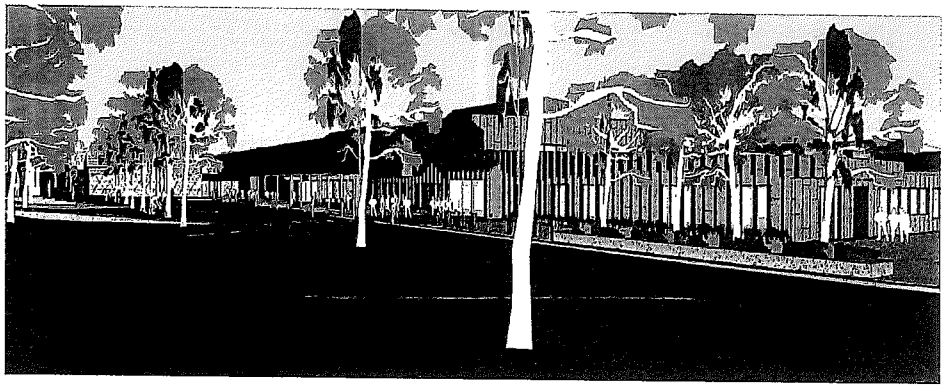
The numbers of storeys in each of the proposed buildings have been established through clinical and service delivery considerations. Facilities such as the UCH which focus on rehabilitation have particular clinical requirements. Many patients and carers will be ambulant but will walk with the assistance of walking aids and others will use wheelchairs. Sub acute/rehabilitation hospitals are therefore generally designed as low height/single level facilities to minimise level changes for patients and visitors.

Sub acute and rehabilitation facilities also require high levels of access to external garden areas – for therapeutic and recreation rehabilitation programs. This also generally suggests that these types of facilities are planned with direct access to ground level outdoor areas.

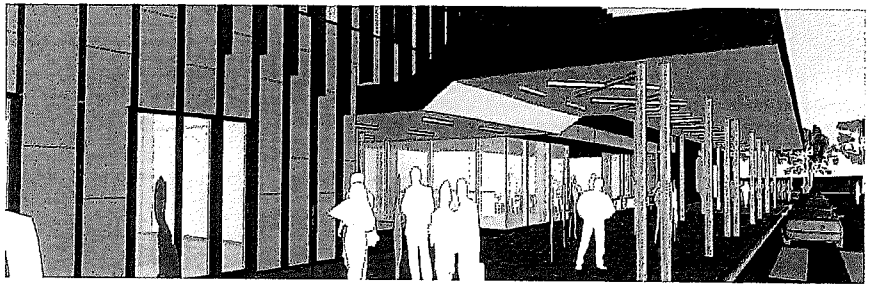
It is noted that one of the objectives of the University of Canberra's Masterplan and Character Plan is that any new buildings developed on the campus be of three or more storeys in height.

The proposed design response for the new hospital reconciles these twin demands of clinical need and substantial urban form by proposing that a number of the new building in the hospital be developed as two level buildings.

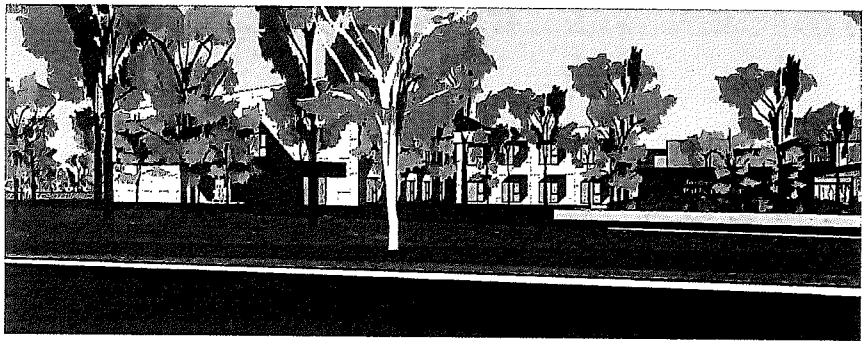
The main building at the front of the Hospital is proposed as a two storey facility. It accommodates high volume patient/visitor functions on the ground floor including highly trafficked areas used by UC students. Workspaces for the University, for hospital staff and the hospital Executive are located on the first floor of this building. This arrangement optimises the functional clinical and teaching requirements of the new hospital and also delivers an entry building of appropriate 'civic' height and scale fronting the new entry forecourt.



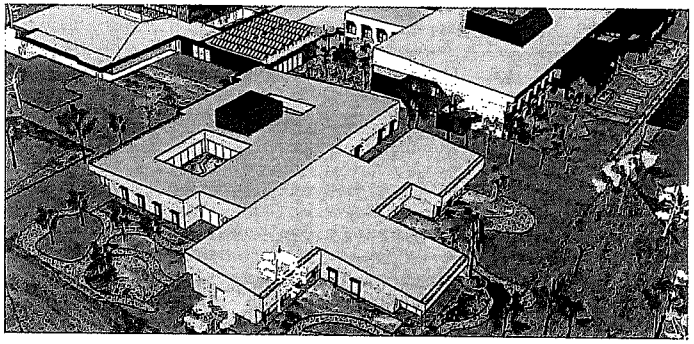
Formal framing of entries, projecting canopies and projecting 'pod' elements provide further articulation to the building form and these have also been developed in the rectilinear formal language used for each of the building elements.



The RACC inpatient building is also proposed as a two storey building. With the anticipated patient mix in the new building it was deemed feasible that patients who are less ambulant could be accommodated in the upper level of this building. Both levels have provision for outdoor recreation spaces and rehabilitation areas, the latter provided as upper level balconies and outdoor terraces.



In terms of built form, the Mental Health Inpatient/Day Program building is proposed as a single level structure, in keeping with this program's desire to present a domestic/residential environment for patients.

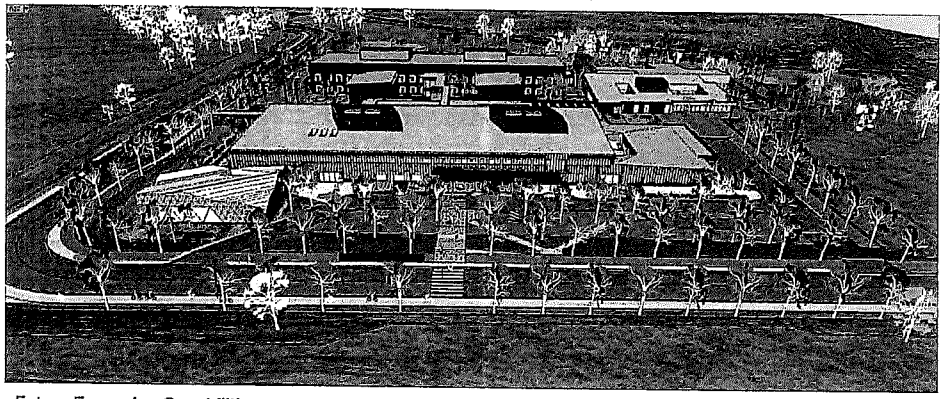


The central zone of the hospital which accommodates the reception, support and diagnostic facilities is proposed as a single level building.

In terms of built form/building heights, the PSP design has been developed using the following floor to floor heights:

- basement to ground level – 4.2 metres floor to floor
- ground floor to first floor level – 4.1 metres floor to floor
- first floor to roof mounted plant – 4.1 metres floor to floor

All buildings, with the exception of the central support/ diagnostic spaces, are roofed with single slope skillion roofs set at a four degree pitch. Concealed eaves gutters are provided on the low side of each roof, thereby avoiding parapeted box gutters. These single slope skillion roofs also provide a distinctive/ strong building form, optimise constructibility and offer easy long term maintenance of the hospital roofs.

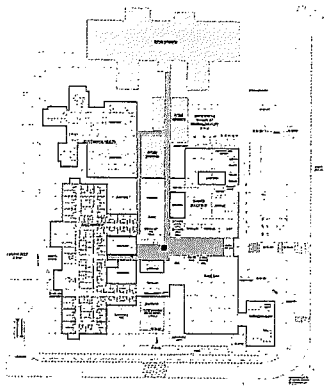


Future Expansion Capabilities

The development of a compact and operationally efficient footprint for the new hospital campus has resulted in an effective utilisation of the available site area. Locating the new hospital buildings in the south eastern corner of the site has resulted in significant residual site area being available for future expansion.

The diagram to the right illustrates how future expansion of the facility can be implemented. Support and diagnostic areas, including an expansion of the medical imaging capability can occur in the central spine to both south and north. A substantial new building can also be developed at the northern end of the site, linked into the main north south circulation system. To illustrate the potential future site yield/capacity, this indicative future footprint has been shown as a second two level 128 bed inpatient building. This expansion to the north will involve some further filling at the northern end of the site to create an extended site bench.

Expansion of the facility is also possible to the west but this involves more substantial/costly filling of the site to create an extended bench for the expanded facilities.



2.2 Architectural Response

The architectural response has been developed to deliver a therapeutic and supportive environment for UCH patients and families, a high amenity work place for UCH and UC staff and a collaborative teaching and learning environment for students.

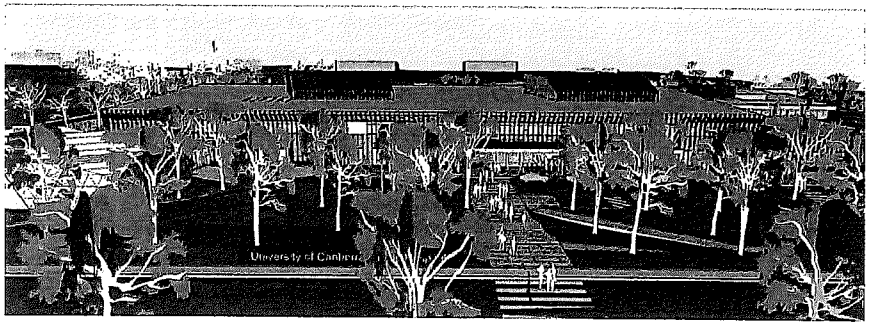
The architectural response is also about creating a distinctive and contemporary 'identity' for the hospital and using architectural strategies to provide clear and intuitive wayfinding through the new building.

The architectural response recognises that patients typically have long lengths of stay in rehabilitation and mental health subacute facilities so there is a need to provide a more supportive and residential scaled environment for patients, carers and their families.

The architectural design response is described through the following key ideas/concepts:

2.2.1 Creating a distinctive identity for the public presentation of the new hospital.

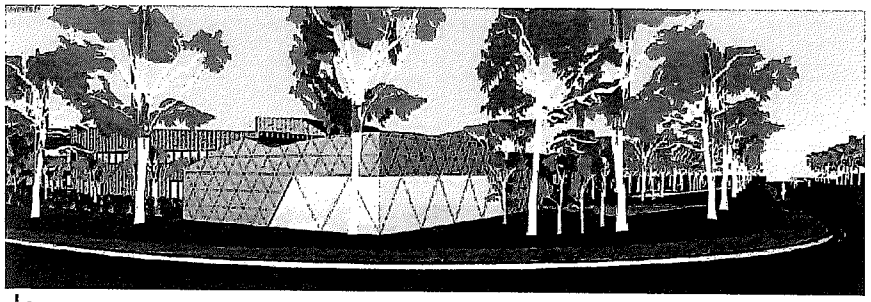
The main arrival point for the new hospital on the eastern side of the site is civic in its scale and presentation. It includes an entry driveway/drop off area, a short term parking area and undercover canopied drop off outside the main entrance. This forecourt area is generous in scale and is landscaped with formal rows of trees to signify this main frontage to the new hospital.

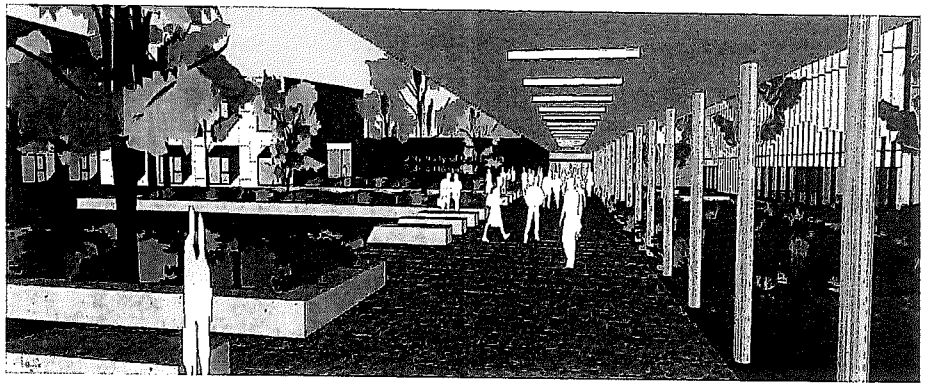


The entry canopy in its bright cladding material acts as a 'sign' for the main entry point. A secondary entry on this frontage, also framed in brightly coloured metal panels designates the University's student entry. The facade of this main entry building is articulated with a series of fine vertical fins which provide protection from the hot summer sun and also give an appropriate level of articulation and scale to this main entry facade.

The entry on the southern side of the hospital is designed using a similar architectural language but at a smaller scale, denoting its role as a secondary entry point into the Hospital.

The Hydrotherapy building, which holds the prominent south east corner of the site, has been developed as an urban 'sculptural' element.

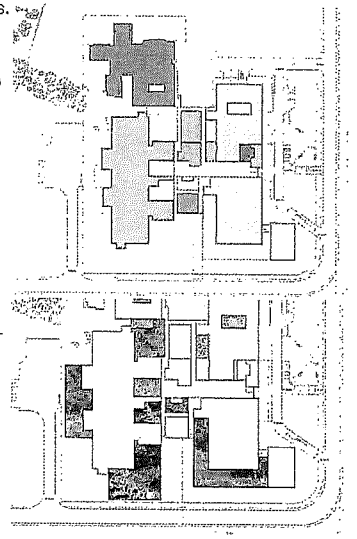




2.2.2 Designing each building element in the new hospital as distinctive elements to assist in wayfinding.

Navigating through a large and complex facility such as the new UCH can present challenges for patients and carers.

One of the key design concepts for the new UCH is to provide a clear 'mind map' that people can use to navigate through the new facility. One of the ways in which this can be achieved is by designing each building element in the campus as a clearly distinct and differentiated building. This includes the use of different colours and facade articulations (within the standardised cladding system proposed) and in the articulation of the cladding panels. This concept of clearly identifiable buildings is illustrated in the diagram on the right.



2.2.3 Using landscaped spaces, courtyards and framed views to also act as place makers/wayfinding devices.

The second architectural concept is to use landscape spaces in the new facility – courtyards, landscaped forecourts and other landscape elements – also as wayfinding devices. Each garden/courtyard will be designed with a distinctly different theme and pallette. These gardens include a water/wetland, a rock garden, native grasses garden and 'colour' gardens.

These spaces, in combination with the distinctive and differentiated building elements will provide patients and users with clearly identifiable precincts within the new hospital. Details of the proposed landscaping design, including specific proposals for materials and finishes and planting materials is included in Section 2.5.

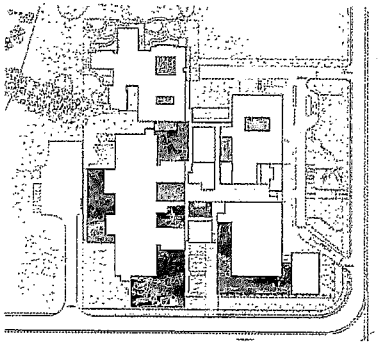
2.2.4 Connecting inside and outside

A key part of the architectural response is about connecting inside and outside – connecting internal spaces in the new hospital with external landscaped spaces and framing distant views.

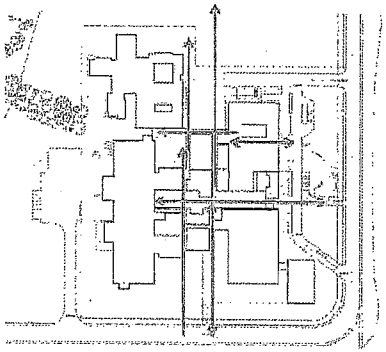
Access to daylight and views of landscape/nature have been shown to create positive perceptions of wellbeing, particularly in rehabilitation facilities where the built environment is likely to be experienced over longer lengths of stay.

A seamless integration of landscape and interior spaces is proposed along the public circulation spaces of the new hospital and in the enclosed courtyards designed as part of the clinical and teaching areas.

This design strategy not only provides a distinctive identity to each zone of the hospital but also serves to create an overall environmental amenity of tranquility and connection to nature.



Public circulation routes through the hospital and the positioning of buildings has also been used to frame distant views to the landscape beyond. These include landscape views to the north and to the south (toward the University's central campus) and to the east and west. These view lines are illustrated in the diagram right.

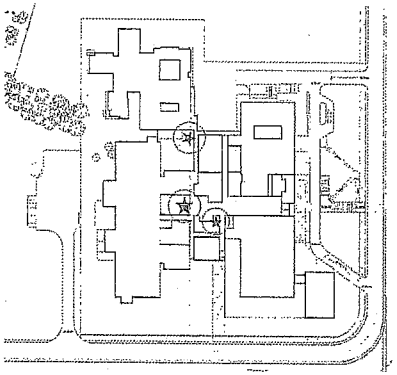


2.2.5 Integrated public art

The integration of art into healthcare facilities has been demonstrated to have strong therapeutic benefits for patients and also assists in wayfinding.

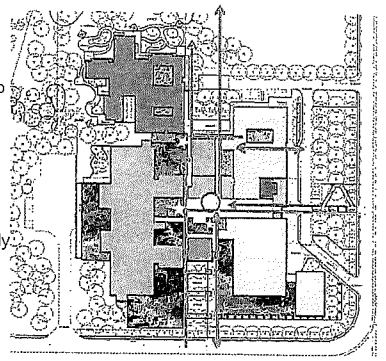
The architectural response for UCH includes recommendations for the incorporation of integrated art into the new hospital – both 2D and 3D art.

3D art/sculptural works can be used effectively to assist in wayfinding by acting as 'signposts' at key points in the facility. The Concept Design shows three external 3D artworks positioned on strategic view lines to assist patients and visitors in orienting themselves at 'intersections'. The artworks can be viewed from multiple view lines/approaches. These positions are illustrated in the diagram right.



2.2.6 An integrated design concept

The architectural/design approach for the hospital is an integrated one - one which takes into account constructibility, capital cost effectiveness, future maintainability and future expandability but also puts appropriate focus on creating a high quality amenity for patients, staff and students.



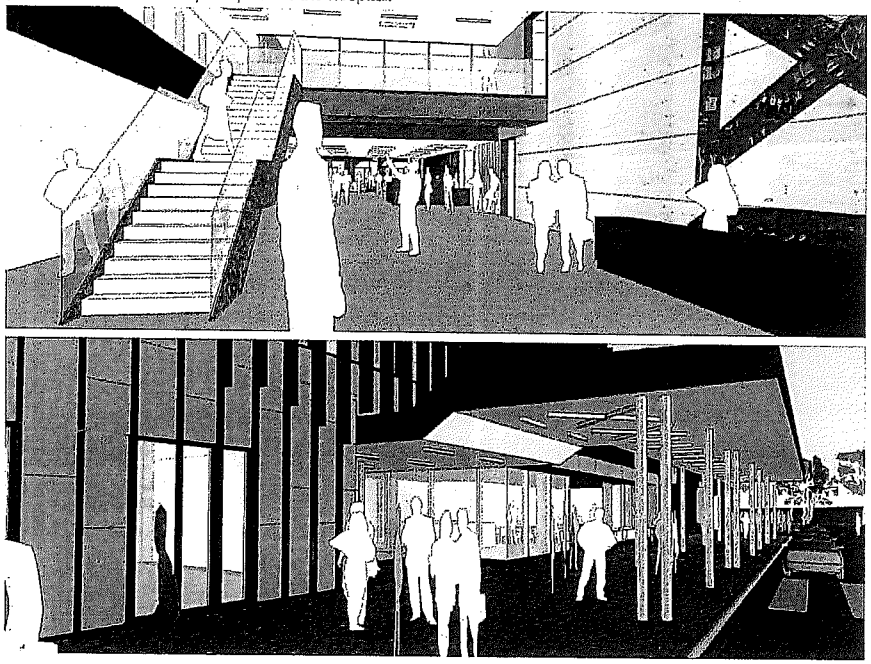
The architectural design response which effectively integrates the concepts of distinctly articulated building elements, varied garden designs, connections between inside and outside, the framing of distant views and the incorporation of public art will produce a highly legible and supportive therapeutic environment for the hospitals views. The integrated architectural design proposal is illustrated in the diagram right.

2.2.7 Outline description of the concept design

This section presents an outline description of the new facility.

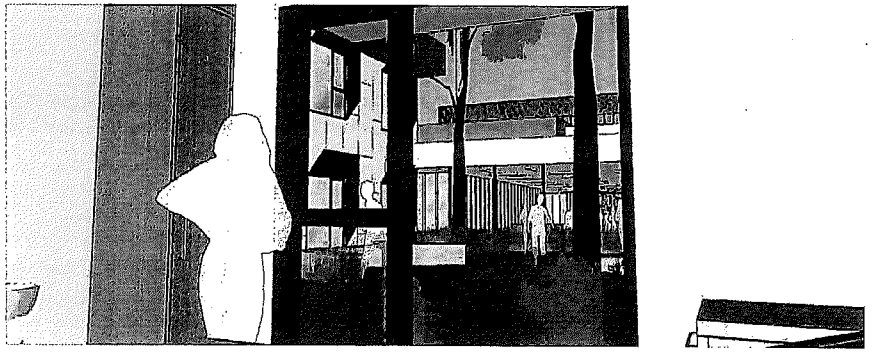
Patients, carers and visitors arriving at the new Hospital will arrive undercover at the main entrance located on the eastern side of the new facility. The Hospital's cafe is located immediately adjacent to the main entrance as a central activity 'hub' and has views to the outside.

The main foyer space is proposed as a two storey high volume with clerestory lighting bringing controlled daylight into the arrival space. The entry foyer includes a concierge desk (for volunteers) and a main reception desk which is positioned at the central pivot point of the hospital.

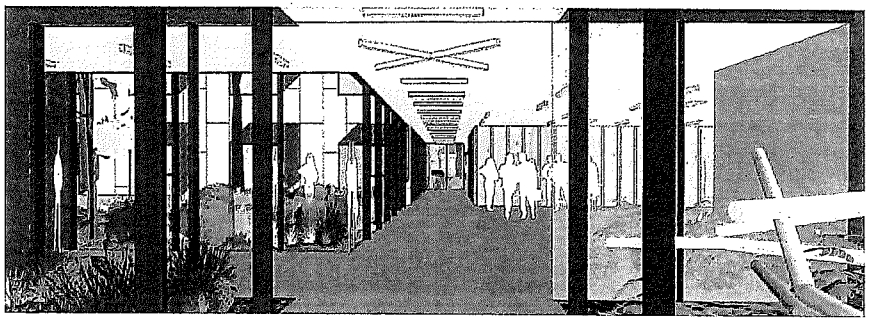


Two passenger lifts are located directly across from the reception desk and these take patients and patients up to the upper level of the rehabilitation inpatient areas and staff and visitors to the office and workstation areas located on the first floor.

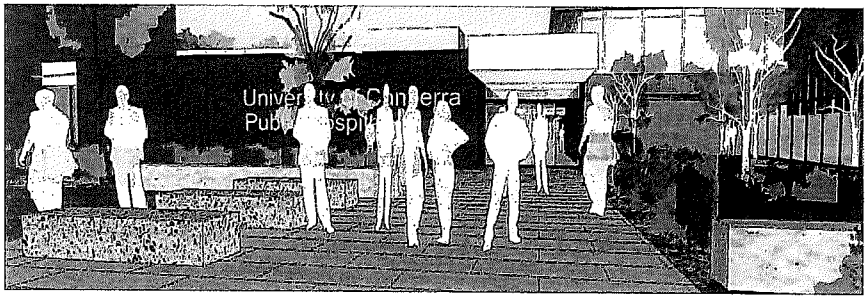
A landscaped courtyard space at the end of the main foyer provides both a key focus for this arrival space and a landscaped amenity for the inpatient wards beyond.



Moving through the foyer, patients and visitors move through a glazed link to the ground floor areas of the inpatient wards. A public circulation link from the foyer to the north provides a connection to the mental health inpatient areas and day programs.



The hospital can also be accessed from the south through the proposed secondary entry. This entry is articulated with a landscaped forecourt and its projecting canopy and signage announce the entry point. Arriving by this southern entry, patients and visitors are also able to directly see the main reception desk in the central foyer.



The main two storey building at the front of the hospital accommodates a number of key hospital functions.

The ground floor area to the left of the main entry accommodates the RACC day programs including the main gymnasium, consulting/interview rooms, meeting rooms and allied health services. The planning of this zone has been directed toward optimising functionality and 'clustering' of like services and also to providing views and connections to the outdoor garden spaces.

The hydrotherapy pool is located adjacent to this building and has direct internal access for patients accessing it from the rehabilitation inpatient areas. The hydrotherapy pool also has direct access point from outside via the main drop off/arrival area.

The hospital's shared spaces and student teaching areas are located on the ground floor of this front building, to the right of the main entry. This part of the building accommodates group rooms, meeting rooms, student amenities, mock wards and spaces for the teaching of physical skills. It has a separate student entry accessed off the main arrival/drop off area. Bicycle racks are also provided for students adjacent to this University entry.

The upper floor of the main building accommodates offices and workstations for hospital and University staff.

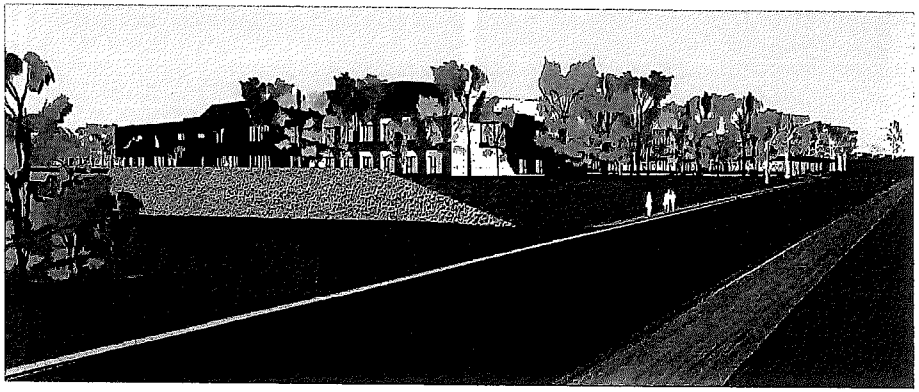
Hospital workplaces are located in the southern half of the building, directly above the RACC day programs. Many of the staff working in the RACC day program areas have their workstations in this office area on the first floor. The two levels are interconnected with an open stair which is skylit from above.

Workstation accommodation for the University Faculty and teaching staff is located in the right hand side of this building on the first floor. These workstations are also connected to the ground floor teaching spaces via a skylit internal stair.

Offices and workstations for the hospital Executive are located as a 'bridge' across the foyer space at first floor level and are collocated with the other hospital workstations and offices.

The two level RACC inpatient building is located on the western side of the new hospital and has direct access from the main arrival foyer space. The building is planned around a 'racetrack' design with a combination of single and double bedrooms positioned along the western and eastern faces of the building. Family rooms extend out beyond the ends of the building as feature elements and provide views out to the distant landscape.

The dining/lounge areas and inpatient gymnasium areas also extend beyond the main line of the building on the building's western side, making connections with the landscaped site context and offering views over to the distant landscape.

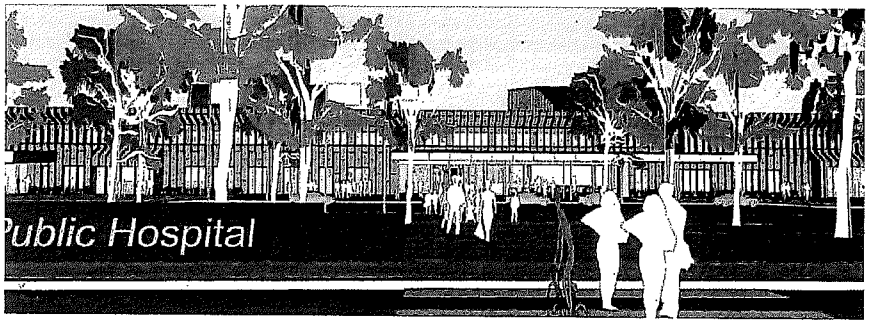


The single level mental health building is located to the north of the RACC inpatient building and accommodates the inpatient unit and the collocated mental health day programs. The building has been designed as domestic in scale with a series of pod 'houses', each with dedicated living areas and outlooks to garden areas beyond.

The central zone of the hospital accommodates the hospital's support and diagnostic services including medical imaging, pathology, back-of-house functions and pharmacy. The central location of these facilities delivers good accessibility to patients and visitors from both the inpatient areas and the day programs and teaching areas.

2.2.8 Summary

The concept design will be further developed and refined during the second half of the PSP work. This further evolvement will maintain the key objectives of delivering a cost effective and constructible building optimising functional arrangements and operational efficiencies producing a working and clinical environment which is supportive, collaborative and of high environmental amenity.

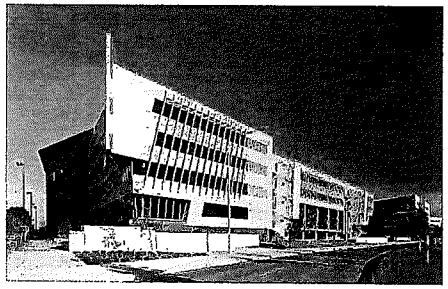


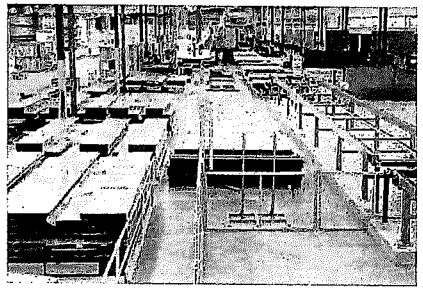
2.3 Interior Architectural Preliminary Concepts

2.3.1 Material Selections (key elements only)

Materials, systems and finishes have provisionally been selected for key elements the new hospital based on the following criteria:

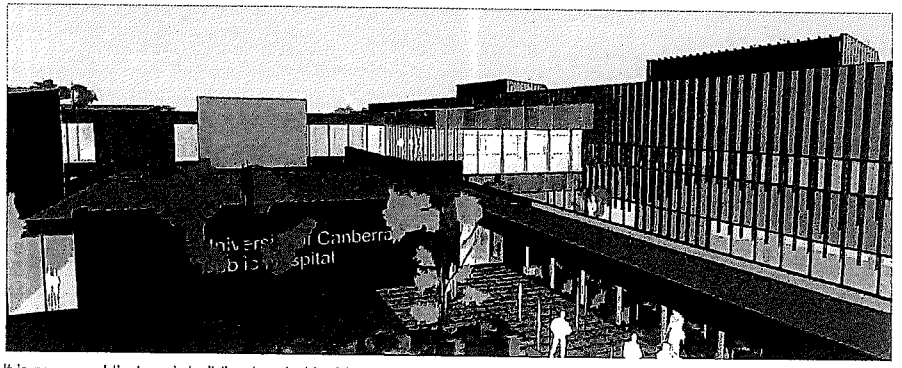
- use of conventional (not bespoke) materials, components and finishes typically found in commercial development projects in the ACT
- high durability and long term maintainability
- use of modular elements and systems which maximise opportunities for offsite fabrication and fast on site installation
- aesthetic qualities which contribute to the quality of the hospital environment and University of Canberra campus character





External Material Selections

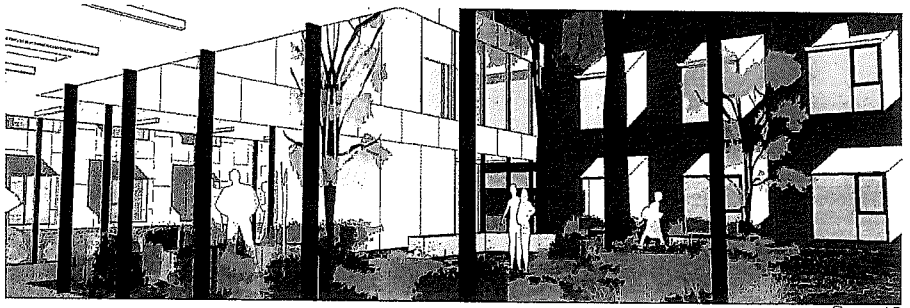
A composite metal panel cladding system is proposed for the external facades of all buildings in the new Hospital. This is based on a 700mm modular system which allows for the incorporation of solid wall panels, window elements, sunscreens and vertical fins.



It is proposed that each building be clad in this same system but in different colours and with different articulations of sunshades and window elements. This supports design concepts of creating separately identifiable building elements in the new hospital.

Some of the indicative facade treatments using the proposed modular cladding system are illustrated below.

The circulation spaces linking together the various buildings are proposed to be constructed as modular wards with vertical mullions at 1800mm centres. These would be infilled with either glass or aluminum composite panel infills.



The use of a single facade cladding system – with variations in colour and panel size/orientation – will minimise the number of trades on site and in particular will eliminate wet trades.

This facade system is used widely in the ACT and provides a robust, durable and highly maintainable facade solution.

Further illustrations of the proposed facade treatments of the new buildings are illustrated in Appendix A - Architectural Drawings.

The colours selected for building facades are in muted 'earth' tones with the canopies and entry points highlighted in strong chromatic colours.

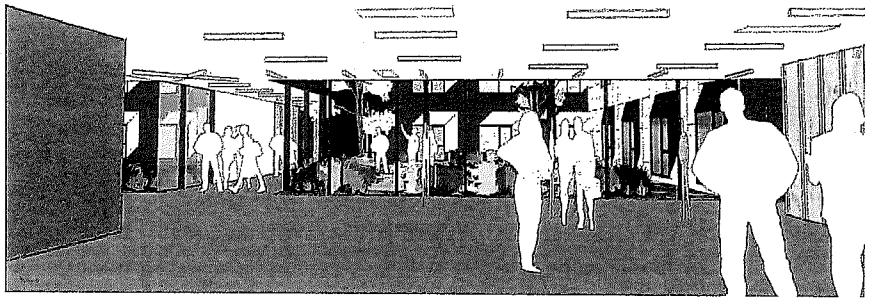
Other finishes have been selected for the external paving to the entry forecourts and the exposed aggregate pathways for other pathways and public circulation routes external to the Hospital. These are described in Section 2.5 *Landscape Design*.

Internal Material Selections

Internal materials and finishes have been selected using the same criteria as the exterior materials selections.

Particular emphasis has been given to materials and finishes which offer high durability and proven maintainability and in the case of ceilings systems and finishes which offer high levels of acoustic performance.

Floor finishes have been selected to address clinical requirements, to assist in wayfinding through the facility and to highlight 'feature' spaces in the new Hospital. Floor finishes include ceramic tiles (to the main foyer and circulation spaces), vinyl (to general clinical and back-of-house areas), specialist rubber flooring with underlay (to the gymnasium areas) and carpet tiles (to work spaces, meeting rooms, interview rooms, etc). The extents of these proposed floor materials are illustrated in the floor plans included in Appendix A.



Ceiling Finishes

Ceiling finishes have been selected both for acoustic performance and to act as 'feature' ceilings in designated areas of the facility. Ceiling finishes include perforated flush plasterboard (for public spaces and for general clinical spaces), 1200x600 suspended acoustic tiles (for work spaces, meeting rooms, interview rooms, etc) and perforated timber veneered panelling (for feature ceilings). Drawings showing the extents of these ceiling systems are included at Appendix 1.

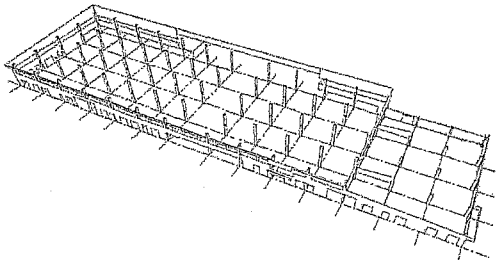
Wall Finishes

Wall finishes have also been selected with a focus on robustness and maintainability. Proposed finishes include a range of 'feature' internal cladding systems/materials for the buildings public spaces (e.g. timber veneered panels) and painted plasterboard, vinyl and Powerscape in the clinical areas of the new building.

Internal wall finishes selections are illustrated in Appendix H on this Report.

2.4 Constructibility

Constructibility of the new facility has taken into account through:



- use of modular, prefabricated elements and systems offering fabrication off site (and minimising onsite 'wet' trades)
- standardised structural grids/modular building elements
- use of simple forms including skillion roofs

These strategies in combination will facilitate the fast tracking of the hospital's construction. Facade elements and internal cladding systems can be fabricated in the factory concurrently with civil works and construction of the primary structural frame on site.

As noted above, all external and internal materials and finishes have been selected from a suite of modular products and systems which are readily available and typically used in commercial developments in the ACT.

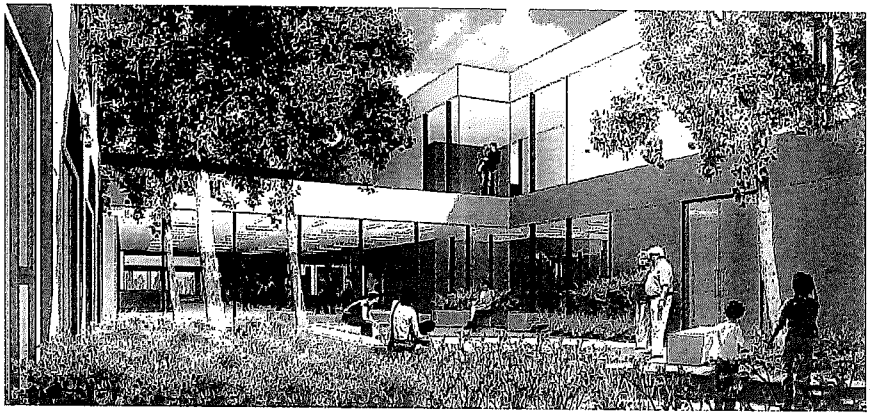
2.5 Landscape Design (incl Water Sensitive Urban Design)

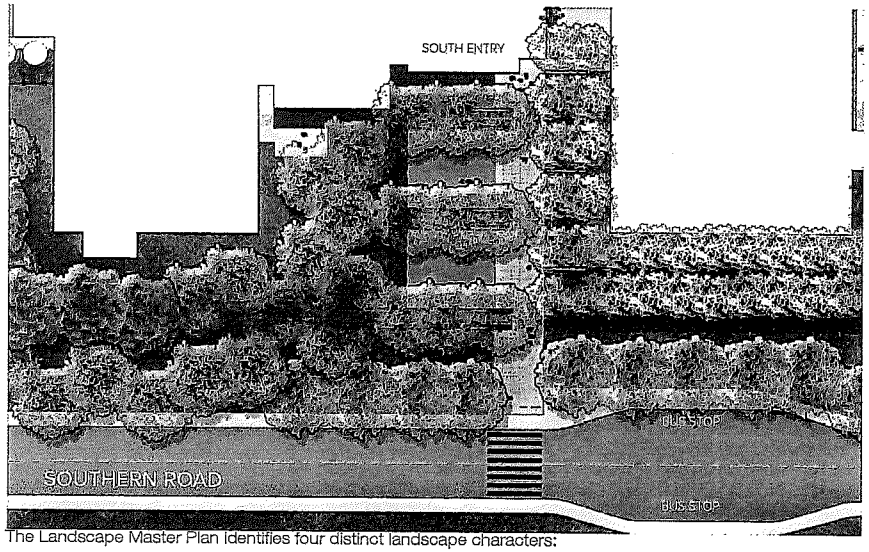
2.5.1 Landscape Design Intent

The landscape design to broad landscape areas will be consistent with the University of Canberra Landscape Master Plan and will deliver a low water use, low maintenance cost landscape that is relatively self-sustaining with minimal mechanical or resource inputs once established.

The campus landscape character is derived from the following key principles (from the UC Campus Master Plan):

- The landform that establishes the campus setting and planning structure
- Views and vistas to the broader Canberra setting that are 'borrowed' into the campus
- The bush setting that extends into the University where it is formalised in the campus plantings
- Planting and vegetation that express the way in which landscape layers and other systems intertwine
- A landscape experienced most directly through pedestrian circulation
- A memorable experience enjoyed after a single visit.





The Landscape Master Plan identifies four distinct landscape characters:

1. Gridded white trunked Eucalypts
2. Randomly sited black trunked Eucalypts (and other dark trunked trees)
3. Grasslands and water/swales/wetlands
4. Colour in ground plane plantings

The proposed landscape design to the Sub Acute Health Facility will reinforce the native landscape character of the campus. The design proposes several scales of landscape space from broad external areas that capture the open quality of the campus landscape and allow views to the surrounding landscape. Internal landscapes are considered 'captured' landscapes or spaces, and each is proposed to have a distinct character, to assist on general wayfinding and to reflect the differing façade treatments to the four key building functions

Plant species selection will favour locally occurring indigenous plants to all external areas, except in areas where function precludes such plants, in parts of the Sensory gardens and the Rehabilitation Therapy gardens.

2.5.2 Regulated Trees

There are 22 Regulated Eucalyptus trees (Manniferra, radiata, rubida and viminalis) on the block. Approval is requested for removal of 16 of these Regulated trees. All other Regulated trees are proposed for retention. No 'protected trees' under the ACT's Tree Protection Act 2005 are located on the site.

The Tree Survey undertaken 11/12/12 (Appendix J) stated that the majority of trees identified on site were part of dense roadside plantings, and had limited ecological values. There are no 'Remnant' Eucalypts on site. Further, trees on the site were generally of a medium quality, providing aesthetic value in the landscape, however due to their density often had poor form or structural deformities (eg twisted trunks, leaning and stunted growth).

A number of options for building siting were considered as part of the design process. The final proposal has a main north-south circulation axis, with drop-off / main entry on the eastern leg of the ring road and loading access from the southern leg of the ring road. Alternative orientations for the all of these items were considered, as were different arrangements of the single and double storey volumes. The final location of the buildings, courtyards and roadways on the site is the outcome of a complex set of factors, including optimum adjacencies of departments, views and solar access (particularly for patients), required setbacks from the ring road, traffic management, and balance of cut and fill for site excavation. Future expansion zones have also been identified. Ultimately the regulated trees on site are located in such a way that if the buildings were re-sited to ensure the trees were retained, many of the other siting requirements would not be satisfied.

2.5.3 Water Sensitive Urban Design

WSUD principles will be applied to the precinct landscape to maximise the use of rainfall and collected runoff to actively assist in landscape management. Techniques will include:

- Collection of run-off from roads and paved surfaces and movement through the landscape through use of swales, bio-retention infiltration trenches and wetland planting strips, which will increase public awareness of water movement across the campus;
- 'Xeriscape' plant species selection to match the varied aspects of the building with regard to drainage, soil moisture, exposure, shelter, sun, shade, aspect and shading of urban heat sinks such as roads and paved areas

2.5.4 Irrigation Provision

In keeping with the WSUD and Xeriscape principles, irrigation of garden beds and grassed areas has been minimised.

50% of the mulched garden beds are proposed to be irrigated (2800m2). These areas will be all internal landscapes and all landscaped areas on podium, as well as key landscape zones to the Adult Mental Health building periphery and the southern entrance zone.

Irrigated grass is restricted to 480m2, being the lawn areas immediately adjacent to the southern entry and the lawn north of the Pharmacy and Shared Education.

2.5.5 Precinct Character

The overall landscape concept provides for two perimeter landscape characters:

Gridded white trunked Eucalypts with grass/low ground cover understorey to the north -south and east-west sections of the proposed roads;

Black trunked, informally spaced trees to the residential interfaces to the southwest, west and north western areas. These landscapes will present a 'fuzzy' edge of trunks and foliage to link the project back into the wider campus landscape.

'Captured' landscapes

The internal landscape spaces are considered to be individual 'captured' landscapes, each with a distinct planting theme and structure, some with trees, some without, some formal and some informal, to suit the adjacent function and to provide variety to the external spaces when traversing the corridors of the facility.

Foliage colour and flower colour is used to further differentiate each individual space.

Sun and light will vary over the seasons, this has influenced selection of landscape structure to each of the captured landscapes. This will be more apparent in external spaces south of two-story elements.

Structured Planting Areas

Planting to building edges to the eastern half of the precinct adjacent to building facades is proposed to be 'block' or otherwise formally arranged planting layouts using Australian native plants as understorey, and smaller indigenous tree species where suitable.

- High amenity courtyards are proposed to be 50% (average) hard pavements, to allow for use by patients at all times of the year;
- Plant species will be wholly Australian native plants, except in the Therapy garden and parts of the sensory gardens.
- Garden beds may be raised in some courtyards to provide external seating areas;
- Plant species will be selected with a view to minimise maintenance, given the internal nature of most of the courtyards;

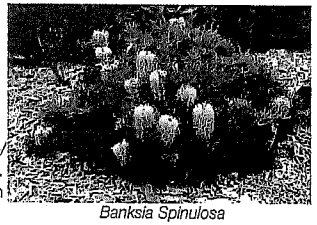
'Fuzzy' Planting

As a counter to the gridded formality of the white Eucalypt trunks, informally planting groups of black trunked Eucalypts, Callitris and Casuarina Planting form the western edge to the precinct.

Views out to the north and west will be framed by black trunks, with the canopy height varying between the Eucalypts and other trees modulating the depth of the view.

Callistemon

- Existing areas of relatively undisturbed natural grassland west and north of the building platform will be retained.
- Planting density will increase closer to the internal road network, and will include locally occurring indigenous shrubs and forbs/grasses close to back of house zone to provide a screening barrier from public roads.



Banksia Spinulosa

2.5.6 Precinct Descriptions

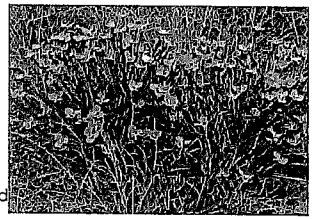
Refer to key plan on the landscape drawings to identify each of the landscape spaces.

1 Mental Health Courtyard BreakOut Space - 'Grey Garden'

This space contains two evergreen trees, Eucalyptus cinerea, and other blue/grey foliage understorey plants including Dianella, Westringia and Patersonia. Hard pavements consist of an angular path layout, allowing circumnavigation of the space, with external seating.

2 Mental Health Courtyard Day Use Space

This space is treated as a recreational space, being adjacent to a meeting room. It is paved, allowing flexible use, such as table tennis, loose furniture and casual seating.



Patersonia

3 Mental Health/RACC interfaces – 'Banksia Garden'

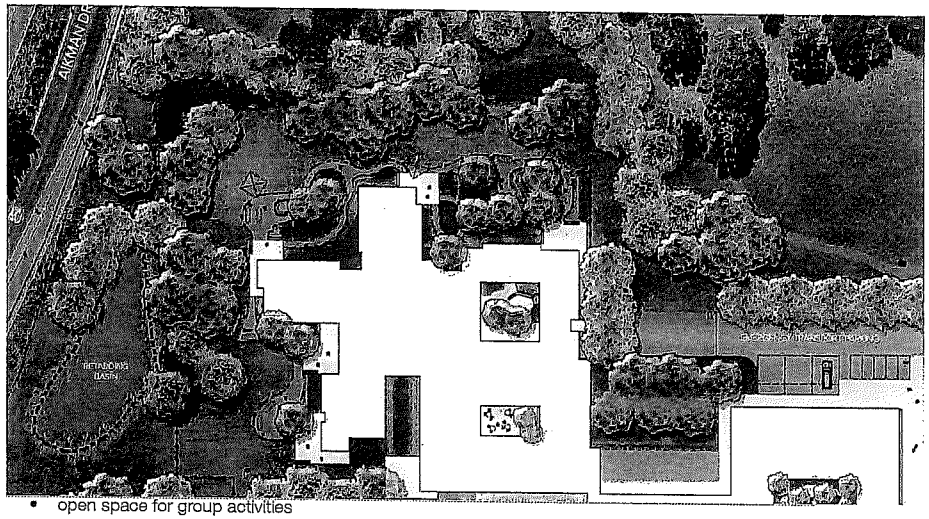
The northern section of this space provides an external day use area for mental health. A deck extends south from the building. The southern section provides for a planted break between the two building functions. Plant species include Banksia serrata, Banksia spinulosa, Prostrate Banksia ground covers, and other Proteacea plant species such as Dryandra ssp. Yellow flowering grasses and forbs form a small native meadow. Egress is possible through the planting in the event of fire or other emergency.

4 Therapy Courtyard – Room 1.179

The therapeutic mobility garden space (space with controlled access for supervised use of equipment) includes the following:

Angophora Costata

- Suitable environment for mobility assessment and training including paths of various surfaces including 'modwood' decking, irrigated grass, artificial grass, concrete, decomposed granite gravel, pea gravel, brick paving and stone flagging.
- Kerbs, kerb ramps, a small section of ramp at 7% grade, 3-4 steps, tactile indicators;
- A single handrail on level ground, handrails to ramps and steps;
- Two height adjustable clothes lines
- Four raised height garden beds and other raised planting levels



- open space for group activities
- sedan car for transfer practices
- shade from 'market umbrellas'.

This space will include a variety of functions and will require a multi-layered planting approach, including:

- Scented plants, colourful flowering plants;
- Plants that provide memory recall;
- Plants for shade and shelter
- Plants for horticultural therapy, including edible gardens and horticultural plots

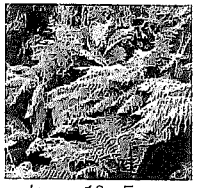
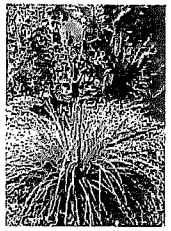


Image 10 - Ferns

The space will include weather protection from sun and rain and will be a smoke free environment.

5 GEM Courtyard

This space includes a portion of the 'modwood' deck adjacent to the Therapy Courtyard, and paths and paving leading to planted beds at paving level and raised beds to accommodate tree planting. Small deciduous trees are proposed to a raised planter for summer shade. Two market umbrellas are proposed to provide shade in the immediate term. A variety of scented and textured plants are proposed. The planting layout is structured due to the small scale of the space. Plant species are non-injurous.



Gahnia Siebere

6 Visitor Courtyard – 'Visitor Garden' Room 1.180

The recreational courtyard has been designed to be a relaxing recreational space for patients and their carers/family. It is a secure space which is located at the midpoint between the inpatient and day services for equitable access and will be designed to include:

- Fixed chairs and tables (to mimic community)

- Landscaped garden space
- provision for a portable barbecue.

The space will include weather protection from sun and rain and will be a smoke free environment.

River rocks, and red flowered shrubs and ground cover plants are proposed to this space, such as Correa, winter flowering Grevilleas and small Callistemon.

7 Yellow Garden - Light Well

This space is required as a light well to provide windows to the RACC bedrooms and a meeting room. The space consists of a concrete path for maintenance, and garden beds on podium. The space is viewed from the corridors accessing RACC and the central reception space.

The planting character is for yellow flowering plants, including medium sized Acacias, everlasting daisies and other small shrubs and ground covers.

8 Entry Zone

Hard pavement, timber and concrete seating forms, structured planting of Angophora hispidula, Poa, Xanthorrea and ground cover Grevilleas. The entry path is flanked to the west by two small irrigated grassed spaces, with seating opportunities in sun and shade to suit the seasonal climate.

9 Fern Garden - Light Well

This space is required as a light well, allowing for windows and glazing to the imaging rooms to the south. Located in the centre of the building, around the lift core, the fern garden is glazed to 80% of the perimeter, allowing views into the space from all corridors and the reception foyer. Tree ferns provide height, ground plane is proposed to be round river rocks, small ferns and native Violets.

10 Multi-faith /Education Breakout Space

50% of the space is paved, to allow for external use. The space is dominated by a single tree, Agathis robusta, or Kauri Pine, native to Western Australia.

11 'Blue Garden' - Light Well

This space is required as a light well, allowing for windows and glazing to the student and administration rooms to the south. The space is proposed to be planted with blue flowering and blue foliaged plants: proposed trees are Blueberry Ash, Eleocarpus reticulqtus, a narrow canopied, columnar formed small evergreen tree.

A concrete path allows for access for maintenance. Ground cover plants include blue flowering Dianella, Patersonia and Viola hederacea.

12 Gymnasium Garden

A small breakout space is provided from the gymnasium. The areas are paved, allowing for informal seating. A small linking path provides access to the southern entry path.

13 Gymnasium Outlook

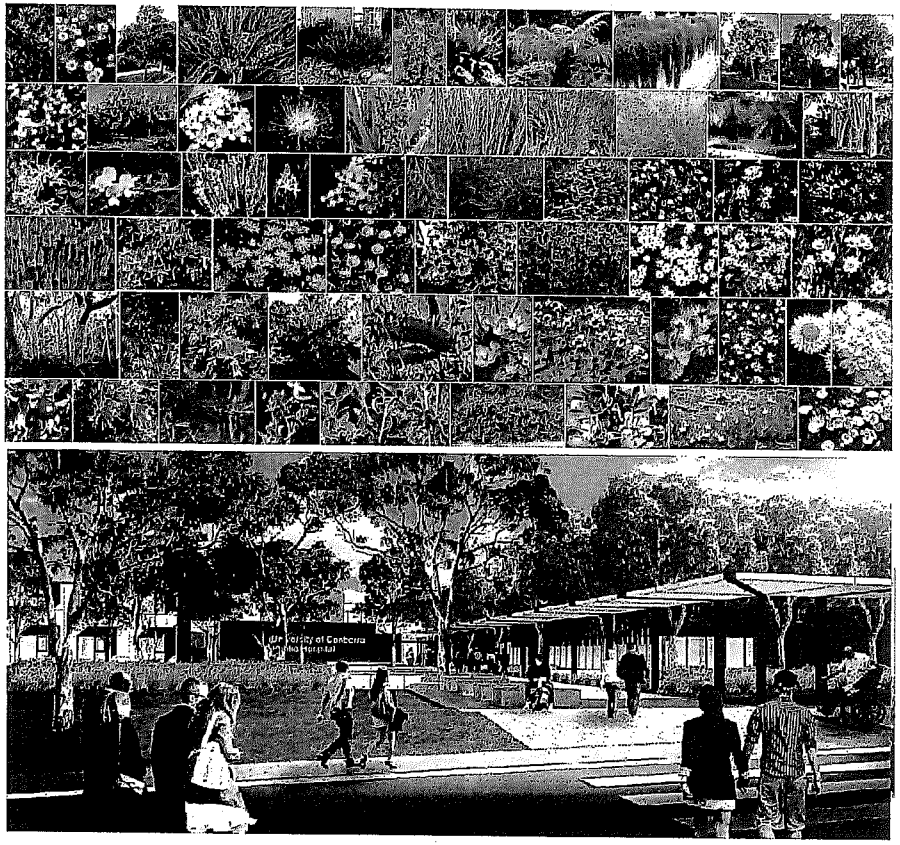
This garden is highly structured, consisting of small evergreen Tristaniopsis laurina, or water gum, in a double row on grid, and a mix of smaller evergreen shrubs, grasses and ground covers such as Carex, Xanthorrea, Myoporum and ground cover Grevilleas.

14 Structured landscape to road and links to carparking

The landscape takes cues from the campus master plan, providing gridded white trunked Eucalypts on a 10 x 8m grid, down the shallow slope from the north-south access road.

Grassing is unirrigated. Low ground cover and native grasses edge the pathway, ramp and drive access points to the main entry.

In keeping with the master plan, portions of the space are planted to locally indigenous flowering plants and grasses.



These act as a foil to the gridded white trunks either side of the entry ramp from the north/south access road. Plants include: everlasting daises, Kangaroo Grass, Rice Flowers, Native lilies and other native grasses.

15 Northern Garden

This space acts as a green backdrop to the main north-south internal corridors, and has provision for public art. A small section of irrigated grass fronts the northern façade of the building, grading up to native grasses, possibly containing the artwork, and is backed by salmon coloured trunks of Angophora costata. Past the Angophora the landscape blends into the 'fuzzy' black trunked Eucalypt/Casuarina/Callitris character that encloses the southwest, west and northwest sides of the precinct.

16 Sensory Garden and Mental Health External Spaces

The 'fuzzy' black trunked Eucalypt/Casuarina landscape extends up the landscaped batter to the main building platform. A 1200mm high fence is site at the base of the batter, out of view from inside the building and from individual bedrooms which provides a sense of open space to the north and west.

A variety of scented, textured and edible plants are proposed in small garden beds linked by decomposed granite gravel paths. The landscape treatment is informal and unstructured, allowing the sensory gardens to blend into peripheral shrub plantings.

Plant species within the fenced area are non-injurious.

17 Western Podium Landscape

The 'fuzzy' black trunked Eucalypt/Callitris tree planting continues to the west of the RACC building, allowing for shade and shelter. The space is on podium, tree planting is proposed to raised beds allowing 700-900mm depth soil. Other areas are proposed to be unirrigated grassing and garden beds, with 400mm soil depth over the basement.

The western edge of the podium is bounded with a narrow garden bed - planted with Hardenbergia violecea - a trailing climbing plant that will climb through the protective fence/balustrade and soften the edge beam above the basement.

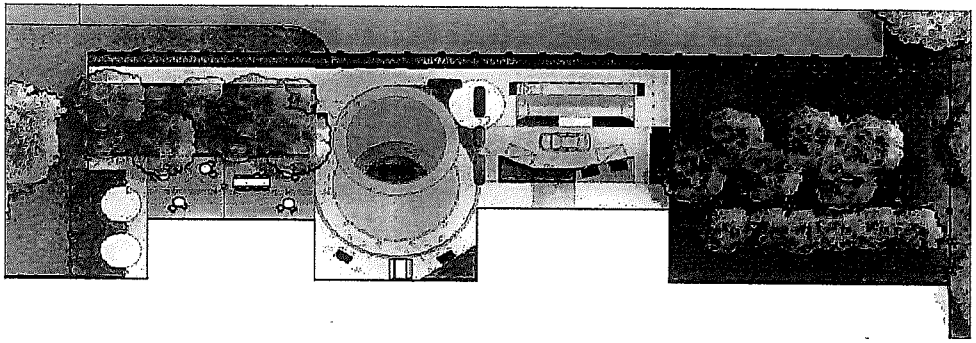
18 Residential interface – 'Fuzzy Garden'

The 'fuzzy' landscape character extends around the residential aged care facility, protruding out to the east-west access road, punctuating the change in the building functions and building forms. A mix of groups of Eucalyptus sideroxylon, Callitris endlicheri, and Casuarina ssp. are proposed. The change in landscape character aids in wayfinding and allows for distinct landscape treatment to each of the building programs.

19 Northern Landscape/Informal Walking Path

The northern section of the site is a relatively undisturbed portion of the site. It is bounded by Ginninderra Drive to the north and Aikman Drive to the west. The north western corner contains a detention basin created to assist in stormwater management.

A mown grassed walking track extents from the northern entry to the building out through the landscape. The path is a figure eight, allowing for a short walk or a walk of longer duration. Seating is provided to the track, in shaded areas and in sunny areas, to allow for seasonal shelter.



2.6 Environmentally Sustainable Design

Sustainable Design

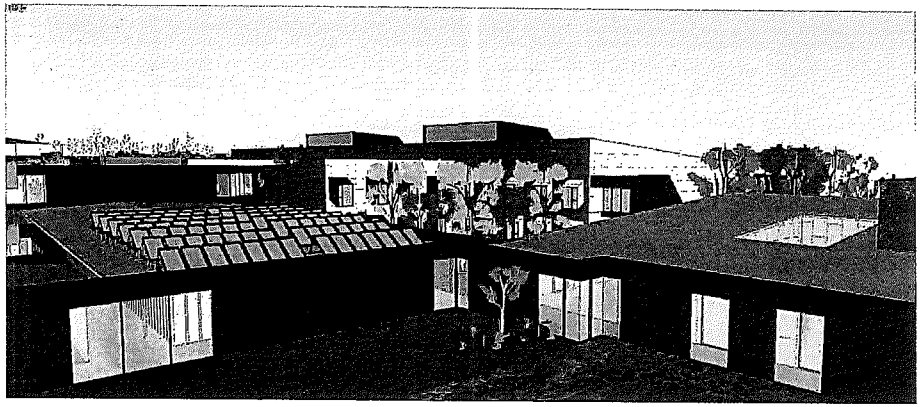
The proposal has been developed incorporating best practice design principles for environmentally sustainable materials and services. Some of these are listed below.

ESD Approach Included:

- External sun-shading
- Maximize daylight levels
- Rainwater reuse
- Water- efficient planting
- Independent commissioning agent
- Solar domestic hot water
- Photovoltaic Installation (Solar Panels) 50kW
- Operable windows for IPU
- LED lighting/ Energy efficient lighting. LED where available and commercial viable
- Occupancy sensors and lighting zoning
- Low VOC finishes
- Outdoor pollutant source control
- Low water flow fixtures
- Material durability
- CO2 monitoring and control- to be included in admin areas
- End- of- trip cyclist facilities UC facility

ESD Opportunity:

- Expanded PV arrays
- Central energy plant- May be considered in the future
- Co-generation- Not currently considered. Small unit maybe considered
- Ground- source heat pumps- Not currently considered, but suits ACT
- Electric vehicle charge points- possibly considered in future carpark



Section 3 | Planning Documentation

Section 3 | Planning Documentation

3.1 Statement Against Relevant ACT Planning Criteria

Property Information

Site Identifier:

Part Block 1 Section 3 Bruce

Site Address:

University of Canberra, Health Precinct, corner "Aikman Drive & Ginninderra Drive

Site Area:

48,000m2 block to be subdivided from Block 1 by Deed of Agreement (see Section I)

Land Use Zone:

Community Facility CFZ Zone of the Territory

Development Code:

Community Facility Development Code **Site Description**

The site is part of the University of Canberra's Bruce campus – at its north western corner - and close to the intersection of Aikman Drive with Ginninderra Drive. The University of Canberra has a distinctive purpose-built campus developed within a landscaped setting of predominantly indigenous trees and plantings.

The 2012 Campus Master Plan is a narrative for campus development, providing a strategic and spatial framework for development that defines the context, nominates preferred land uses and provides guidelines for planning and design. The campus spatial framework extends and enhances the existing planning structure and is defined by three integrated plans:

- Landscape context plan
- Circulation plan
- Precinct plan defining preferred land uses.

The proposed hospital site lies within the health precinct identified by the Precinct Plan. The Master Plan states that this precinct is for the future development of University community health and teaching clinics and other public and private sector health organisations.

The precinct is close to public transport routes with opportunities for vehicular access from both Aikman Drive and Ginninderra Drive. This part of the campus is undeveloped and has capacity for the provision of on-campus car parking facilities to support patients, carers and health care employees.

Description of the proposed land use and development

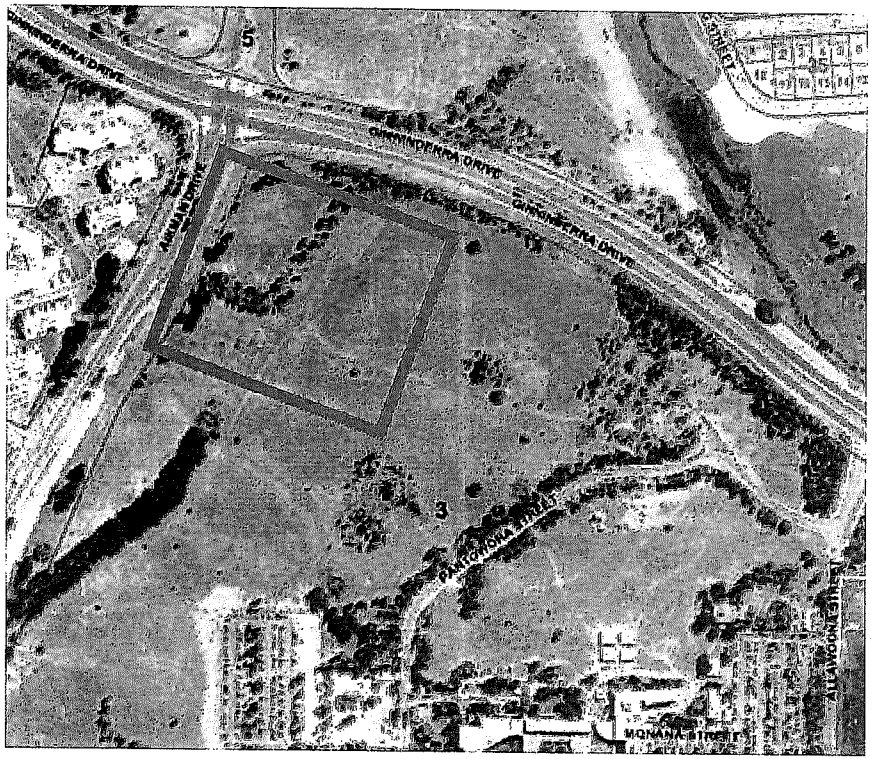
The University of Canberra Hospital (UCH) will continue the expansion of health and hospital services in the ACT. The existing ACT public health care system needs to expand to meet future health demand created by an ageing and growing population and consumer expectations. The UCH will respond to this demand as well as allowing the transfer of the majority of adult rehabilitation and subacute facilities of the Canberra Hospital (TCH) and Calvary Hospital (CH) to the new north-side hospital.

The UCH will provide rehabilitation, aged care and mental health services for the populations of the ACT and neighbouring NSW, as well as educational facilities. The hospital will provide 140 overnight inpatient beds made up of 20 Mental Health and 120 Rehabilitation beds. In addition to the overnight beds, the hospital will provide 75 day places (30 bed equivalents) made up of 25 Mental Health, 25 Rehabilitation and 25 Geriatric Day places. Acute services including emergency department services will not operate from the site.

The UCH will be a teaching hospital that provides a forward-looking approach to patient care by multi-disciplinary teams, teaching, training and research focusing on patient and professional outcomes. The Territory will be responsible for the design and construction of the facility, including University related areas, and the Access Road. The University of Canberra will be responsible for the design and construction of a car park to support the proposed UCH and to satisfy the Territory's requirement for approximately 700 car spaces on site.

The project involves:

- clearing of land and site preparation
- construction of hospital buildings and car parks
- installation of associated services and infrastructure, including road connections to Aikman Drive and Ginninderra Drive;
- landscaping of open space areas;
- a backup generator under 4MW
- operational use of the buildings as a sub-acute hospital.



Deed of Agreement

The ACT Government has signed a Deed of Collaboration and a Deed of Acquisition and Development with the University of Canberra (24 December 2013) to build the new sub-acute hospital on land currently leased by the University, and to facilitate joint teaching and research activities.

Part of Block 1, Section 3, Bruce, ACT has been selected as the preferred site for the proposed hospital. Under the University of Canberra Hospital Acquisition and Development Deed it has been agreed with the University of Canberra

Community Facility Zone Development Code

General Development Controls

Element 1: Restrictions on Use

Rules	Criteria
1.4 Development proposals affected by approved lease and development conditions	
R6 The development proposal complies with approved and current lease and development conditions applying to the site. Where there is an inconsistency between the lease and development conditions and the provisions of this code, the former shall take precedence, but only to the extent of any inconsistency.	C6 The development meets the intent of any approved and current lease and development conditions applying to the site.

Complies.

Consequent lease and development conditions will be satisfied under the terms of the Deed of Acquisition and Development.

Element 2: Building and Site Controls

In this element: **Desired character** means the form of development in terms of siting, building bulk and scale, and the nature of the resulting streetscape that is consistent with the relevant zone objectives.

Rules	Criteria
2.1 Building Height	
R7 The maximum building height is: a) for that part of the building within 30m of a residential block- the greater of the following: i) 2 storey ii) the maximum number of storeys permitted on that residential block b) in all other cases- the lesser of the following: i) 4 storeys ii) 15m height of building For this rule: **Residential block** means block that has at least one of the following characteristics - a) zoned residential b) affected by a lease which authorises residential use but does not include any land intended to remain as unleased Territory land or public open space.	C7 Buildings achieve all of the following: a) consistency with the desired character b) a scale appropriate to the proposed use c) reasonable separation from adjoining developments d) reasonable privacy for dwellings on adjoin residential blocks e) reasonable privacy for principal private open space on adjoining residential blocks f) reasonable solar access to dwellings on adjoin residential blocks and their associated principal private open space.

Rules	Criteria
2.3 Storage	
R9 Outdoor storage areas are screened from public view from any road or other public area.	C9 Where the proposed use of the site requires open areas for storage of goods and materials, adequate provision is to be included in the design layout of the site and should not encroach on car parking areas, driveways or landscaped areas and be adequately screened from public view.

The proposal meets R7 b) in that it is under 4 storeys and 15m in height. The proposal will meet R9 in that all storage areas will be screened from public view.

Element 3: Built Form

Rules	Criteria
3.1 Materials and Finishes	
There is no applicable rule.	C10 Where development presents a blank façade to an adjoining block or public space, a visually interesting architectural treatment is applied to that wall, through the use of one or more elements such as colour, articulation, materials and shadows.
There is no applicable rule.	C11 Buildings use high quality materials and have façades with visually interesting architectural treatments through the use of one or more elements such as colour, materials, shadows or deep framing profiles.
3.2 Interface	
There is no applicable rule.	C12 Where appropriate, compatible uses of any existing buildings are integrated with new development and provide physical connections and linkages between buildings, and between buildings and public spaces.
There is no applicable rule.	C13 Elements of the development that interface with a street promote an attractive streetscape.

The proposal includes facade design consistent with C10 and C11, high quality, visually interesting architectural treatments consistent with the UC planning intentions for the campus. There is currently no interface with existing buildings at this corner of the UC campus. The proposal is consistent with C12 and C13 in establishing an attractive streetscape of the primary address to the hospital and in anticipation of future development. A full schedule of materials proposed are illustrated in Appendix H of this Report.

Element 4: Traffic Impact

Rules	Criteria
4.1 Traffic Generation	
There is no applicable rule.	C14 The existing road network can accommodate the amount of traffic likely to be generated by the development.

The proposal includes a new access road connecting onto existing arterial roads, and has been endorsed in principle by Roads ACT, TAMS (see separate Traffic & Parking Report).

Element 5: Environment Protection

Rules	Criteria
5.1 Water Sensitive Urban Design	
R15 This rule applies to sites 5,000m2 or larger. The average annual stormwater pollutant export is reduced for all of the following: a) suspended solids by at least 60 per cent b) total phosphorous by at least 45 per cent c) total nitrogen by at least 40 per cent compared with an urban catchment with no water quality management controls. Note: Compliance with this rule is demonstrated by a water sensitive urban design outcomes plan endorsed by a suitably qualified person.	This is a mandatory requirement. There is no applicable criterion.
R17 This rule applies to sites 2,000m2 or larger. Provision is made for one or more of the following: a) the storage of stormwater equivalent to at least 1.4kl per 100m2 of impervious area, and its release over a period of 1 to 3 days b) runoff peak flow for the 3 month ARI storm to be no more than pre-development levels and release of captured flow over a period of 1 to 3 days. Note: A condition of development approval may be imposed to ensure compliance with this rule.	This is a mandatory requirement. There is no applicable criterion.
There is no applicable rule.	C18 Underground piping of natural stormwater; overland flow paths minimised.

The proposed development is able to satisfy R15, R17 and C18 (see Hydraulic Report).

5.2 Sediment & Erosion Control	
R19 This rule applies to sites larger than 3,000M2. Development complies with a Sediment & Erosion Control Concept Plan endorsed by the Environmental Protection Authority. Supporting document : A Sediment & Erosion Control Plan is prepared in accordance with EPA "Environmental Protection Guidelines for Construction and Land Development in the ACT 2012" Note : A condition of development approval may be imposed to ensure compliance with this rule.	This is a mandatory requirement. There is no applicable criterion.
5.3 Earthworks	
There is no applicable rule. Complies with C20 in minimising earthworks to create a level bench for the hospital main floor.	C20 The extent of earthworks is minimised.
5.4 Tree Protection	
R21 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 development application to the Conservator of Flora and Fauna.	This is a mandatory requirement. There is no applicable criterion.

5.6 Contamination	
R23 Development complies with an environmental site assessment report endorsed by EPA. (Refer Section 4.5)	This is a mandatory requirement. There is no applicable criterion.

The proposed development will comply with the submitted Sediment & Erosion Control Concept Plan.
The proposal complies with R16 and R19 through hydraulic and civil design measures. The proposal includes landscape design, Tree management and protection plans that comply with R21. There are no protected trees on the site.

Element 7: Services and Utilities

Rules	Criteria
7.1 Waste Management	
R25 Development complies with the waste facilities and management measures endorsed by Territory and Municipal Services Directorate. Supporting document: Written confirmation by Territory and Municipal Services Directorate 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.	This is a mandatory requirement. There is no applicable criterion.
W 7.2 Utilities	
R26 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 access provisions and asset clearance zones. Note: Where there is conflict between planning and utility requirements, the utility requirements take precedence over other codified or merit provisions.	C26 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.
7.3 Waste Water	
R27 Subject to ActewAGL approval, all under cover areas drain to the sewer. Refer Appendix C for Infrustructure Drawings.	This is a mandatory requirement. There is no applicable criterion.

The waste management facilities are being coordinated with the neighbouring development of Lawson Stage II, to establish a new mains connection under Ginninderra Drive that will serve both locations and comply with R25. Relevant authorities are aware of the development and endorsement in line with C26 is expected.

3.2 EPBC Referral

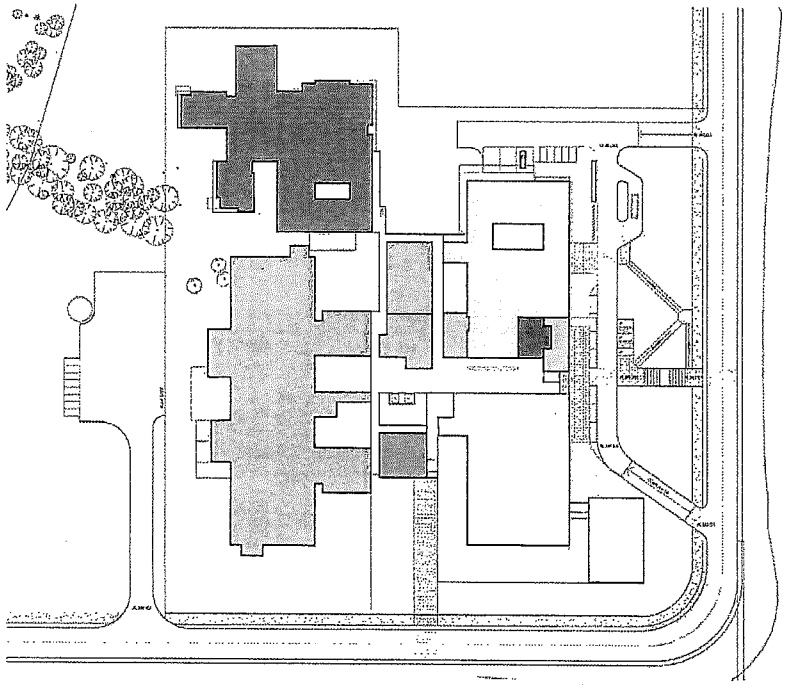
On 18 October 2013 the ACT Health Directorate referred the proposed development to the Commonwealth Minister for the Environment as required under the EPBC Act. The Minister's decision was that the proposed project is a controlled action and that assessment under the EPBC Act was required. The outcome of this assessment was that the Minister approved the proposed development subject to conditions. These conditions include the incorporation of an offset site into the Pinnacle Nature Reserve for conservation purposes. Evidence of the formal transition must be provided to the Commonwealth Department of the Environment by October 2016. Refer Section 4.1

Request for exemption, Section 211 Planning and Development Act, 2007.

The ACT Government's planning and land authority (EPD) has evaluated a request for exemption under Section 211 of the Planning and Development Act 2007 from a requirement to prepare an Environmental Impact Statement for the proposed development. This evaluation has considered supporting information and comments received from referral entities.

The Authority's recommendation was that the supporting information submitted with the request had adequately identified and considered those matters of potentially significant impact and that further environmental assessment was not required. Further, the Authority recommended that the Minister grant an exemption for the proposed development, pursuant to Section 211 of the Act, from a requirement to complete an Environmental Impact Statement.

The ACT Government's Minister for Planning has since issued Notifiable Instrument N12014-653 stating that in accordance with section 211 of the Planning and Development Act 2007, I have agreed that the University of Canberra Hospital will not require further environmental assessment. (9 December 2014).



Mitigation Measures Table from EPBC Report

No.	Consideration requirement	Endorsement/ approval	Development stage	Details of considerations
1	Offsets strategy	DoE	As required by EPBC Act approval	Preparation of an Offset Management Plan consistent with the EPBC Act decision. Refer to Section 4.1 — EPBC Act Decision of this report for a copy of the EPBC Act decision.
2	Develop and implement a Conservation Management Plan	Heritage Council	Prior to heritage management and salvage works being undertaken	A Conservation Management Plan authorised under section 76 of the *Heritage Act 2004* to clearly identify the Project's heritage impacts and outline the aims and methods of heritage impact mitigation works to be undertaken.
3	Develop and implement a construction environment management plan	Planning and land authority	Prior to construction	This should address the commitments made by the proponent in respect of the CEMP as outlined in this document The CEMP should include, but not be limited to including: • weed management plan; • stormwater management plan; • pollution control plan; • construction traffic management plan; • waste management plan; • noise and vibration management plan; • air quality and dust management plan; and • sediment and erosion control plan.
4	ACTEW Water asset acceptance	ACTEW Water	Prior to construction	In principle agreement from ACTEW's Hydraulic Asset Acceptance section is required for the water and sewerage servicing of the proposed development.
5	Bushfire	Emergency Services and the Authority	Development application and prior to construction	Prepare and implement a bushfire hazard management plan during construction and operation.
6	Mitigation measures	The Authority	Development application, prior to construction & during construction	All mitigation measures identified in this report should be incorporated into the design of the development, development application documentation, conditions of approval and relevant construction management plans.

3.3 Community & Recreational Facilities Locational Guidelines General Code

The proposed development is able to satisfy the general location guidelines for a hospital facility as follows:

- close to arterial roads
- quiet location
- Noise separation from residential areas
- Northerly aspect preferred
- Provision for emergency vehicle access

3.4 Parking and Vehicular Access General Code

(see Parking and Traffic Impact Assessment Report, Section 4.4)

Community Facility Zone

Locational requirement

Development	Long Stay Parking	Short Stay Parking	Operational Parking	Visitor Parking
All other development in community facility zone	Within 200m	On-site or within 100m	On-site	On-site or within 100m

Parking Provision rates for Community Facility zones

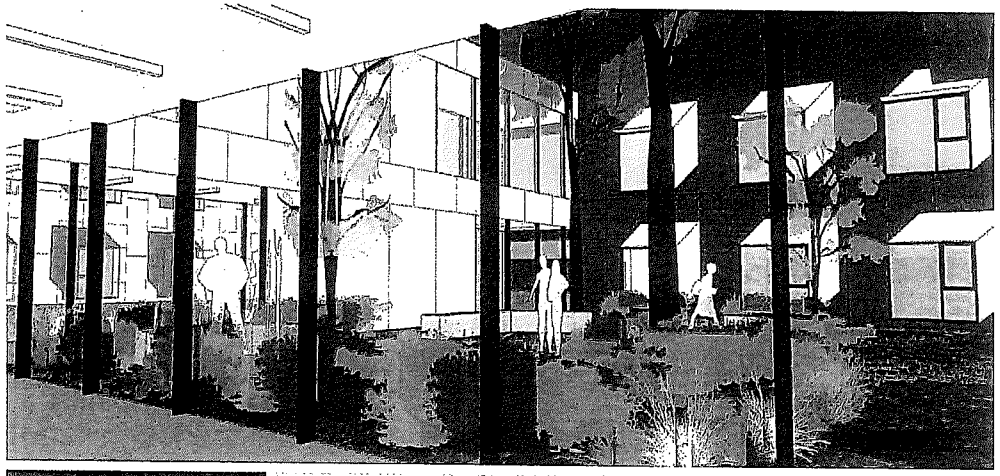
Hospital: 0.8 spaces/ peak shift employee plus 1.3 spaces/ bed

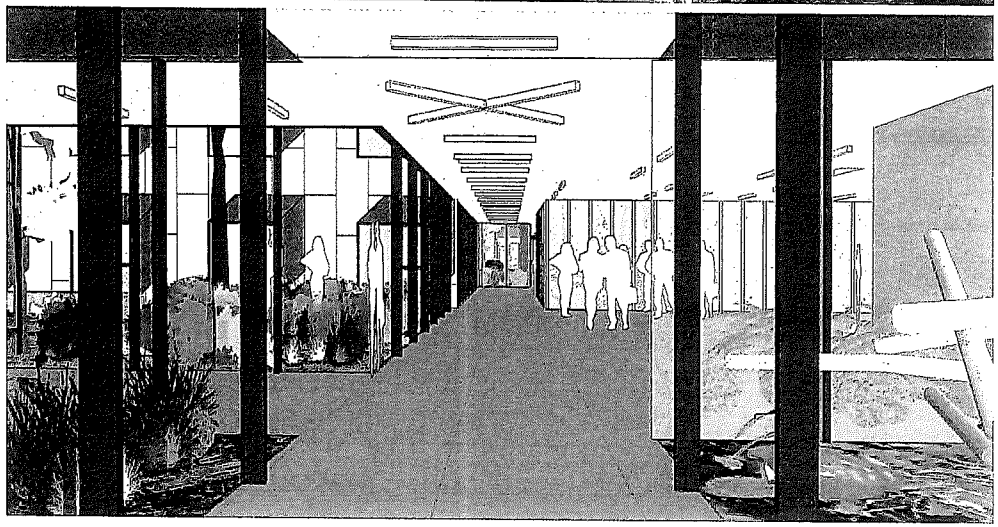
Parking for the proposed hospital will be provided by the University of Canberra outside the new road, in compliance with the Code's locational requirements. The proposal includes parking spaces for operational vehicles on site. (Refer to separate parking report and the site plan).

Bicycle Parking General Code

The Bicycle Parking General Code applies to all developments, including a hospital and Education Establishment.

Part 3 of the Code requires an individual assessment for the number of bicycle spaces for both the Tertiary Education facility, and Hospital uses. Bicycle parking is briefed in the Functional Design Brief as a space of 50m2 in the Shared Education and Research section, located adjacent to the entry. The Departures Document dated January 2014 for ACT Health areas specifies bicycle parking at a rate of 1 space per 30 beds, which are accommodated in the basement. End of trip cyclists facilities are included in the amenities to administrative areas on level 2 and in the shared education and research area on level 1.





3.5 Crime Prevention Through Environmental Design General Code

Design for Safer Environments

The design of the UCH is consistent with the principles of the Crime Prevention Through Environmental Design (CPTED) General Code. The location and siting of the hospital enhances public access, visibility and clear movement to and through the facility and issues of community safety are addressed in the planning of functional relationships across the campus.

Principles of crime prevention

The responses to the four CPTED General Code key principles are as follows:

- **natural surveillance** – this is intended to limit the opportunity for crime by designing spaces and buildings that foster human activity and interaction as well as overlooking of the environment;

Natural light and aspect through the edges of the buildings to public external spaces are maximised. Each corridor is designed to incorporate natural light, and casual overlooking from other spaces is provided the corridor, along and at ends. All public spaces around the edges are 'monitored' through natural outlook from the adjacent internal spaces. Courtyards for both therapy and recreation are overlooked by entry points, waiting areas and public circulation paths to minimise the opportunity for entrapment. Operationally there will also be CCTV monitoring and security presence on site at all times.

The hospital will be established within a landscaped setting/environment, all the pedestrian approach routes include the opportunity for surveillance and safe movement, with open resting locations along paths. Landscape screening is provided around the external gas storage and generator with clear sightlines maintained around objects.

- **natural access** – this is the "channelling" of the movement of people in the environment either to encourage them into spaces to increase activity and hence increase natural surveillance, or to discourage people from entering areas where it is generally inappropriate for pedestrian movement;

Access to the different functions of the hospital are clearly identified, so that students and staff of the UC faculty spaces – often moving in waves of peak activity – will not impede the movement of visitors and other users of the public hospital.

Public 'first time' access includes a clear drop off area to the east (main entrance), with 'frequent flyer' access available at the southern entry point. Both entrances are legible from arrival points. After hours access encourages interaction, assistance and monitoring by security staff through the main entry.

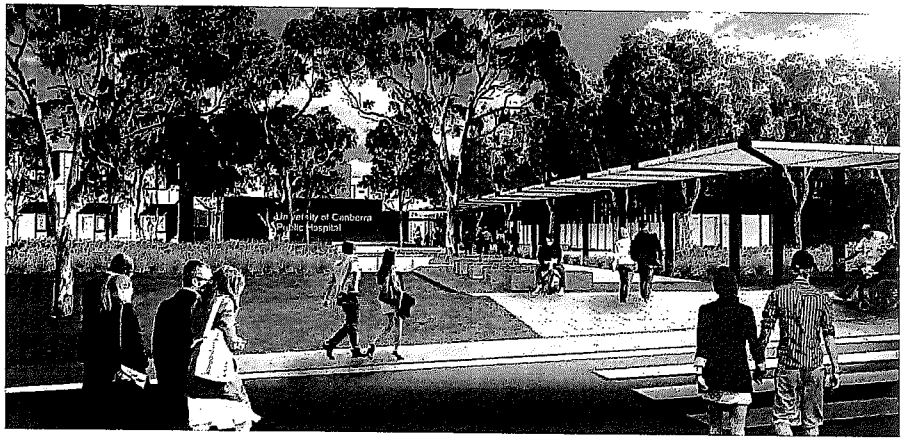
Wayfinding through the facility is clearly legible. For finding reception, waiting areas and departments is simple. Service or back of house movement is clear and generally separated from visitor movements. Views across and past internal courtyards assist in orientation and provide natural resting points and layers of privacy into the '24 hour' or residential sections of the hospital.

- **territorial reinforcement** – this requires a sense of place and amenity to be established; if people feel a pride of ownership, then there is greater propensity to take care of the environment and look after those in the community;

The identity of each building within the complex is highlighted by its finish and form. This creates ownership and recognition of each area for long term users and first time visitors alike.

Around the Adult Mental Health gardens, a low fence is located at the base of the earth batter to reinforce the hospital territory. The fence will not be visible from the building and will not form a dark edge where entrapment may be possible.

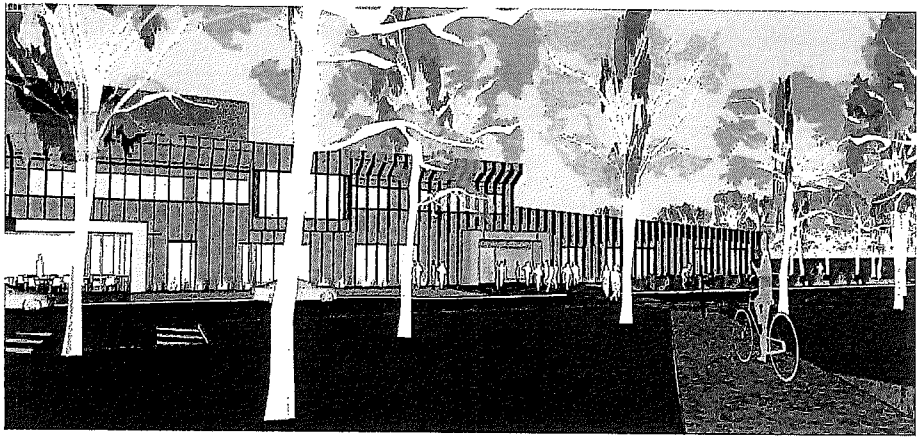
- **target hardening** – this is where the property owner or occupier seeks to deter criminal activity by making it as difficult as practicable to steal or vandalise property or buildings.



The cladding system of the UCH is designed so as to be difficult to climb, with limited items within reach. External spaces around the buildings are clearly visible, and active security will be available after hours. Gutters are concealed around the edge of the building with corbelled wall panelling, minimising water ingress as well as climbing points. The rear loading dock area will be capable of being shut down to limit access to the dock, and waste collection area. Roller shutters will cover the horizontal section of the dock, so items will not be left unattended. The northern accessway will include lighting for services parking and equipment drop off and also incorporates overlooking and sturdy finishes.

Items of visual value are located within the complex in secure courtyards and are protected through passive overview through glazed walls. Landscape elements on approach to the building are designed to encourage activity and seating and include weather protection and surfaces that minimise tripping, slipping or sudden changes in level.

The student approach to the shared education and teaching area is clear and active, with open bicycle racks visible for passive surveillance.



Crime Prevention Through Environmental Design (CPTED) Matrix

Neighbourhood Design			
C1 Design is in accordance with the recommendations of a crime risk assessement as outlined in the ACT Crime Prevention and Urban Design Resource Manual.	R	C	Criterion satisfied The design has been assessed and found to be in accordance with CPTED Guidelines, including the ACT Crime Prevention and Urban Design Resource Manual.
General Code			
C2 The development in Table 1 meet the Crime Prevention Through Environmental Design General Code	R	C	Criterion satisfied Table 1 identifies the development type as one which triggers the requirement for an assessment against the CPTED General Code. The design meets the code as outlined in this assessment
Open Space and Community (Shared) Areas			
C3 natural surveillance of open space and community areas is provided by:	R	C	Criterion satisfied
a) locating to adjacent activity centres			a) The hospital is an activity centre that provides for natural surveillance throughout the day and night. UCPH overlooks the university grounds and recreational areas and major campus pedestrian pathways and access routes. From level 2 of the facility natural surveillance of the campus heartland and adjoing properties is available.
b) encouraging pedestrian (or cyclist) movement through the space;			b) A pedestrian and cyclist pathway is proposed adjacent UCPH connecting the hospital with the UC campus. The pathway is approximately 2.0m above the hospital and provides an excellent overview of the hospital buildings
c) ensuring clear site lines from, and between, buildings and open space areas; community areas; and			c) Clear sightlines are provided along access paths between building entries and communal open spaceathrough a network of proposed pathways
d) designing out any entrapment spaces.			d) Entrapment opportunities have been minimised throughout the site through the siting and configuration of hospital buildings and landscape. The configuration of building entrances and vehicle access points have been designed to preserve sightlines between buildings and open space areas.
C4 Natural access is considered, providing clear entry and exit points and a legible, accessible route through the space.	R	C	Criterion satisfied Access points into the site are clear and legible. The main hospital entrance is accessed from a dedicated drop off to the east. The drop off is highly visible from the proposed access road. A secondary entrance is highly visible from the bus stop located to the south. A third access point for service vehicles is located to the west and is distinguishable from all others.
C5 Planting in public spaces do not obscure views along paths and streets, or to entrances and should not create secluded hiding areas.	R	C	Criterion satisfied Planting in public spaces has been designed to maintain sight lines along paths and drive ways while minimising the potential for entrapment and concealment. Refer to Landscape Masterplan
C6 Selection of plant material are sturdy and in areas of high crime, to make it difficult to snap main growing stems, heavy standard (140-160mm girth) or semi-mature trees (200-270mm girth) should be used to increase their chance of survival.	R	C	Criterion satisfied The plants selected will be sturdy to promote their establishment on site. Refer Landscape drawings 304-307
C7 Plant material, such as creepers or low hedges may be used to deter access and limit the opportunity for graffiti on fences and walls	R	C	Criterion satisfied Shrub and groundcover features have been used at the understorey level below Level 2 of the RACO Day Services building to deter unauthorised access and reduce opportunities for graffiti and vandalism. Refer Landscape drawing 307
C8 Hardscape landscape features such as low walls, bollards are used to delineate movement areas from semi- private areas.	R	C	Criterion satisfied Hardscaping features including seats and bollards have been designed to delineate movement within public accessible areas of the site. In addition, groundcover plantings have been selected and located to delineate formal access routes. Refer to Landscape Masterplan
Childrens Play Area			
C9 Children's play areas are located and designed to comply with each of the following a) there is natural surveillance from adjoining areas b) adjacent areas are used by compatible groups c) there are multiple entry/exits	R	C	Criterion satisfied No children's play areas are proposed for the development
Lighting			
C10 Provide a schedule of lighting showing that lighting complieswith each of the following	R	C	Criterion satisfied
a) Australian Standard AS1158 Lighting for Roads and Public Spaces Part 3.1: Pedestrian Area (Category P) Lighting- Performance and Design Requirements			Lighting of public spaces are designed in accordance with AS1158.3.1. Refer Electrical drawing EL010
b) Australian Standard AS1158 Lighting for Roads and Public Spaces Part 2: Computer Procedures for the Calculations of Light Technical parameters for Category V and Category P Lighting			Lighting of public spaces (Category P) is calculated in accordance with AS1158.2. Refer Electrical drawing EL011.
c) Australian Standard AS4282: The Control of Obtrusive Effects of Outdoor Lighting, in the case of security lighting			The external lighting layout complies with AS4282
C11 Legitimate users and activities at night are encouraged by lighting:	R	C	Criterion satisfied
a) spaces evenly and consistently (except where accent/ feature lighting is necessary)			Site plans and Electrical drawings included in this submission demonstrate that the development design: a) includes regularly spaced fixtures to provide adequate and consistent levels of lighting throughout the drop off, pathways and public entrances to the east and south
b) inset spaces, entries/ exits and paths			b)includes lighting to the underside of the eastern entrance canopy
c) to reduce the casting of shadows that could hide intruders			c) Minimises the casting of shadows through the use adoption of an external lighting scheme that complies with AS 1158, adopts the use of LEDs throughout with luminaires that have a minimum IP rating of IP56.
d) directional signage			d) Directional signage will be included in the development and fit from a series of either building mounted or in pavement luminaires.
e) building entries			e) Entrance canopies and pathways are illuminated to encourage legitimate night time activities. Refer Electrical drawing EL010
f) exterior to interior spaces evenly to allow dor surveillance			f) Provides adequate lighting levels to the eastern and southern entrance to permit surveillance between interior and exterior spaces
C12 Areas that are not intended for night time use are not lit and are closed off to pedestrians	R	C	Criterion satisfied Areas of UCPH that are not legitimate access or egress points at night have been closed off to pedestrian access
C13 Damage to light fixtures is minimised by selecting vandal resistant, high mounted light fixtures. All light bulbs are protected with a suitable lantern bowl.	R	C	Criterion satisfied External light fixtures are pole mounted, high mounted on building facades or protected by vandal proof uplight guards to avoid damage resultant from vandalism. Refer Electrical drawing EL010
Signing			
C14 A statement is provided that all directional signage will comply with the requirements of AS 1742.10 (1991) Manual of Uniform Traffic Control Devices- Pedestrian Control and Protection	R	C	Criterion satisfied Signage is not included as part of this submission
C15 Locate signs so that they comply with each of the following:	R	C	Criterion satisfied Signage is not included as part of this submission
a) they are clearly visible from a distance at all times b) they are not likely to be obscured by growing vegetation c) they are strategically placed at entrances and near activity centres including bus stops, taxi rank and public facilities			
C16 Provide legible signs for all users:	R	C	Criterion satisfied Signage is not included as part of this submission
a) specify signs of high contrast, with light lettering on dark backgrounds with non-reflective surfaces; b) signs should be developed as a system with a consistent pattern, based on hierachy of most important messages. c) they are strategically placed at entrances and near activity centres including bus stops, taxi rank and public facilities			
Interface Between Buildings and Public Realm			
C17 Building entrances are easily identified, providing easy access to all users, affording visibility to and from the street and minimising the potential for hiding spots	R	C	Criterion satisfied All building entries are easily identifiable and provide clear and easy access to users to and from the drop off/ pick up zone to the east and bus stop to the south, minimising opportunities for entrapment.
C18 Provide clear sightlines from the building foyer so that occupants can see the nearest pedestrian area/ car park before leaving the building.	R	C	Criterion satisfied Sightlines from the building foyer to pedestrian, drop off/ pick up areas, bus stops and surface car parks are clear and supported by appropriate landscapping to maximise opportunities for surveillance.
C19 Recessed sections in the building elevation/ facade are detailed and located so that there is opportunity for natural surveillance, for spill lighting and the potential for hiding is minimised.	R	C	Criterion satisfied Recesses in the building elevation/ facade are minimised. Surveillance of these spaces is supported by the use of glazing affording an overview of these area and through the lighting design.
C20 Buildings are designed in a manner that deters scaling (climbing) the building to access balconies from the ground and/ or access between individual balconies	R	C	Criterion satisfied The proposed elevation/ facade are designed that deters scaling. Downpipes and eaves are concealed and access to areas including balconies is restricted.
C21 Where buildings are set back from the street and/or pedestrian paths, the area is developed to minimise hiding and entrapment spots	R	C	Criterion satisfied The area between UCPH buildings and the street is landscaped with low ground covers, grasses and trees and is developed to minimise hiding and entrapment.
C22 Building materials and finishes are of appropriate quality and detailed in a manner to:	R	C	Criterion satisfied
a) reduce opportunities for graffiti and vandalism			Signage is not included as part of this submission a) The material palette has been selected to reduce opportunities for graffiti and vandalism using more robust materials closer to the ground plane
b) facilitate cleaning and replacement			b) Materials have been selected for durability including composite panelling, impact resistant glazing and powdercoated steel canopies. These finishes allow for easy cleaning, maintenance and replacement, and
c) avoid facilitating illegal access to the building and to services			c) Building materials have been selected to avoid facilitating illegal access to the building. Services and infrastructure have been incorporated into the building structure and are securely
Interface Between Buildings and Public Realm			
C23 Pedestrian Routes, Bicycle Paths and Lanes are designed to minimise opportunities for natural surveillance by:	R	C	Criterion satisfied
a) maintaining sightlines along paths between destination points			a) Paths between destination points have been designed to maintain sightlines to maximise opportunities for natural surveillance.
b) allowing overlooking from adjacent areas			b) Pedestrian routes, bicycle paths and lanes are overseen from level 2 of the UCPH buildings
C24 Provide direct access routes to buildings streets, car parks and public transport. Signs should be used to assist pedestrians where it is not possible to establish clear sightlines between destinations.	R	C	Criterion satisfied Direct all weather and lit routes are provided between the southern entry and proposed bus stop.
C25 Security of pedestrian routes, bicycle paths and lanes are provided by:	R	C	Criterion satisfied
a) selecting and lighting 'safe routes' to the standard requirement for pedestrian areas so that these become the focus of legitimate movement after dark;			a) Pedestrian routes from the east/ south road to the building are lit to focus movements along prescribed pathways in support of legitimate night time activities
b) ensuring that laneways have more than one entrance to avoid 'dead ends' and entrapment spots, where possible.			not applicable

C26 When planting adjacent to pedestrian/ bicycle routes: a) ensuring there are open sightlines. Low planting (maximum height 600mm) and high-branching trees (two metres) should be used; b) avoiding tall bushes, dense shrubbery and dense clusters of trees, especially immediately adjacent routes and at predictable stopping points such as road crossings	R	C ✓ ✓	Criterion satisfied a) Planting proposed adjacent pedestrian path is low with a canopy of high trees. Refer the Landscape Masterplan b) Tall bushes and shrubbery has not been used adjacent pedestrian routes. Refer the Landscape Masterplan
C27 A Statement is provided that pedestrian paths are designed in accordance with AUSTROADS Guide to Traffic Engineering Practice Part 13- Pedestrians	R	C	Criterion satisfied Not applicable
C28 A Statement is provided that pedestrian paths are designed in accordance with AUSTROADS Guide to Traffic Engineering Practice Part 14- Bicycles	R	C	Not relevant to this proposal Not applicable
Pedestrian Underpass and Overpasses			
C29 The use of pedestrian underpasses is to be avoided. Where there is no practical or feasible alternative, underpasses are designed: a) wide enough to accommodate both pedestrian and cycle traffic b) straight and without recesses c) with mirrors so pedestrians can see around corners if there is a turn of 90 degrees or more d) with entrances and exits that are visible from shops, homes or other areas of frequent pedestrian traffic e) to ensure there are no screenin of entries/ exits f) with signs at each end indicating where it leads and an alternative route to use at night	R	C	Not relevant to this proposal Not applicable
C30 Overpasses are designed to reduce opportunities to throw missiles at cars or pedestrians	R	C	Not relevant to this proposal Not applicable
Bus Interchange, Bus Stops and Taxi Ranks			
C31 Locate bus stops and taxi ranks so that: a) natural surveillance is possible b) there are no walls, landscaping, fences or other structures which block sightlines to bus stops and taxi ranks c) they are not located adjacent to vacant land, alleys, car parks or near possible entrapment spots d) there are short, safe routes to bus stops and taxi ranks from night-time venues such as cinemas, theatres etc.	R	C ✓ ✓ ✓ ✓	Criteria Satisfied A bus stop is located along the southern roadway and is connected back to the southern entrance via an all weather and lit covered way. A taxi zone is proposed at the eastern drop off/ pick zone and is overseen by the waiting area located immediately inside the eastern main entrance a) Natural surveillance is available to the proposed bus stop and taxi rank from the southern and eastern entrance points respectively b) There are no impediments obscuring sightlines to the bus stop and taxi rank from the southern and eastern entrance points c) the proposed locations for the bus stop and taxi rank are not adjacent vacant land, alleys, car parks and possible entrapment spots d) The taxi rank and bustop locations proposed are within a very short distance from the eastern and southern hospital entrances respectively. Pathways accessing the bus stop and taxi rank are well lit and undercover.
C32 Major bus stops and taxi ranks are well lit and protected from the weather, or adjacent areas which are well lit or that provide protection from the weather	R	C ✓	Criteria Satisfied The taxi rank and bustop locations proposed are within a very short distance from the eastern and southern hospital entrances respectively. Pathways accessing the bus stop and taxi rank are well lit and undercover
C33 Directional signage makes it easy to find bus stops or taxi ranks and provides up-to-date passenger information	R	C ✓	Criteria Satisfied Directional signage will be developed as required and up-to-date timetable information will be negotiated with service providers
C34 Interchanges are located on the same level as significant activity generators to avoid entrapment, increase natural surveillance and provide direct routes of access.	R	C	Not relevant to this proposal Not applicable
Automatic Teller Machines			
C35 Approaches and entrances to ATMs are highly visible and adequately lit so that people cannot loiter, or enter, without being seen	R	C	Not relevant to this proposal No external ATM is proposed as part of this development
C36 Locations near licensed premises and bus stops should be avoided to discourage loitering by potential offenders	R	C	Not relevant to this proposal No external ATM is proposed as part of this development
C37 Where ATMs are enclosed in a vestibule or similar, the vestibule should be securely glazed, adequately and secure from non-legitimate users	R	C	Not relevant to this proposal No external ATM is proposed as part of this development
C38 Use bollards, or other landscaping, to restrict the potential for vehicle incursions	R	C	Not relevant to this proposal No external ATM is proposed as part of this development
Local Waste Facilities			
C39 Screening does not provide entrapment or hiding spots and safe access and adequate lighting is provided near the waste storage areas	R	C ✓	Criteria Satisfied Waste enclosure areas (accessed from a hardstand area) are secured at night behind a roller door. The hardstand area remains lit at night to maintain clear sightlines
Local Utility Facilities			
C40 Air conditioning plants, meter boxes and other service points are mounted within a secure building enclosure for protection	R	C ✓	Criteria Satisfied The hospital plant areas are roof mounted and not accessible by the public. Other utility facilities are enclosed within the lowest level of the building and secured. Some utility facilities are located on the west. These are located within a secured enclosure and not accessible by the public.
Delivery Storage Facilities			
C41 Ensure that: a) Delivery and storage areas are not isolated from the main building b) Secure storage areas are provided for shop owners	R	C ✓ ✓	Criteria Satisfied The delivery and storage areas (accessed from a hardstand area) are secured at night behind a roller door. The hardstand area remains lit at night to maintain clear sightlines a) The delivery and storage areas form part of the main hospital building Not relevant to this proposal

Public Toilets			
C42 Ensure that: a) Public toilets are located in obvious location, but not in isolated areas of activity centres b) Entrances are highly visible so that people cannot loiter or enter without being seen, particularly for toilets close to Children's playgrounds c) Public seating and telephones are located away from public toilets to avoid opportunities for loitering	R	C	Not applicable No public toilets are proposed for the development that are externally accessible to the building.
Public Telephones			
C43 Public telephones are located in obvious locations, are well lit and well signposted, eg near bus stops or taxi ranks	R	C	Not applicable No public telephones are proposed for the development that are externally accessible to the building.

3.6 Entities Approved Schedule

Two informal pre application meetings have been held with the Impact Tract Assessment Unit on 20 November 2014 and 19 December 2014.

Entity	Aspect of project	Contact	Progress at 12/12	Comment	Supporting Information
ACT Roads and Asset Design / Acceptance at TAMS	New road connection to Ginninderra Dr, Aikman Drive Traffic numbers	Lingam Jatheendran	Endorsement received early 2014, requires renewal for DA submission	Dependent on coordination with UC on traffic generation Will require Deed	Refer Sections 4.2 / 4.3
ACTION buses	Additional bus stop on new road, alteration to routes to serve hospital	Ian McGlinn, Carl Pillig	Meeting on 22/10, suggested joint meeting with Roads, so project can be discussed internally TAMS afterwards	Suggest need to connect new road to internal campus road network to offer Route 3 in both directions connecting to all hospitals. Dependent on UC	Refer Section 4.8
ACTEWAgl	Sewer connection	Michael Wansink LDA – Stacey Quayle	Meeting 23/9 to discuss ACTH input into cost of deepening sewer main to north of G. Drive	Assuming work will go ahead in this direction.	Refer Infrastucture Drawings Appendix E
ACTEWAgl	Water supply	Michael Wansink	Connection available and documented		Refer Infrastructure Drawings Appendix E
ACTEWAgl	Natural gas supply		Large diameter Extension along Ginninderra Drive required	As documented in 2013	Refer Infrastructure Drawings Appendix C
ACT Fire & Emergency Services	Fire protection	Paul Flynn (DTS) Steve Newham (if alt solution)	Request for external attack hydrants	Suggested BA may run as Alternative solution with fire engineer, which would change concepts	Refer Appendix E
Heritage	Not required				
ACT Environment	Tree removal, client advised		EPBC by ACTH - awaiting Minister's signature for go ahead exempt from EIS	Will require inclusion of documents in DA	Refer Section 4.1

3.7 Access and Mobility

Introduction

This report outlines the disability access provisions of the proposed UC Hospital.

The brief is to meet the NCC 2014 Vol 1 BCA and referenced Standards. The proposed design is also consistent with the ACT Health Master Documentation requirements although a specific access brief was not prepared for the project. The design also meets the AHFGs.

This report is limited to the area directly under the design control of Lyons and does not include the work controlled directly by UC including site access, site circulation and car park.

Drawings

Drawing No	Name	Revision
A-10005	Site, Road & Parking Plan	2
A-20001	Floor Plan – Level 00	6
A-20101	Floor Plan – Level 01 - North	6
A-20102	Floor Plan – Level 01 - South	6
A-20201	Floor Plan – Level 02 - North	6
A-20202	Floor Plan – Level 02 - South	6
A-20301	Floor Plan – Level 03 - North	2
A-20302	Floor Plan – Level 03 - South	2
A-20901	Adult Mental Health Floor Plan- Level 1	1
A-20902	RACC IPU Floor Plans – Levels 1 & 2	1
A-20903	Shared Education Floor Plans – Levels 1 & 2	1
A-20904	RACC Day/Workspaces Floor Plans – Levels 1 & 2	1
A-50001	Sections A & B	1

Provisions

Parking and Access to Building

Three designated car parking spaces to AS 2890.6 are provided close to the main entry with a complying access to the building via a shared road.

A set down/taxi area is provided close to the main entry with an accessible path to a kerb ramp and building entry via a shared road.

Complying access ways, including sloping paths at 1 in 20 to east, provide access to parking provided by UC from both the education and main entrances.

A bus stop is provided to Action requirements and DSAPT with a complying access way to the main reception via the south entry. These accessways will require kerb ramps and TGSI.

There are staff/patient/student accesses direct to equipment loans and education facilities and rehabilitation (pool) and all these are accessible from general circulation paths around the building.

There is a path to the south entry which connects to parking provided by UC and possibly to paths to the west.

There is a requirement for complying access to the allotment boundary but this is yet to be resolved.

Building Entry

There are several entrances:

- Main entrance from East
- Entrance to South
- Student entry to Shared Education, Meeting and Research
- Entry to patient transport and equipment loans entrances (not auto doors) via external accessway around north side of building
- Entry to Rehab (Pool) on east side.

All entrances are automatic doors.

Any full height glazing will include decals.

All entrances are on grade.

After hours entry will be to the main entry with a "call for assistance" which would be identified by TGSI and information provided in raised tactile/Braille.

From the main entry there will be an access way to assist people with vision impairment to find the main reception point. This will be either:

- a tactile path to the reception desk from the entry door; or
- a tactile path to a tactile/Braille map from the entry door. The map will need to explain how to get to reception desk.

Egress paths that follow entry points will comply. Egress paths exist to other areas and all egress paths at Level 1 comply even through they end up in landscaped (lawn) areas which are considered acceptable.

Internal Circulation

The building is on three levels:

- Level 00 Service and plant areas exempt from access compliance.
- Level 01 and 02 which have floors without levels differences and lift to access each.

All general circulation areas will have complying doors and circulation to them.

Lifts will meet AS 1735.12.

Most stairs are fire isolated stairs and will meet NCC 2014 Vol 1 BCA and include a handrail with grip to AS1428.1 and contrast nosings to AS1428.1. There is a general circulation stair in the education and admin areas which meet AS 1428.1. These are escape stairs in one compartment so not fire related.

Accessible Wards/Rooms

The hospital is divided into various sections. Access to all sections and into all rooms complies. Facilities with accessible ensuites are provided in:

- Mental Health - inpatients two accessible units (one left and one right handed)
- Rehabilitation and Community Care – 4 areas, two on each floor and each area has two accessible units. (8 total with left and one right handed facilities).

The accessible ensuites will meet AS 1428.1.

The other areas of the hospital have admin areas, education areas, consulting rooms and the like and all have complying access. Mental Health has a unisex ambulant facility.

Toilets

Public areas, general use areas (admin, education, consulting) have accessible unisex facilities and male and female facilities with ambulant facilities. Mental Health has a unisex ambulant facility.

Ward areas with active staff areas have staff toilets including male and female but given the nature of the tasks required by staff no accessible or ambulant facilities are required.

Facilities

- There are a range of facilities provided. These include:
- Reception desks to each area will include an accessible section where any writing task is required or low enough to enable direct communication if visual/oral communication only is required.
- Tea points in common areas, waiting areas, admin staff areas, patient lounges which have accessible wards adjacent and the like will be accessible.
- ATM's, vending machines, phones and the like will be accessible.
- Seats will be provided in external accessways to the hospital at maximum 20m intervals, in waiting areas and longer internal corridors at maximum 20m intervals. All seats will include back and arm rests.
- Sound augmentation will be included in all areas with an inbuilt amplification system. In some education spaces, especially those with inbuilt interactive facilities, a system with headphones will be used.
- Pool includes ramps and hoist.
- Emergency egress will include audible and visual alarms and evacuation procedures will detail how all persons are assisted to egress.
- All controls/switches will be nominally be at 1000mm and a minimum 500mm from an internal corner.

Wayfinding

A signage and wayfinding design consistent with ACT Health Master Documentation requirements will be developed for the hospital.

The minimum statutory signage with raised tactile and Braille are toilets, lifts and exits. Additional raised tactile and Braille signage are at entrances (as mentioned above). Additional raised tactile and Braille signage may be included in the wayfinding design.

Luminance contrast will be included for all required doors/frames to adjacent walls, tactile indicators, handrails, contrast nosings and signage.

Internal Courtyards

Where courtyards are accessible to users and the public, access will comply (some are noted as light wells only) and the areas will also be accessible. All details will be to AS1428.1.

Rules		Criteria		Comments
Part A - Element 1: Parking				
1.1 Car Parking				
R1 i) Designated accessible car parking spaces meet the requirements of AS2890.1 and Parking and Vehicular Access General Code.	√	C1 Car parking is provided at designated locations to meet the needs of people with disabilities.	√	Designated accessible car parking spaces are provided at the entry/ drop off area adjacent the main hospital entrance
R2 Car parking spaces provided for people with disabilities must have vertical clearance for the entire width of the space and the adjacent shared area of not less than 2.5m described in Figure 2.7 of the AS2890.6	Not Applicable	C2 Adequate space is provided to allow a motorcycle when about to be unloaded either front – in or reverse-in position.	Not Applicable	Not Applicable
Element 2: External Access to Entrance				
2.1 Continuous Accessible Path of Travel and Walkways				
R3 A continuous accessible path of travel is provided that complies with: i) AS 1428.1 – Design For Access and Mobility, ii) AS 1428.4 – Tactile ground surface indicators for the orientation of people with vision impairment in high risk hazards or provide direction, iii) AS 4586 – Slip Resistant Classification of New Pedestrian Surface Materials for external paving and ground surfaces; and iv) designed so that the placement of facilities does not intrude into the continuous accessible path of travel v) Walkways and grass adjacent to walkways to comply with AS1428.1 and AS1428.2	√	C3 Continuous accessible path of travel is provided for owners, occupants, employees and visitors: a) to all areas and all required facilities of the building, b) from property boundary, designated accessible parking spaces, passenger drop off points and public spaces to entrances of buildings; c) to connect buildings, facilities and spaces that are on the same block or part of the same complex unless topographically impossible; and d) to minimise distances travelled between elements of buildings and facilities. e) Walkways are of an appropriate scale and if steep gradient is used adjacent to walkways, are identified by appropriate luminance contrast.	√	Continuous, level and access compliant pathways are provided for patients, visitors and staff: a) to all areas and all required facilities of the hospital; b) from property boundary, designated accessible parking spaces, passenger drop off /pick up points and public spaces including bus stops to entrances of buildings; c) to connect buildings, facilities and spaces that are on the same hospital site; and d) to minimise distances travelled between hospital departments. e) Walkways are of an appropriate scale.
2.2 Lighting				
R4 Internal lighting along the whole of the continuous accessible path of travel designed to meet AS1680.0.	√	C4 This is a mandatory requirement. There is no applicable criterion	√	Criterion satisfied
R5 External lighting along the whole of the continuous accessible path of travel meets AS1158.3.1 and the ACT Crime Prevention and Environmental Design General Code.	√	C5 This is a mandatory requirement. There is no applicable criterion.	√	Criterion satisfied
2.3 Way finding				
R6 Where installed directional signage or other wayfinding methods, e.g. tactile indicators to be in accordance with AS1428.1 and AS1428.4 and must identify the continuous accessible path of travel, accessible parts of buildings and all accessible facilities. Details in most AS1428.1 and AS1428.4.	Not Applicable	C6 This is a mandatory requirement. There is no applicable criterion.	Not Applicable	
R7 There is no applicable rule.	Not Applicable	C7 For Illuminated signs, the luminance of the symbols to be at least 30% in contrast to the background.	Not Applicable	
Element 3: Entry and Doorways				
3.1 Doorways and Doors				
R8 Doorways and doors are designed to meet AS 1428.1- Design for Access and Mobility for: i) pedestrian entrances and exits; ii) public circulation areas; and any common use areas.	√	C8 This is a mandatory requirement. There is no applicable criterion.	√	Doors and doorways in public areas of the hospital are designed to meet AS1428.1
R9 There is no applicable rule.	√	C9 Automatic doors for public entrances should be installed in high use commercial and public buildings.	√	Automatic doors are proposed to all public entrances and high use areas
Element 4: Circulation				
There is no applicable rule.		C14 The development meets the requirements of the Access and Mobility General Code.	√	Criterion satisfied
Element 4: Parking and Site Access				
Intent: To provide for design elements that are safe and convenient for circulation within and entry to buildings Stairways, Stairway lifts, Passenger lifts, Ramps, Handrails and Grab rails are provided in accordance with appropriate Australian Standards (refer to Appendix A)			√	Criterion satisfied
Element 5: Toilets				
Intent: To provide access and use of sanitary facilities Sanitary facilities and associated signage are designed and provided to meet the purpose of the building and appropriate Australian Standards (refer to Appendix A).			√	Criterion satisfied
Element 6: Facilities				
Intent: To provide access to other appropriate facilities such as street furniture and ATM. Street furniture (seating, drinking fountains, litterbins and the like) and ATM facilities are designed and provided in accordance with appropriate Australian Standards (refer to Appendix A).			Not Applicable	
Special Purpose Developments - Element 1: Access				
1.1 Special Purpose Developments				

R16 There is no applicable rule.		C16 Access in a special purpose development for older people with disabilities to be in accordance with AS4299 – Adaptable Housing – Class C and access is provided to, and within, 100% of units within the development.	Not Applicable	
R17 There is no applicable rule.		C17 For places of shared accommodation for people with disabilities: a) Where developments have a gross floor area not exceeding 300m2 , and no more than 12 person capacity – provide 1 accessible room b) Where developments have a gross floor area exceeding 300m2 provide accessible rooms at the following rates: i) Less than 49 person capacity – 2 rooms ii) More than 49, but less than 99 – 4 rooms iii) More than 99 persons – 6 rooms. Note – capacity based on no more than average of 2 people per room.	Not Applicable	

Section 4 | Supporting Information

Australian Capital Territory

Planning and Development (Environmental Impact Statement – University of Canberra Public Hospital) Exemption 2014

Notifiable instrument NI2014–653

made under the

Planning and Development Act 2007 s 211 (EIS not required if development application exempted)

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1 Name of instrument

This instrument is the *Planning and Development (Environmental Impact Statement – University of Canberra Public Hospital) Exemption 2014*.

2 Commencement

This instrument commences on the day after notification.

3 EIS not required if development application exemption

In accordance with section 211 of the *Planning and Development Act 2007*, I have agreed that the University of Canberra Public Hospital will not require further environmental assessment.

A copy of the exemption is shown at Attachment A.

A copy of the exemption report may be obtained from the Environment and Planning Directorate's website:

http://www.actpla.act.gov.au/topics/design_build/da_assessment/environmental_assessment/exemption_from_requiring_and_eis_s211

4 Completion

The s211 exemption expires 18 months after the day the notice is notified.

Mick Gentleman MLA
Minister for Planning
9 December 2014

Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au

POSTED
10 DEC 2014

Mick Gentleman MLA
MINISTER FOR PLANNING
MINISTER FOR COMMUNITY SERVICES
MINISTER FOR WORKPLACE SAFETY AND INDUSTRIAL RELATIONS
MINISTER FOR CHILDREN AND YOUNG PEOPLE
MINISTER FOR AGEING
MEMBER FOR BRINDABELLA

Dr Peggy Brown
Director-General
ACT Health Directorate
GPO Box 825
CANBERRA ACT 2601

Dear Dr Brown

Thank you for your request received on 15 September 2014 for an exemption from the requirement to complete an Environmental Impact Statement under Section 211 of the *Planning and Development Act 2007* (the Act) for the proposed University of Canberra Public Hospital.

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 the University of Canberra Public Hospital 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 Planning Directorate. Please ensure that you include a copy of this letter with your development application.

Yours sincerely

Mick Gentleman MLA
Minister for Planning
9th December 2014

ACT LEGISLATIVE ASSEMBLY
London Circuit, Canberra ACT 2601 GPO Box 1020, Canberra ACT 2601
Phone: (02) 6205 0218 Fax: (02) 6205 0368 Email: GENTLEMAN@act.gov.au
Twitter: @GENTLEMANMick Facebook: www.facebook.com/MickGentleman
Authorised by the ACT Parliamentary Counsel—also accessible at www.legislation.act.gov.au

CANBERRA

4.2 Traffic Impact Assessment

BROWN
Smart Consulting

Traffic Impact Assessment

University of Canberra Public Hospital

C12189

February 2013

BROWN CONSULTING PTY LTD

ABN 38 109 428 506
Telephone (02) 6211 7100
Level 6 /121 Marcus Clarke Street, PO Box 261, Canberra ACT 2601
E-mail canberra@brownconsulting.com.au
Web site www.brownconsulting.com.au

NO	DATE	ISSUE	PREPARED BY	REVIEWED BY	AUTHORISED BY
1	20/02/13	Issued for review and comments	GO	JS	

DOCUMENT REFERENCE

H:\C12000\C12189\documents\sr\Traffic Impact Assessment Report\C12189 Traffic Impact Assessment Ver.1.docx

Table of Contents

1 INTRODUCTION

Brown Consulting has been commissioned by Shared Services Procurement to prepare a Traffic Impact Assessment of the University of Canberra Public Hospital, Bruce (refer Figure 1) referenced as 'the site', which has an area of 45,000 square metres.

The study area is situated between Ginninderra Drive to the north, Aikman Drive to the west and within proximity of Pantowora Street to the south-east.

Block 1 Section 3 Bruce is zoned under the ACT Government Territory Plan as CF: Community Facilities. ACT Government Health Directorate proposes to develop a new sub-acute hospital for the northern suburbs of Canberra. The facilities will be located at the University of Canberra and will be known as the University of Canberra Public Hospital.

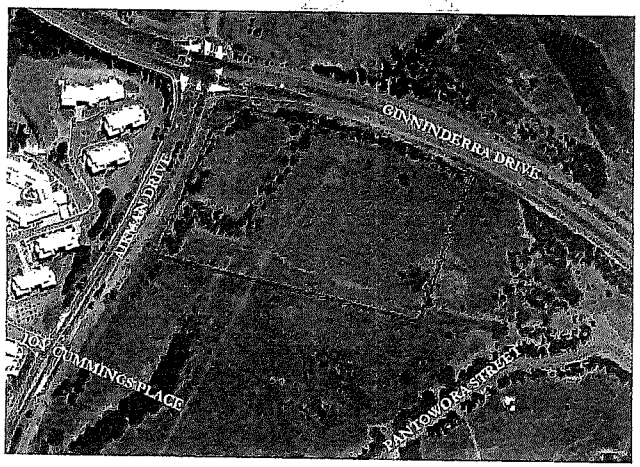


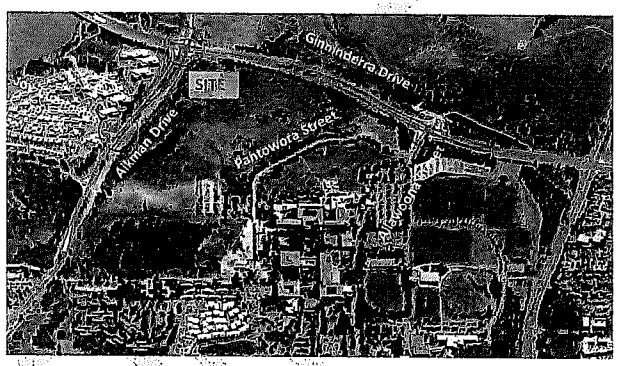
Figure 1 Site Map

Source: Google Earth

2 SITE DESCRIPTION

Block 1 Section 3 Bruce is situated approximately 1.8 km east of the Belconnen Business Centre. The block has direct road abuttal of Ginninderra Drive to the north, Aikman Drive to the west and within proximity of Pantowora Street to the south-east. The proposed hospital site has an area of approximately 45,000 square meters.

The site is bounded by Ginninderra Drive to the north, Aikman Drive to the west and Pantowora Street to the east. Intersections that will be impacted by the site are Ginninderra Drive/ Aikman Drive, Ginninderra Drive / Allawoona Street and Aikman Drive / Joy Cummings Place intersections.



Source: Google Earth

Figure 2 Site Location, Access Roads and Surrounding Intersections

3 EXISTING TRANSPORT CONDITIONS

3.1 Existing Road Network

- Aikman Drive

Aikman Drive is classified as an Arterial Road in the ACT Road Hierarchy System. This road is signposted 60 km/h and is expected to carry more than 6,000 vehicles per day. The road has one lane per direction with signalised intersections at Ginninderra Drive, Joy Cummings Place, Emu Bank and Eastern Valley Way and priority controlled intersections at Townsend Place and the access driveway to the University of Canberra (UC) Senior Secondary College.

- Ginninderra Drive

Ginninderra Drive is classified as an Arterial Road in the ACT Road Hierarchy System. This road is signposted 80 km/h and has two lanes per direction. Ginninderra Drive's intersections with Aikman Drive and Allawoona Street both have stubs for the future Lawson suburb.

- Allawoona Street

Allawoona Street is classified as an Access Street in the ACT Road Hierarchy System. This road is signposted 40 km/h and is the main access off Ginninderra Drive for the UC.

- Pantowora Street

Pantowora Street is classified as an Access Street in the ACT Road Hierarchy System. This road is signposted 40 km/h and is an access street to UC's Building 6 and 7 of the UC.

- Joy Cummings Place

Joy Cummings Place is classified as an Access Street in the ACT Road Hierarchy System. This road is signposted 40 km/h.

Figure 3 shows the existing daily traffic volumes for the surrounding road network.

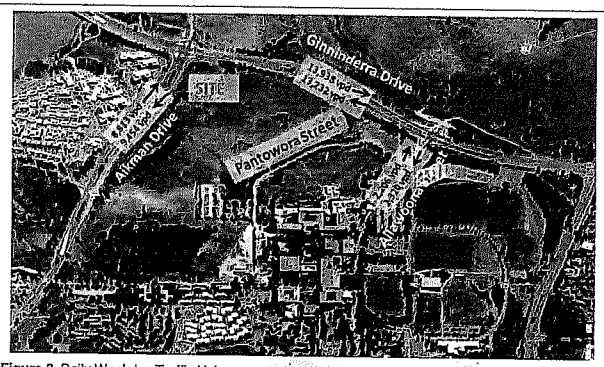


Figure 3 Daily Weekday Traffic Volumes – 2012 (vehicles per day)

3.2 Intersection Performance

As shown in **Figure 3**, a total of three intersections are noted within the vicinity of the site. Using SCATS data obtained from the Territory and Municipal Services (TAMS), SIDRA intersection performance analysis was undertaken. Table 1 below defines the level of service criteria for intersections. A summary of the existing intersection operating conditions are presented in Table 2 with the intersection locations in **Figure 4**.

Table 1 Level of Service Criteria for Intersections

Level of Service (LOS)	Average Delay per Vehicle (seconds)	Description for traffic signals and Roundabouts	Description for give way and stop signs
A	<14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity, incidents will	At capacity, requires

	cause excessive delays, roundabouts require other control mode	other control mode

Table 2 Pre Development LOS

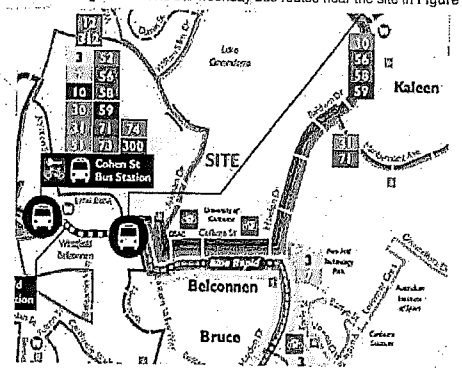
Intersection	Pre-Development			
	AM peak	Delay	PM peak	Delay
Aikman Drive / Ginninderra Drive	C	26.1	D	35.5
Ginninderra Drive / Allawoona Street	D	41.9	D	42.2
Aikman Drive / Joy Cummings Place	C	22.4	C	20.9

From **Table 2** it can be seen that all three intersections are performing well with only the Ginninderra Drive/ Allawoona Drive operating near capacity.

Appendix A of this report contains the SIDRA movement summaries for the above results.

3.3 Public Transport

The site is within close proximity to two ACTION Bus Routes; 51 and 52. These bus routes travel on Ginninderra Drive and Aikman Drive with the nearest bus stop at the intersection of Joy Cummings Place and Aikman Drive. Figure 5 shows the weekday bus routes near the site in **Figure 4**.

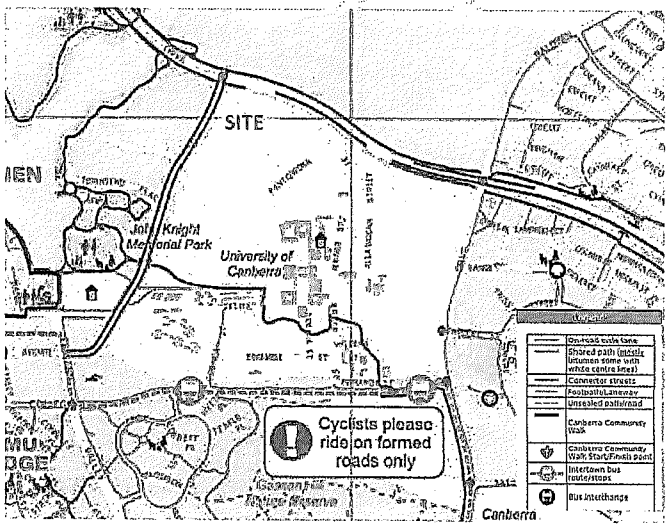


Source: ACTION Bus Route Weekday Map

Figure 4 ACTION Bus Routes

3.4 Pedestrian Links

A review of the Canberra and Queanbeyan Walking and Cycling Map shows that the site is covered by an extensive network of walking and cycling infrastructure. Aikman Drive has an off-road shared path on its west side from Ginninderra drive to Joy Cummings Place and on-road cycle lanes for its entire length. Along Ginninderra Drive, there are on-road cycle lanes and off-road shared paths on its south and north sides respectively. Allawoona Street has on-road cycle lanes from Ginninderra Drive to Pantowora Street.



Source: Canberra & Queanbeyan Pedestrian and Cycling Map

Figure 5 Pedestrian Map

3.5 Other Developments

University of Canberra – Masterplan

A review of the University of Canberra Masterplan 2012 determined that eastward extensions of Joy Cummings Place and Townsend Place to Pantowora Street are planned as future connections to the university. These road extensions will provide two new access points to the university from Aikman Drive. A north extension of the Pantowora shared street is also envisaged which may directly connect to the Site. The proposed UC circulation plan is shown in Figure 6.

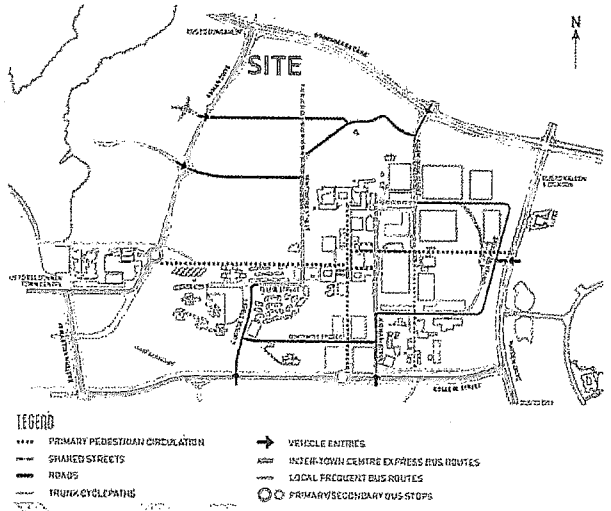


Figure 6 UC Masterplan Circulation Plan

Lawson South Suburb

Lawson South is a suburb located north of the site. This suburb is proposed to have 216 single dwellings, 1634 multi-unit dwellings, 14,141 square metres of mixed use floor space and 10,141 square metres of community facilities. Intersection traffic volumes cited in the Lawson South Master Planning Study – Cardno 2009 were used for in this study. Copies of the intersection traffic volumes are shown in Appendix B.

ACT GP Super clinic

A GP Super Clinic is being built at the east side of Allawoona Street. This development will have 4,820 square metres of GFA and will have GP Super Clinic occupying the first 2 floors with other floors housing the training facilities for the University's Faculty of Health and other health related organisations.

Using the RTA Guide to Traffic Generating Developments, the typical traffic generation rate for an extended hour medical centre is AM peak vehicle trip generation rate of 10.4 vehicles / hour / 100 square metre of GFA. Total AM Peak trip generation is 501 vehicles per hour which we will assume is equivalent to the PM Peak trip generation.

4 PROPOSED DEVELOPMENT AND IMPACTS

3.1 General

The UC Public Hospital is proposed to be a 200 bed facility with at least 150 full time employees. A review of the Orange Health Campus Redevelopment Study by MWT 2006 determined an effective trip generation rate of 0.84 and 0.8 trips 8 per bed for the AM and PM peak periods respectively. This equates to 168 AM peak hour vehicle trips and 160 PM peak hour vehicle trips

Based on the RTA Guide to Traffic Generating Developments, the typical traffic generation rates for a private hospital are:

- AM peak = -12.41 + 0.57*(number of beds)
- PM peak = -11.96 + 0.69*(number of beds)

This equates to 102 AM peak hour vehicle trips and 126 PM peak hour vehicle trips.

Comparing the resulting generated trips, this study used the conservative Orange Health Campus Redevelopment generated trips.

3.2 Site Access

The study assessed three access driveway locations; Aikman Drive, Ginninderra Drive and Pantowora Street. A review of the Calvary Hospital Parking and Traffic Study shows that there were regular occurrences of hospital employees using short stay / patient parking thus displacing and inconveniencing patients. A review of the Orange Health Campus showed similar attitude wherein hospital visitors and employees would utilise surrounding parking areas in the adjoining shops. To prevent this, the study recommends different access driveways for short stay and employee / long stay parking.

Aikman Drive is proposed to have a full access intersection that will be utilised by short stay, delivery and emergency vehicles.

For employee / long stay parking, there are two possible access arrangements;

- A left-in / left – out access along Ginninderra drive. Constraints for this access are possible conflict with the on-road cycle lanes and due to the proximity of the Ginninderra Drive / Aikman Drive intersection, the left-out access will be onto the left turn slip lane to Aikman Drive.
- A full access from Pantowora Street. The benefits of this access is that vehicles will be using the intersection of Ginninderra Drive / Allawoona Street and as discussed earlier, the UC Masterplan has identified future links to Pantowora Street; Joy Cummings Place extension and a northern extension of the Pantowora Street.

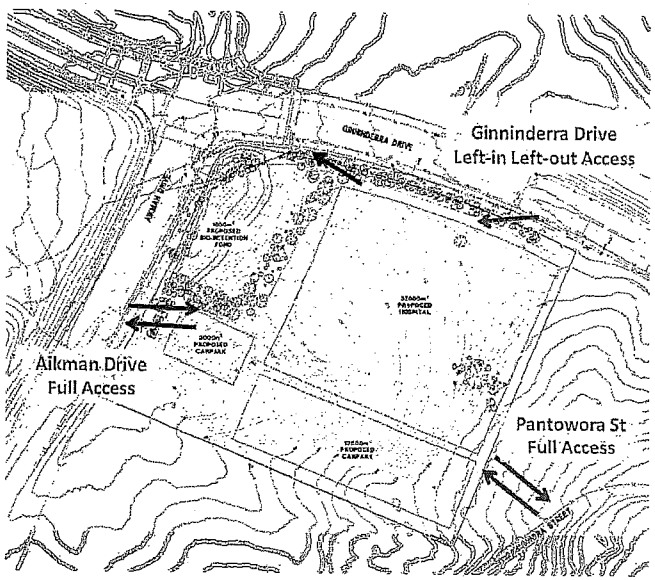


Figure 7 Proposed Access Driveways

3.3 Intersection Analysis

SIDRA Intersection analysis was undertaken for the post development scenario for the three intersections cited in Section 3.2 and a new intersection for a new access driveway on Aikman Drive for the UC Public Hospital. As seen in Table 4, the Ginninderra Drive / Allawoona Street intersection exhibited a poor LOS of F. This is attributed to the Lawson South suburb and GP Super clinic which both had generated traffic passing through this intersection. There also extensive queues along Aikman Drive for the AM Peak hour. There was a 400 metre queue and a 267 metre queue for the southbound lanes for the Aikman Drive / Joy Cummings Place and the Aikman Drive / UC Public Hospital Access respectively.

Table 3 Post Development LOS

Intersection	Post-Development			
	AM peak	Delay	PM peak	Delay
Aikman Drive / Ginninderra Drive	C	28.8	D	44.5
Ginninderra Drive / Allawoona Street	D	39.7	F	109.7
Aikman Drive / Joy Cummings Place	C	57.4	C	22.8
Aikman Drive / UC Public Hospital	C	24.7	B	14.9

3.4 Public Transport

The only impact the development will have on public transport is the addition of a new bus stop near the site's access driveway along Aikman Drive.

3.5 Pedestrian and Cyclist Links

The development may impact the on-road cycle lanes on the southern part of Ginninderra Drive if there the long stay / staff parking use the left in left out configuration on Ginninderra Drive. Otherwise, there are no adverse impacts on pedestrian and cyclist infra.

3.6 Proposed Parking

Vehicle parking requirements were calculated in accordance with the ACTPLA Parking and Vehicular Access General Code and parking rate estimates from the Orange Health Campus Redevelopment study. The Code determined a parking provision of 0.8 vehicle parking spaces per staff and 1.3 vehicle parking spaces per bed while the Orange study had 0.75 parking spaces per staff and 0.78 vehicle parking spaces per bed. The study has adopted the ACTPLA parking Code resulting in the site providing 260 vehicle parking spaces for the short stay and 120 vehicle parking spaces for the long stay / employee parking.

Based on the findings of the Calvary Parking and Traffic Study, parking requirements for hospital volunteers and medical students should also be catered for. At the time this report was written, no figures for volunteers and students were available.

Orange Health Campus Redevelopment

- 0.75 parking space per staff & 0.78 parking spaces per bed
- UC Hospital 200 beds = 156 parking spaces
- UC Hospital 150 staff = 113 parking spaces

ACTPLA Parking and Vehicular Access General Code

- 0.8 parking space per staff & 1.3 parking spaces per bed
- UC Hospital 200 beds = 260 parking spaces
- UC Hospital 150 staff = 120 parking spaces

5 CONCLUSIONS AND RECOMMENDATIONS

This report has assessed the traffic impacts of the proposed UC Public Hospital which will provide 200 beds and be staffed by 150 full time employees.

1. In terms of intersection performance in the post development AM peak scenario, all intersections have acceptable LOS. An issue that came up are the long queues on the southbound lanes for Aikman Drive / Joy Cummings Place and Aikman Drive / UC Public Hospital access intersections. It is recommended that these intersections have coordinated signals to minimise excessive queues.
2. For the PM peak scenario, the intersections on Aikman Drive exhibited acceptable LOS. The Ginninderra Drive / Allawoona Street intersection showed a poor LOS F. Noting that this intersection currently is operating near capacity, intersection improvements are recommended for this intersection to accommodate Lawson suburb, GP super clinic and UC Public Hospital employee vehicles.
3. Recommended access driveways for the site are:
   - Short Stay / Delivery / Emergency Vehicle access on Aikman Drive

- Long Stay / Employee vehicle access on Pantowora Street.

Access from Aikman Drive will need road widening on the east side. The bus stop will also need to be relocated to this intersection to provide public transport link to the hospital. These proposed changes are shown in Figure 8.

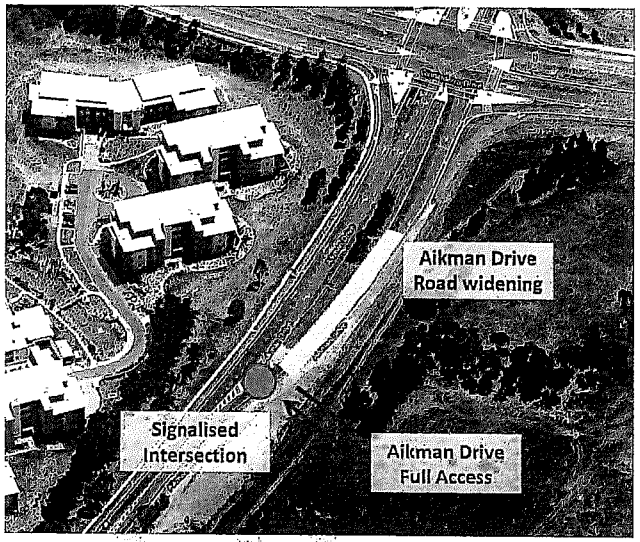


Figure 8 Recommended Aikman Drive Modifications

Access from Pantowora Street will require upgrading of the Allawoona Street consisting of creation of dedicated left turn lane onto Ginninderra Drive, duplication of Allawoona Street past Pantowora Street and the installation of a clear zone at the intersection of Allawoona Street / Pantowora Street intersection. These modifications are shown in Figure 9.

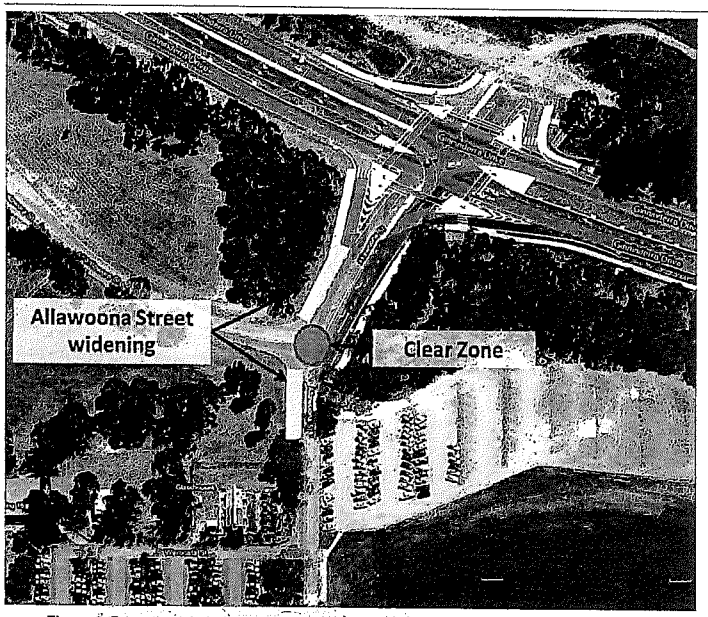


Figure 9 Recommended Allawoona Street Modifications

4. The site should provide for at least 260 parking spaces for short stay / patient / emergency and delivery vehicles and 120 parking spaces for long stay / employee parking. Additional vehicle parking spaces may be needed for volunteers and students.

APPENDICES

APPENDIX A: SIDRA Results
APPENDIX B: Lawson Suburb SIDRA Results

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Ph: 6211 7100 Fax: 6211 7199

TRAFFIC IMPACT ASSESSMENT
UC Public Hospital
BROWN Smart Consulting

APPENDIX A

SIDRA Results

gilbert.ortiz@brownconsulting.com.au
Ph: 6211 7100 Fax: 6211 7199
C12189 Traffic Impact Assessment Ver.1.docx
Rev: 1
Date: 28 February 2013
Shared Services Procurement

MOVEMENT SUMMARY

Site: FINAL -Post devt AM Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
Am Peak
Post development

Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	417	0.0	0.719	36.7	LOS D	32.1	226.7	0.87	0.90	30.4
22	T	805	3.0	0.719	35.0	LOS C	35.4	253.9	0.88	0.80	29.1
23	R	19	0.0	0.256	87.6	LOS F	1.4	10.0	1.00	0.70	17.7
Approach		1241	1.9	0.719	36.4	LOS D	35.4	253.9	0.88	0.83	29.2
North East: Lawson north											
24	L	81	0.0	0.158	30.5	LOS C	3.8	27.0	0.68	0.77	32.8
25	T	62	0.0	0.158	52.3	LOS D	3.9	27.0	0.86	0.67	23.7
26	R	42	0.0	0.565	89.7	LOS F	3.3	22.8	1.00	0.75	17.4
Approach		185	0.0	0.565	51.3	LOS D	3.9	27.0	0.81	0.73	24.7
North West: Ginninderra Drive west											
27	L	13	0.0	0.838	39.2	LOS D	54.2	389.2	0.89	0.94	30.3
28	T	1847	3.0	0.838	29.2	LOS C	54.5	391.4	0.89	0.83	31.7
29	R	412	0.0	0.756	48.2	LOS D	9.7	68.0	1.00	0.86	25.8
Approach		2272	2.4	0.838	32.7	LOS C	54.5	391.4	0.91	0.83	30.5
South West: Allawoona Street south											
30	L	78	0.0	0.176	28.4	LOS C	2.8	19.5	0.76	0.77	34.1
31	T	17	0.0	0.176	20.5	LOS C	2.8	19.5	0.76	0.61	35.2
32	R	14	0.0	0.188	87.0	LOS F	1.0	7.3	1.00	0.69	17.8
Approach		109	0.0	0.188	34.7	LOS C	2.8	19.5	0.79	0.73	30.6
All Vehicles		3807	2.1	0.838	34.9	LOS C	54.5	391.4	0.89	0.83	29.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian Que ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	69.1	LOS F	0.2	0.2	0.96	0.96
P11	Across NE approach	53	18.8	LOS B	0.1	0.1	0.50	0.50
P13	Across NW approach	53	68.2	LOS F	0.2	0.2	0.95	0.95
P15	Across SW approach	53	31.4	LOS D	0.1	0.1	0.65	0.65
All Pedestrians		212	46.8	LOS E			0.77	0.77

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt AM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
AM Peak
Post development
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	148	2.0	0.114	11.2	LOS B	1.4	10.1	0.28	0.69	49.2
3	R	285	2.0	0.519	52.7	LOS D	6.6	47.2	0.97	0.80	26.8
Approach		433	2.0	0.519	38.5	LOS D	6.6	47.2	0.73	0.76	31.8
East: Ginninderra Drive east											
4	L	544	2.0	0.555	16.1	LOS B	12.9	92.3	0.56	0.63	49.8
5	T	331	3.0	0.555	29.4	LOS C	12.9	92.3	0.84	0.71	38.1
Approach		875	2.4	0.555	21.1	LOS C	12.9	92.3	0.66	0.76	44.3
West: Ginninderra Drive west											
11	T	1951	3.0	0.895	30.7	LOS C	49.7	356.8	0.95	0.98	37.5
12	R	782	2.0	0.805	27.1	LOS C	13.3	94.5	0.87	0.86	39.7
Approach		2733	2.7	0.895	29.7	LOS C	49.7	356.8	0.93	0.95	38.1
All Vehicles		4041	2.6	0.895	26.8	LOS C	49.7	356.8	0.85	0.89	38.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian Que ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	32.0	LOS D	0.1	0.1	0.80	0.80
P2	Across S approach	53	32.0	LOS D	0.1	0.1	0.80	0.80
P3	Across E approach	53	36.6	LOS D	0.1	0.1	0.89	0.89
P4	Across E approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P7	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P8	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		318	39.4	LOS D			0.89	0.89

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak
Aikman Drive - Joy Cummings Place

Aikman Drive / Joy Cummings Place
PM Peak
Post development
Signals - Fixed Time Cycle Time = 119 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	659	2.0	0.438	4.5	LOS A	12.4	88.4	0.36	0.33	51.7
26	R	28	0.0	0.280	64.8	LOS E	1.6	11.0	0.96	0.72	21.5
Approach		687	1.9	0.438	7.0	LOS A	12.4	88.4	0.38	0.34	48.9
North West: Joy Cummings Place											
27	L	41	0.0	1.000[3]	65.4	LOS E	2.3	16.3	0.97	0.72	21.4
29	R	31	0.0	0.141	59.9	LOS E	1.6	11.5	0.93	0.73	22.7
Approach		72	0.0	1.000	63.0	LOS E	2.3	16.3	0.95	0.72	21.9
South West: Aikman Drive south											
30	L	44	0.0	0.420	60.5	LOS E	2.4	16.6	0.94	0.73	22.6
31	T	1129	2.0	0.906	26.5	LOS C	63.8	454.4	0.93	0.94	32.0
Approach		1173	1.9	0.906	29.7	LOS C	63.8	454.4	0.93	0.93	31.5
All Vehicles		1932	1.9	1.000	22.8	LOS C	63.8	454.4	0.74	0.72	35.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P13	Across NW approach	53	10.1	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		106	31.9	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: POST Devt -AM Peak Aikman Drive - UC Public Hospital

Aikman Drive / UC Public Hospital
AM Peak
Post devt
Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: UC Public Hospital											
21	L	2	0.0	0.017	31.6	LOS C	0.1	0.5	0.89	0.63	32.1
23	R	1	0.0	0.017	31.9	LOS C	0.1	0.5	0.89	0.64	32.1
Approach		3	0.0	0.017	31.7	LOS C	0.1	0.5	0.89	0.63	32.1
North East: Aikman Drive north											
24	L	15	0.0	0.806	25.2	LOS C	38.8	276.1	0.82	0.94	37.4
25	T	1334	2.0	1.000[3]	18.2	LOS B	38.8	276.1	0.87	0.79	37.8
Approach		1349	2.0	1.000	18.3	LOS B	38.8	276.1	0.87	0.79	37.8
South West: Aikman Drive south											
31	T	433	2.0	0.662	31.6	LOS C	20.1	143.4	0.90	0.79	30.6
32	R	15	0.0	0.662	40.0	LOS D	20.1	143.4	0.90	0.91	30.1
Approach		448	1.9	0.662	31.9	LOS C	20.1	143.4	0.90	0.79	30.6
All Vehicles		1800	2.0	1.000	21.7	LOS C	38.8	276.1	0.68	0.79	35.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	9.6	LOS A	0.1	0.1	0.42	0.42
P11	Across NE approach	53	49.2	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		106	29.4	LOS C			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
PM Peak
Post Development

Signals - Fixed Time Cycle Time = 127 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	111	0.0	1.102	170.4	LOS F	83.2	595.1	1.00	1.57	10.8
22	T	1352	3.0	1.102	165.3	LOS F	86.3	619.5	1.00	1.62	10.6
23	R	58	0.0	0.661	77.6	LOS E	3.8	26.9	1.00	0.80	19.3
Approach		1521	2.7	1.102	162.3	LOS F	86.3	619.5	1.00	1.59	10.8
North East: Lawson north											
24	L	20	0.0	0.032	18.1	LOS B	0.5	3.5	0.54	0.70	40.3
25	T	16	0.0	0.032	36.8	LOS D	0.7	4.6	0.77	0.55	28.7
26	R	13	0.0	0.068	64.2	LOS E	0.7	5.2	0.93	0.69	21.8
Approach		49	0.0	0.068	36.4	LOS D	0.7	5.2	0.72	0.66	28.7
North West: Ginninderra Drive west											
27	L	36	0.0	0.574	41.3	LOS D	21.9	157.2	0.80	0.92	29.2
28	T	934	3.0	0.574	30.8	LOS C	22.2	159.4	0.80	0.72	31.1
29	R	118	0.0	0.336	39.2	LOS D	1.9	13.2	0.97	0.75	28.9
Approach		1088	2.6	0.574	32.0	LOS C	22.2	159.4	0.82	0.73	30.8
South West: Allawoona Street south											
30	L	393	0.0	1.069	124.7	LOS F	52.9	370.3	1.00	1.27	13.7
31	T	239	0.0	1.069	116.8	LOS F	52.9	370.3	1.00	1.27	13.7
32	R	190	0.0	1.000[3]	112.2	LOS F	16.3	114.2	1.00	1.17	14.8
Approach		822	0.0	1.069	119.5	LOS F	52.9	370.3	1.00	1.25	13.9
All Vehicles		3480	2.0	1.102	109.7	LOS F	86.3	619.5	0.94	1.23	14.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian Queue ped	Pedestrian Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	21	55.7	LOS E	0.1	0.1	0.94	0.94
P11	Across NE approach	21	27.1	LOS C	0.0	0.0	0.65	0.65
P13	Across NW approach	21	55.8	LOS E	0.1	0.1	0.94	0.94
P15	Across SW approach	21	35.5	LOS D	0.1	0.1	0.75	0.75
All Pedestrians		84	43.8	LOS E			0.82	0.82

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
PM Peak
Post development
Signals - Fixed Time Cycle Time = 119 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	157	0.0	0.208	27.6	LOS C	5.3	37.0	0.65	0.76	37.0
3	R	478	0.0	0.901	77.1	LOS E	16.0	112.3	1.00	1.01	21.2
Approach		635	0.0	0.901	64.8	LOS E	16.0	112.3	0.91	0.95	23.7
East: Ginninderra Drive east											
4	L	555	0.0	0.930	52.7	LOS D	60.8	429.9	1.00	1.04	28.0
5	T	1330	3.0	0.930	46.3	LOS D	62.0	444.8	1.00	1.06	30.3
Approach		1885	2.1	0.930	47.5	LOS D	62.0	444.8	1.00	1.06	29.6
West: Ginninderra Drive west											
11	T	665	3.0	0.238	10.5	LOS B	7.1	51.1	0.47	0.41	56.8
12	R	269	0.0	0.692	47.2	LOS D	7.5	52.7	0.98	0.83	29.1
Approach		934	2.0	0.692	22.4	LOS C	7.5	52.7	0.64	0.54	44.3
All Vehicles		3354	1.7	0.930	44.5	LOS D	62.0	444.8	0.89	0.91	30.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian Queue ped	Pedestrian Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	15.6	LOS B	0.1	0.1	0.51	0.51
P2	Across S approach	53	15.6	LOS B	0.1	0.1	0.51	0.51
P3	Across E approach	53	47.2	LOS E	0.2	0.2	0.89	0.89
P4	Across E approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P7	Across W approach	53	51.8	LOS E	0.2	0.2	0.93	0.93
P8	Across W approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		318	39.6	LOS D			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -Post devt PM Peak
Aikman Drive - Joy Cummings Place

Aikman Drive / Joy Cummings Place
PM Peak
Post development
Signals - Fixed Time Cycle Time = 119 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	659	2.0	0.438	4.5	LOS A	12.4	88.4	0.36	0.33	51.7
26	R	28	0.0	0.280	64.8	LOS E	1.6	11.0	0.96	0.72	21.5
Approach		687	1.9	0.438	7.0	LOS A	12.4	88.4	0.38	0.34	48.9
North West: Joy Cummings Place											
27	L	41	0.0	1.000[3]	65.4	LOS E	2.3	16.3	0.97	0.72	21.4
29	R	31	0.0	0.141	59.9	LOS E	1.6	11.5	0.93	0.73	22.7
Approach		72	0.0	1.000	63.0	LOS E	2.3	16.3	0.95	0.72	21.9
South West: Aikman Drive south											
30	L	44	0.0	0.420	60.5	LOS E	2.4	16.6	0.94	0.73	22.5
31	T	1129	2.0	0.906	26.5	LOS C	63.8	454.4	0.93	0.94	32.0
Approach		1173	1.9	0.906	29.7	LOS C	63.8	454.4	0.93	0.93	31.6
All Vehicles		1932	1.9	1.000	22.8	LOS C	63.8	454.4	0.74	0.72	35.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 v/c >1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Queue ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P13	Across NW approach	53	10.1	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		106	31.9	LOS D			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: POST Devt -PM Peak Aikman Drive - UC Public Hospital

Aikman Drive / UC Public Hospital
PM Peak
Post devt
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: UC Public Hospital											
21	L	15	0.0	0.271	61.7	LOS E	1.8	12.5	0.98	0.72	22.3
23	R	15	0.0	0.271	62.0	LOS E	1.8	12.5	0.98	0.72	22.2
Approach		30	0.0	0.271	61.9	LOS E	1.8	12.5	0.98	0.72	22.2
North East: Aikman Drive north											
24	L	1	0.0	0.326	18.2	LOS B	11.2	80.1	0.41	0.94	41.2
25	T	822	2.0	1.000[3]	15.0	LOS B	11.2	80.1	0.68	0.59	40.5
Approach		823	2.0	1.000	15.0	LOS B	11.2	80.1	0.68	0.60	40.6
South West: Aikman Drive south											
31	T	635	2.0	0.509	12.5	LOS B	21.6	153.5	0.55	0.50	42.9
32	R	2	0.0	0.509	21.0	LOS C	21.6	153.5	0.55	1.04	39.8
Approach		637	2.0	0.509	12.6	LOS B	21.6	153.5	0.55	0.50	42.9
All Vehicles		1490	2.0	1.000	14.9	LOS B	21.6	153.5	0.63	0.56	40.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

3 v/c >1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Queue ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	7.6	LOS A	0.1	0.1	0.33	0.33
P11	Across NE approach	53	64.1	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		106	35.8	LOS D			0.64	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: FINAL -2012 AM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
AM Peak
2012
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	148	2.0	0.113	11.2	LOS B	1.4	10.1	0.28	0.69	49.2
3	R	174	2.0	0.316	51.1	LOS D	3.9	27.7	0.93	0.77	27.3
Approach		322	2.0	0.316	32.7	LOS C	3.9	27.7	0.63	0.74	34.4
East: Ginninderra Drive east											
4	L	541	0.0	0.610	15.6	LOS B	13.9	97.3	0.57	0.64	50.4
5	T	324	0.0	0.610	20.5	LOS C	13.9	97.3	0.84	0.70	37.9
Approach		865	0.0	0.610	20.8	LOS C	13.9	97.3	0.67	0.79	44.5
West: Ginninderra Drive west											
11	T	1927	3.0	0.884	28.6	LOS C	47.3	339.6	0.94	0.96	38.6
12	R	823	2.0	0.765	23.0	LOS C	10.7	76.2	0.79	0.83	42.8
Approach		2751	2.7	0.884	26.9	LOS C	47.3	339.6	0.90	0.92	39.8
All Vehicles		3937	2.0	0.884	26.1	LOS C	47.3	339.6	0.83	0.87	40.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Back of Queue ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	37.0	LOS D	0.1	0.1	0.86	0.86
P2	Across S approach	53	37.0	LOS D	0.1	0.1	0.86	0.86
P3	Across E approach	53	39.6	LOS D	0.1	0.1	0.89	0.89
P4	Across E approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P7	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
P8	Across W approach	53	44.2	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		318	41.0	LOS E			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Monday, 18 February 2013 4:15:27 PM
SIDRA INTERSECTION 5.1.7.2056
Project: H:\C12000\C12189\technical\Traffic\2012-AM peak- no devt.sip
8000937, BROWN CONSULTING, FLOATING

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: FINAL -2012 Am Peak - Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
Am Peak
2012

Signals - Fixed Time Cycle Time = 130 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	176	0.0	0.569	35.3	LOS D	23.0	163.7	0.79	0.86	31.3
22	T	805	3.0	0.569	28.9	LOS C	24.0	172.4	0.79	0.71	31.8
23	R	1	0.0	0.012	77.7	LOS E	0.1	0.5	0.97	0.59	19.3
Approach		982	2.5	0.569	30.1	LOS C	24.0	172.4	0.79	0.74	31.7
North East: Lawson north											
24	L	1	0.0	0.002	28.5	LOS C	0.0	0.3	0.62	0.64	33.9
25	T	1	0.0	0.002	42.2	LOS D	0.0	0.3	0.79	0.47	26.7
26	R	1	0.0	0.012	77.7	LOS E	0.1	0.5	0.97	0.59	19.2
Approach		3	0.0	0.012	49.5	LOS D	0.1	0.5	0.79	0.57	25.2
North West: Ginninderra Drive west											
27	L	1	0.0	0.889	68.0	LOS E	59.1	424.6	0.96	0.98	21.8
28	T	1847	3.0	0.889	48.1	LOS D	59.2	425.0	0.96	0.94	24.8
29	R	172	0.0	0.492	43.5	LOS D	3.5	24.5	0.99	0.77	27.4
Approach		2020	2.7	0.889	47.7	LOS D	59.2	425.0	0.96	0.92	25.0
South West: Allawoona Street south											
30	L	27	0.0	0.032	14.1	LOS B	0.5	3.2	0.42	0.69	43.4
31	T	1	0.0	0.032	6.2	LOS A	0.5	3.2	0.42	0.32	47.7
32	R	14	0.0	0.173	80.2	LOS F	1.0	6.7	0.99	0.69	18.9
Approach		42	0.0	0.173	35.9	LOS D	1.0	6.7	0.61	0.68	30.3
All Vehicles		3047	2.6	0.889	41.9	LOS D	59.2	425.0	0.90	0.86	26.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Pedestrian Back of Queue ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	63.1	LOS F	0.2	0.2	0.96	0.96
P11	Across NE approach	53	20.4	LOS C	0.1	0.1	0.54	0.54
P13	Across NW approach	53	62.2	LOS F	0.2	0.2	0.95	0.95
P15	Across SW approach	53	28.1	LOS C	0.1	0.1	0.64	0.64
All Pedestrians		212	43.4	LOS E			0.77	0.77

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay).
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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8000937, BROWN CONSULTING, FLOATING

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: FINAL -2012 AM Peak
Aikman Drive - Joy Cummng Place

Aikman Drive / Jpy Cummings Place
AM Peak
2012
Signals - Fixed Time Cycle Time = 86 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	1258	2.0	0.896	19.5	LOS B	54.5	388.2	0.85	0.88	37.1
26	R	50	0.0	0.293	31.7	LOS C	1.6	11.2	0.72	0.73	32.0
Approach		1308	1.9	0.896	20.0	LOS B	54.5	388.2	0.85	0.87	36.8
North West: Joy Cummings Place											
27	L	32	0.0	0.442	31.3	LOS C	1.0	7.0	0.71	0.70	32.2
29	R	39	0.0	0.144	47.5	LOS D	1.6	11.4	0.91	0.73	26.0
Approach		71	0.0	0.442	40.2	LOS D	1.6	11.4	0.82	0.72	28.5
South West: Aikman Drive south											
30	L	25	0.0	0.186	47.1	LOS D	1.0	7.2	0.90	0.71	26.1
31	T	282	2.0	0.439	27.0	LOS C	10.4	73.7	0.83	0.71	32.9
Approach		307	1.8	0.439	28.6	LOS C	10.4	73.7	0.84	0.71	32.2
All Vehicles		1686	1.8	0.896	22.4	LOS C	54.5	388.2	0.84	0.84	35.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	42.2	LOS E	0.1	0.1	0.94	0.94
P13	Across NW approach	53	26.3	LOS C	0.1	0.1	0.74	0.74
All Pedestrians		106	34.2	LOS D			0.84	0.84

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 PM Peak - Ginninderra Drive - Aikman Drive

Ginninderra Drive / Aikman Drive
PM Peak
2012
Signals - Fixed Time Cycle Time = 106 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Aikman Drive											
1	L	149	0.0	0.180	21.7	LOS C	3.9	27.3	0.58	0.75	40.6
3	R	447	0.0	0.850	65.3	LOS E	12.8	89.3	1.00	0.96	23.0
Approach		596	0.0	0.850	54.4	LOS D	12.8	89.3	0.90	0.91	26.3
East: Ginninderra Drive east											
4	L	435	0.0	0.880	42.0	LOS D	42.0	298.0	0.96	1.00	32.6
5	T	1211	3.0	0.880	34.2	LOS C	43.2	310.4	0.97	0.98	35.1
Approach		1646	2.2	0.880	36.3	LOS D	43.2	310.4	0.97	0.98	34.4
West: Ginninderra Drive west											
11	T	543	3.0	0.239	10.7	LOS B	6.5	46.8	0.50	0.43	56.3
12	R	267	0.0	0.611	39.8	LOS D	6.3	44.3	0.96	0.79	32.7
Approach		810	2.0	0.611	20.0	LOS B	6.5	46.8	0.66	0.55	46.2
All Vehicles		3052	1.7	0.880	35.5	LOS D	43.2	310.4	0.87	0.85	34.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	16.4	LOS B	0.1	0.1	0.56	0.56
P2	Across S approach	53	16.4	LOS B	0.1	0.1	0.56	0.56
P3	Across E approach	53	42.6	LOS E	0.1	0.1	0.90	0.90
P4	Across E approach	53	47.2	LOS E	0.2	0.2	0.94	0.94
P7	Across W approach	53	47.2	LOS E	0.2	0.2	0.94	0.94
P8	Across W approach	53	47.2	LOS E	0.2	0.2	0.94	0.94
All Pedestrians		318	36.2	LOS D			0.81	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 PM Peak
Aikman Drive - Joy Cummings Place

Aikman Drive / Jpy Cummings Place
PM Peak
2012
Signals - Fixed Time Cycle Time = 119 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East: Aikman Drive north											
25	T	544	2.0	0.362	4.2	LOS A	9.4	66.8	0.33	0.30	52.3
26	R	28	0.0	0.169	26.0	LOS C	0.9	6.0	0.66	0.70	34.9
Approach		572	1.9	0.362	5.2	LOS A	9.4	66.8	0.34	0.32	51.1
North West: Joy Cummings Place											
27	L	43	0.0	0.577	29.4	LOS C	1.4	10.1	0.57	0.75	33.1
29	R	29	0.0	0.133	59.8	LOS E	1.5	10.8	0.93	0.72	22.7
Approach		72	0.0	0.577	41.6	LOS D	1.5	10.8	0.71	0.74	27.9
South West: Aikman Drive south											
30	L	44	0.0	0.420	60.5	LOS E	2.4	16.6	0.94	0.73	22.5
31	T	282	2.0	0.562	41.2	LOS D	14.2	101.5	0.92	0.78	27.0
Approach		326	1.7	0.562	43.8	LOS D	14.2	101.5	0.92	0.77	26.3
All Vehicles		970	1.7	0.577	20.9	LOS C	14.2	101.5	0.66	0.50	37.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	53.7	LOS E	0.2	0.2	0.95	0.95
P13	Across NW approach	53	37.9	LOS D	0.1	0.1	0.80	0.80
All Pedestrians		106	45.8	LOS E			0.87	0.87

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: FINAL -2012 PM Peak -
Ginninderra Drive / Allawoona Street

Ginninderra Drive / Allawoona Street
PM Peak
2012

Signals - Fixed Time Cycle Time = 127 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Ginninderra Drive east											
21	L	60	0.0	0.901	58.0	LOS E	47.4	339.6	1.00	1.03	24.1
22	T	1352	3.0	0.901	50.0	LOS D	47.4	340.6	1.00	1.03	24.2
23	R	1	0.0	0.011	71.6	LOS E	0.1	0.4	0.97	0.59	20.3
Approach		1413	2.9	0.901	50.4	LOS D	47.4	340.6	1.00	1.03	24.2
North East: Lawson north											
24	L	1	0.0	0.002	18.5	LOS B	0.0	0.1	0.57	0.64	40.1
25	T	1	0.0	0.002	35.0	LOS C	0.0	0.3	0.76	0.45	29.3
26	R	1	0.0	0.011	71.6	LOS E	0.1	0.4	0.97	0.59	20.3
Approach		3	0.0	0.011	41.7	LOS D	0.1	0.4	0.77	0.56	27.7
North West: Ginninderra Drive west											
27	L	1	0.0	0.485	45.7	LOS D	28.0	201.3	0.70	0.92	27.6
28	T	934	3.0	0.485	29.9	LOS C	28.0	201.3	0.70	0.62	31.8
29	R	67	0.0	0.191	38.9	LOS D	1.1	8.0	0.95	0.72	29.0
Approach		1002	2.8	0.485	30.5	LOS C	28.0	201.3	0.72	0.63	31.5
South West: Allawoona Street south											
30	L	155	0.0	0.256	24.9	LOS C	5.5	38.6	0.72	0.78	35.9
31	T	22	0.0	0.256	17.1	LOS B	5.5	38.6	0.72	0.59	37.3
32	R	76	0.0	0.889	85.0	LOS F	5.5	38.8	1.00	0.95	18.1
Approach		255	0.0	0.889	42.6	LOS D	5.5	38.8	0.80	0.81	27.6
All Vehicles		2673	2.6	0.901	42.2	LOS D	47.4	340.6	0.88	0.86	26.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model used.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P9	Across SE approach	53	57.6	LOS E	0.2	0.2	0.95	0.95
P11	Across NE approach	53	22.1	LOS C	0.1	0.1	0.59	0.59
P13	Across NW approach	53	56.7	LOS E	0.2	0.2	0.94	0.94
P15	Across SW approach	53	29.8	LOS C	0.1	0.1	0.69	0.69
All Pedestrians		212	41.6	LOS E			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

APPENDIX B

Lawson Suburb SIDRA Results

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Shaping the Future

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Our Ref YN110003 Lawson South Master Plan

Date: 6 Dec 2011

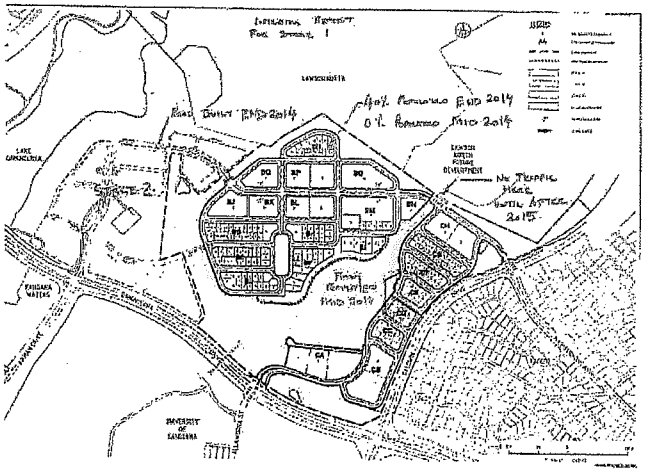
Attn: Ian Patrick

DESIGN NOTE – Lawson South

1.1 Introduction

The design note supplements the Lawson South Masterplanning Study; Traffic Analysis and Road Hierarchy Report, Cardno 2011. It has been prepared following a request to consider the traffic impact of interim development prior to full release on the internal and external road network. The end of 2014 has been assessed, immediately prior to construction of the Road 2 – Road 1 connection, as it is considered to represent the worst case scenario, **Figure 1** illustrates the short term staging plan for Lawson South.

Figure 1 Interim Staging Plan



Key aspects to note concerning the 'end of 2014' scenario include:

- There are only two points of entry / exit to Lawson South as Aikman Drive / Ginninderra Drive and Lawson North connections have not yet been constructed
- The eastern portion of Stage 1 is fully released
- The central portion of Stage 1 is 40% released
- Stage 2 is yet to be released

1.2 Traffic Distribution and Generation

Traffic movements have been re-distributed across the network, with the most significant impact occurring at Road 2 / Baldwin Drive / Maribyrnong Avenue. This access represents the most efficient entry to the external road network for the whole of the central portion of Stage 1. As a result, Road 2 facilitates the bulk of re-assigned traffic movements into/out of the development (Road 2 = 2,765 vpd c.f. Road 3 = 1,779 vpd). The total number of external traffic movements generated in 2014 is approximately 4,500 vpd.

The total number of vehicle movements generated by Lawson upon full release is 13,600 vpd, excluding the Lawson North movements (1,400 vpd) which travel through Lawson South.

In order to assess the performance of Road 2 / Baldwin Drive / Maribyrnong Avenue and Road 3 / Ginninderra Drive / Allawoona Street, a background traffic forecast for 2014 is required at these intersections. Background volumes were determined through interpolating between the intersection turn counts obtained as part of the *Lawson Outline Plan; External Traffic Analysis Working Paper, Total Lawson Development (Maunsell 2009)* and the 2021 Canberra Transport Model (EMME) forecast.

1.3 Intersection Analysis

Figures 2 – 5 summarise the intersection performance of Road 2 / Baldwin Drive / Maribyrnong Avenue and Road 3 / Ginninderra Drive / Allawoona Street in 2014 and 2021 during both peak periods. Complete Sidra Movement Summaries are appended to this report.

Figure 2 2014 AM Performance Summary

Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	1.000	63.7	LOS E
Baldwin Drive/Maribyrnong Avenue	>1.000	72.1	LOS F

Figure 3 2021 AM Performance Summary

Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	>1.000	286.8	LOS F
Baldwin Drive/Maribyrnong Avenue	1.000	69.1	LOS E

Figure 4. 2014 PM Performance Summary

Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	1.000	75.8	LOS F
Baldwin Drive/Maribyrnong Avenue	1.000	33.7	LOS C

Figure 5 2021 PM Performance Summary

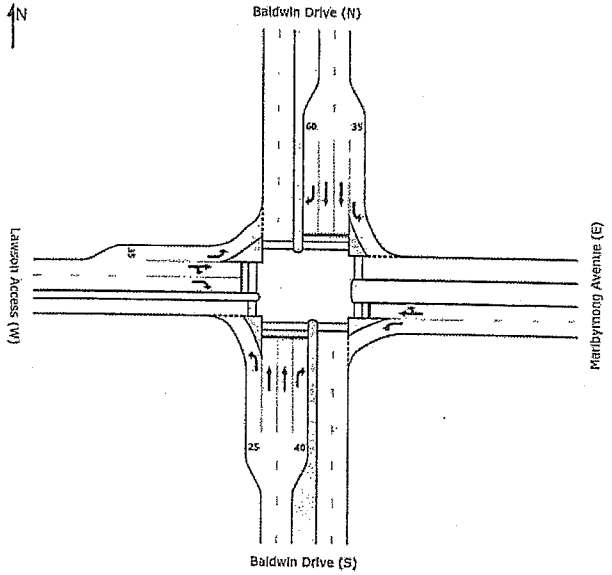
Intersection	Scenario		
	Degree of Saturation	Delays (s)	LoS
Ginninderra Drive/Allawoona St	>1.000	611.2	LOS F
Baldwin Drive/Maribyrnong Avenue	1.000	28.6	LOS C

Some inconsistencies were observed between the counts undertaken in 2009 and the Canberra Transport Model 2021 forecast; in particular a significant drop in right turning vehicles on the Baldwin Drive (South) right turn movement, however in the main the 2014 scenario represented a small increase in vehicle movements over the 2009 observed volumes. An update to the EMME model in this region, accommodating current planning intentions of nearby landuses such as University of Canberra is recommended to provide greater clarity concerning future volumes along Baldwin Drive and Ginninderra Drive.

Road 3 / Ginninderra Drive / Allawoona Street performs unsatisfactorily primarily due to capacity constraints on Ginninderra Drive and Allawoona Street.

Road 2 / Baldwin Drive / Maribyrnong Avenue (illustrated in **Figure 6**) performs satisfactorily during the PM peak period, however is at capacity during the AM peak period. The phasing adopted is in line with signalised plan S-251-3 (Roads ACT, 2009). Alternative phasing arrangements were tested, including a Single Diamond Overlap (SDO) arrangement on the Baldwin Drive approaches, however the performance was not improved.

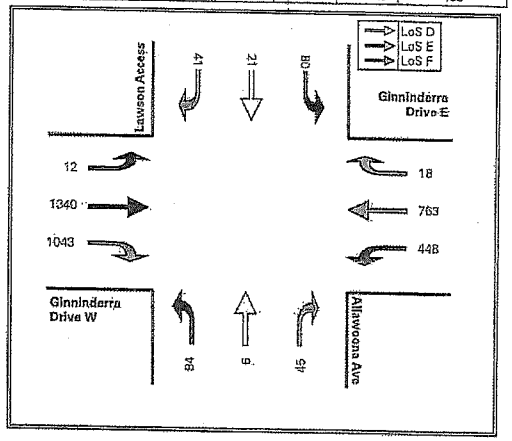
Figure 6 Road 2 / Baldwin Drive / Maribyrnong Avenue



Attachments: Peak period Sidra movement summaries.

Ginninderra Drive/Aljawoona Ave AM: 2014 AM
Signals

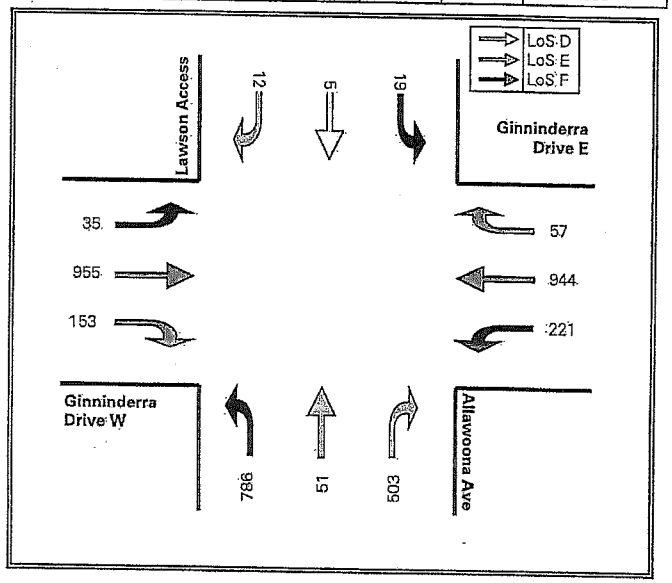
Movement	Light Vehicles	Heavy Vehicles	DoS	Delay (s)	LoS	95% Back of Queue (m)
Aljawoona Ave						
Left	81	3	0.244	20.6	LOS B	24
Through	6	0	0.018	49.5	LOS D	4
Right	44	1	0.605	85.9	LOS F	34
Approach	**131**	**4**	**0.605**	**43.8**	**LOS D**	**34**
Ginninderra Drive E						
Left	435	13	1.000	22.6	LOS B	78
Through	740	23	0.997	122.0	LOS F	384
Right	17	1	0.248	84.4	LOS F	15
Approach	**1192**	**37**	**1.000**	**98.3**	**LOS F**	**384**
Lawson Access						
Left	78	2	0.383	20.6	LOS B	26
Through	20	1	0.032	49.8	LOS D	7
Right	40	1	0.552	85.4	LOS F	31
Approach	**138**	**4**	**0.552**	**43.6**	**LOS D**	**31**
Ginninderra Drive W						
Left	12	0	0.009	10.1	LOS A	0
Through	1300	40	0.708	23.9	LOS B	267
Right	1012	31	1.000	85.0	LOS F	408
Approach	**2324**	**71**	**1.000**	**48.2**	**LOS D**	**408**
All Vehicles	**3785**	**116**	**1.000**	**63.7**	**LOS E**	**408**



Ginninderra Drive/Allawoona Ave PM: 2014 PM

Signals

Movement	Light Vehicles	Heavy Vehicles	DoS	Delay (s)	LoS	95% Back of Queue (m)
Allawoona Ave						
Left	762	24	1.000	21.7	LOS B	78
Through	49	2	0.881	57.7	LOS E	276
Right	488	15	0.849	61.0	LOS E	261
Approach	**1299**	**41**	**1.000**	**49.8**	**LOS D**	**276**
Ginninderra Drive E						
Left	214	7	0.266	10.5	LOS A	14
Through	916	28	0.982	107.4	LOS F	365
Right	55	2	0.662	86.0	LOS F	42
Approach	**1185**	**37**	**0.982**	**88.9**	**LOS F**	**365**
Lawson Access						
Left	18	1	0.100	35.0	LOS C	9
Through	5	0	0.008	51.9	LOS D	2
Right	12	0	0.058	61.8	LOS E	8
Approach	**35**	**1**	**0.100**	**46.3**	**LOS D**	**9**
Ginninderra Drive W						
Left	34	1	0.026	10.7	LOS A	3
Through	926	29	0.968	96.0	LOS F	340
Right	148	5	0.887	94.4	LOS F	57
Approach	**1108**	**35**	**0.968**	**93.2**	**LOS F**	**340**
All Vehicles	**3627**	**114**	**1.000**	**75.8**	**LOS F**	**365**



4.3 Proposed Intersection Description

Our Ref: C12189
Contact: Joel Stevenson

BROWN

11 December 2013

ACT Shared Services Procurement
PO Box 818
DICKSON
ACT 2602

Attention: Phil True

Dear Phil

University of Canberra Public Hospital - Proposed Intersection on Ginninderra Drive

Brown Consulting (ACT) was engaged by Shared Services Procurement (SSP) on behalf of the ACT Health Directorate to investigate the feasibility of a proposed new intersection on Ginninderra Drive from the University of Canberra Public Hospital (UCPH) access road.

The following report is based on the position of the proposed Ginninderra Drive intersection and associated access road as nominated through consultation between representatives from the ACT Health Directorate and the University of Canberra.

Existing Conditions

Ginninderra Drive is a major arterial road carrying approximately up to 20,000 vehicles per day (vpd) eastbound and 16,500 vpd westbound. Ginninderra Drive is currently two lanes in each direction with a posted speed limit of 80km/h. The Lawson Outline Plan External Traffic Analysis Working Paper prepared by AECOM for ACTPLA in 2009, suggests that to meet the demands from a growing Gungahlin and west Belconnen and resultant increased traffic flows that Ginninderra Drive may require to be widened to 3 lanes in each direction.

Aikman Drive is also an arterial road with daily traffic volumes of around 16,000 vpd base on the AM peak volume 1665 vph. The posted speed limit of this road is 60km/h. The Aikman Drive road corridor has provision for future duplication which may be triggered by the development of the Lawson residential subdivision immediately north of the Ginninderra Drive / Aikman Drive intersection.

ACT Health Directorate proposes to develop a new sub-acute hospital for the northern suburbs of Canberra. The facility will be located at the University of Canberra and will be known as the University of Canberra Public Hospital, situated on Block 1 Section 3 Bruce and currently zoned under the ACT Government Territory Plan as CF: Community Facilities.

Existing intersections along Ginninderra Drive in the vicinity of the proposed development are:

- **Aikman Drive / Ginninderra Drive** – This intersection is located approximately 220m west of the proposed intersection between Ginninderra Drive and the UCPH access road. The Aikman Drive / Ginninderra Drive intersection currently operating as three way signalised T intersection with the northern leg currently providing restricted access for maintenance vehicles. The northern leg will

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ultimately provide access to the new Lawson subdivision resulting in the intersection operating as a four way signalised intersection.

- **Allawoona Street / Ginninderra Drive** – This intersection is located approximately 480m east of the proposed intersection between Ginninderra Drive and the UCPH access road. This intersection currently operating as three way signalised T intersection with a stub for the northern leg that will also ultimately provide access to the new Lawson subdivision resulting in the intersection operating as a four way signalised intersection.

Existing intersections along Aikman Drive in the vicinity of the proposed development are:

- **Joy Cummings Place/ Aikman Drive** – This intersection is located approximately 375m south of the Ginninderra Drive / Aikman Drive intersection and currently operates as three way signalised T intersection.

Proposed Roads and Intersections

An access road for the University of Canberra Public Hospital is proposed to connect between Ginninderra Drive and Aikman Drive as shown on the in Figure 1 below. The connection to Ginninderra Drive is proposed to be located approximately 220m to the east of Aikman Drive / Ginninderra Drive intersection. The access road connection onto Aikman Drive will become a fourth leg to the existing signalised intersection of Joy Cummings Place and Aikman Drive.

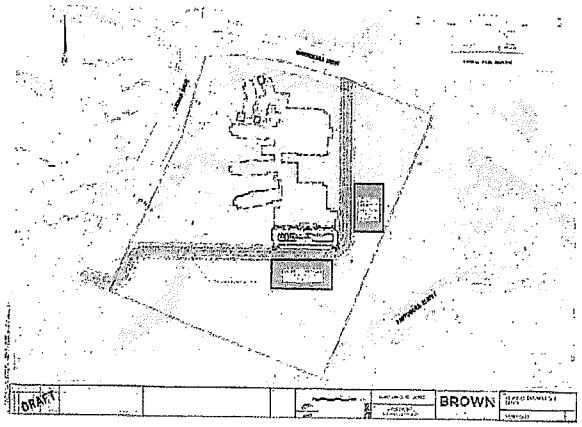


Figure 1: Proposed site layout showing location of the access road and connections onto Ginninderra Drive and Aikman Drive.

The proposed intersection along Ginninderra Drive is to consist of a left in / left out arrangement with the median remaining closed. The intersection would include a 95m long deceleration lane in accordance with Austroads Design to Road Design Part 4A (2010) Unsignalised and Signalised Intersections; to provide sufficient

length to decelerate from 80km/h to 20km/h, thus enabling vehicles to negotiate the left turn into the access road. A concept layout for the proposed intersection is provided on Drawings C12189-SK25 and C12189-SK26.

Using the RMS/RTA Guide to Traffic Generating Developments (2002) the 200 bed hospital will generate 102 vph in the AM peak, 127 vph in the PM peak and peak vehicle traffic (PVT 3-4pm for a hospital taking into account shift changes and patient/visitor movements) of 186 vph, which is equivalent of 1,860 vehicles per day.

The following assumptions have been made with regards to the morning and evening peak vehicular movements for the left-in left-out arrangement:

- 80% of vehicles will enter the site via the Ginninderra Drive access road. 20% of vehicles will enter via the Aikman Drive intersection.
- 40% of vehicles will exit the site via the Ginninderra Drive access road, with 60% of vehicles exiting via the Aikman Drive intersection. This assumption is based on the fact that high westbound volumes on Ginninderra Drive will discourage motorists to exit via this point.
- For the morning peak trips generated above, a peak period split of 90% in, 10% out has been adopted.
- For the evening peak trips generated above, a peak period split of 10% in, 90% out has been adopted.
- No assumptions were made for the PVT as traffic split may be highly variable for any given day.

Based on the assumption above, the intersection between the access road and Ginninderra Drive operated at a Level of Service (LoS) A for both the AM and PM peak periods modelled. The maximum average delay experienced was 12.3 seconds for the left-in movement from Ginninderra Drive to the UCPH in the AM peak, which is a free flowing movement. No significant queuing occurred at the intersection.

Based on the abovementioned assumptions and adopting the traffic volumes for the AM peak, traffic volumes using the access road at Ginninderra Drive are predicted to be in the order of 750vpd.

Access Management

Access management is the process of controlling the movement of traffic between a road and adjacent land. The purpose of access management is to protect the safety and efficiency of the traffic function of the road, while acknowledging the needs and amenable use of adjacent land, in particular with respect to safe and appropriate access.

Austroads Guide to Traffic Management Part 5 Road Management suggests suitable separation distance for access roads from adjoining developments to urban arterial roads. The two scenarios depicted in the following diagrams extracted from the Guide suggest a separation distance for high traffic generating developments, such as subdivisions and the like, of 800m (refer Figure 2). For developments generating low traffic volumes with restricted access, for example left-in / left out, a separation distance of 200m (centre to centre) is recommended, refer
Figure 3 below.

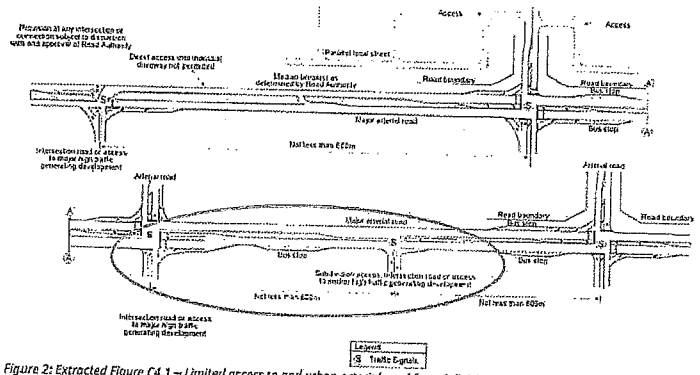


Figure 2: Extracted Figure C4.1 – Limited access to and urban arterial road for subdivisions and high traffic generating developments. (Austroads AGTM05/08: Road Management.)

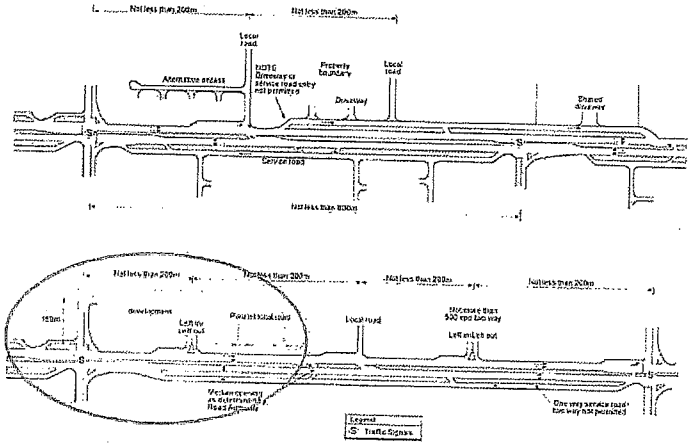


Figure 3: Extracted Figure C4.2 – Limited access to and urban arterial road for low traffic generating developments. (Austroads AGTM05/08: Road Management.)

The Aikman Drive intersection is located downstream of the proposed intersection and access road to the hospital. Austroads Road Design Guidelines Part 4 – Intersections and Crossings General, describes methods of determining appropriate access spacing for roads of varying classifications, and suggests that arterial roads should have no intersecting driveways, but where minor access is required it should be located outside the

functional area of the major intersection as illustrated in Figure 4 below. This figure is based on the right turn auxiliary lane, where:

d1 – distance travelled during perception-reaction time of driver.
d2 – distance travelled while driver manoeuvres laterally and decelerates to a stop (lateral movement of 1.2 m/sec in urban areas; 0.9 m/sec in rural areas).
d3 – length required to store turning vehicles.

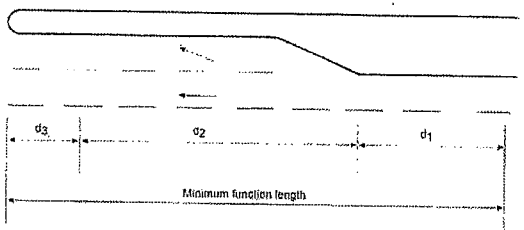


Figure 4- Upstream functional intersection area – based in right turning vehicles.

Austroads suggests in Table A2 that the functional area of a major intersection on an arterial road operating at 80km/h (d3+d2+d1) is 215m.

The right turn lane for access to the new residential suburb of Lawson has been constructed, and Traffic Control Device Drawings for the intersection indicate that a 100m right turn lane is provided, this is approximately the same length as the left turn lane to Aikman Drive. Hence for the proposed right turn to Lawson d1+d2=100m. Reaction time of 2.5 seconds normally applied to road design, and equates to a distance for d1 of around 45m. The location of the proposed hospital access intersection with d3 approximately 80m, for both left and right turn auxiliary lanes, provides around 3.6 seconds for perception-reaction time.

Conclusion

The proposed intersection between the UCPH access road and Ginninderra Drive would be located approximately 200 m east of the Aikman Drive / Ginninderra Drive intersection (centre to centre). Based on the RMS Guide the hospital is expected to generate daily traffic volumes up to 1,860vpd. The predicted traffic volumes for the UCPH are considered to be significantly less than that of a major development such as a shopping centre or residential subdivision, hence intersection spacing to be adopted is in line with Figure 3 above.

The intersection analysis and assumptions outlined above suggests, based on the AM peak, the access road onto Ginninderra Drive is expected to carry around 740vpd in both directions, approximately 6% of the current Ginninderra Drive westbound carriageway traffic volume.

The SIDRA analysis shows that intersection operated at a LoS A for both the AM and PM peak periods. The maximum average delay experienced was 12.3 sec for vehicles for the left-in movement from Ginninderra Drive to the UCPH in the AM peak. It is noted that the left turn is a free flowing movement, hence the delay is the time required for vehicles to execute the left turn movement. The analysis demonstrated that no significant queuing occurred at the intersection.

It is considered that the proposed location of the intersection, being approximately 200m east of the existing major signalised intersection of Ginninderra Drive and Aikman Drive complies with the 200m minimum distance

suggested in the Austroads Guide for limited access road connection to an urban arterial road, with the second access point to the development to be provided on Aikman Drive for the dispersal of all traffic generation. The proposed intersection also located outside the upstream functional area of the Aikman Drive signalised intersection in its current form.

The provision of a high entry left turn exit rather than an acceleration lane will allow vehicles to select an appropriate gap to enter the desired lane. The platooning incurred from the upstream signals at Allawoona Street will also assist the flow of exiting traffic. Delays experienced during the PM peak may induce some traffic intending to travel west on Ginninderra Drive to use the signalised intersection at Aikman Drive.

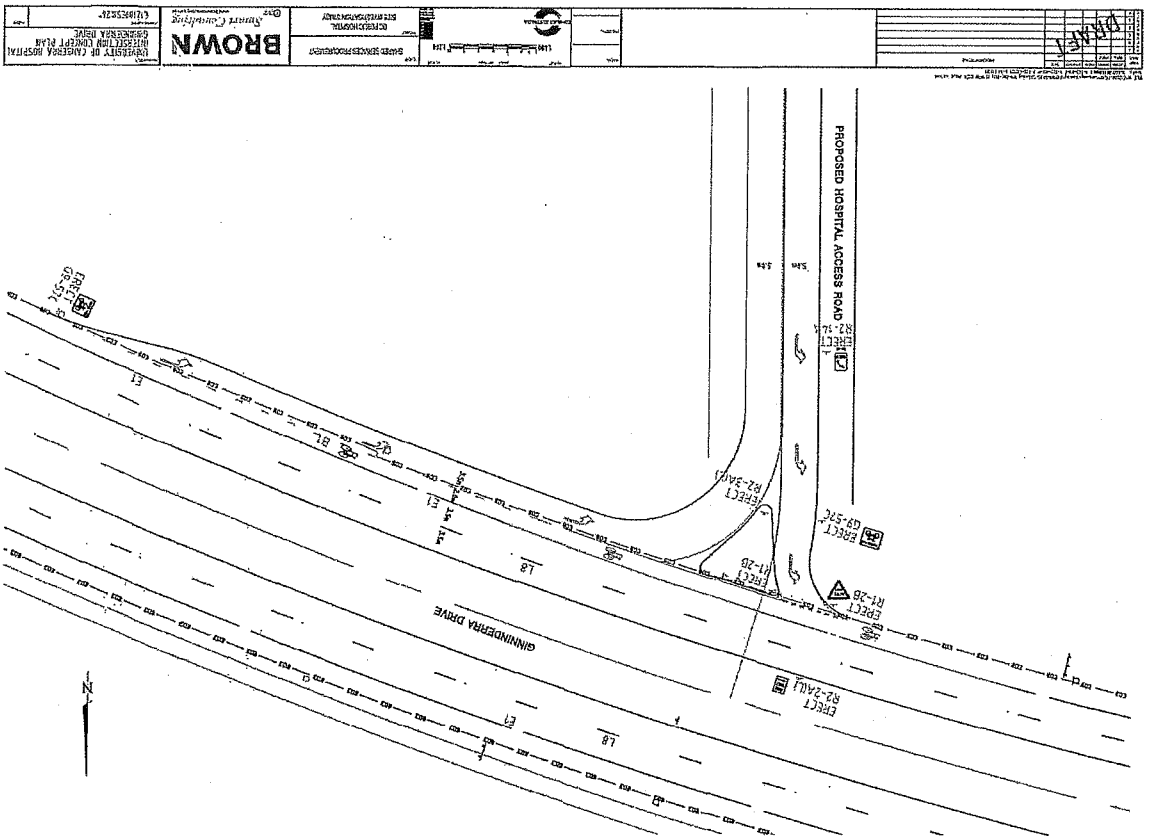
As the position of the proposed intersection complies with the guidelines for separation distance from the adjacent major intersection as stipulated by for Austroads Design to Road Design Part 4A, we recommend that this intersection position and arrangement be incorporated into the overall design scheme for the University of Canberra Public Hospital.

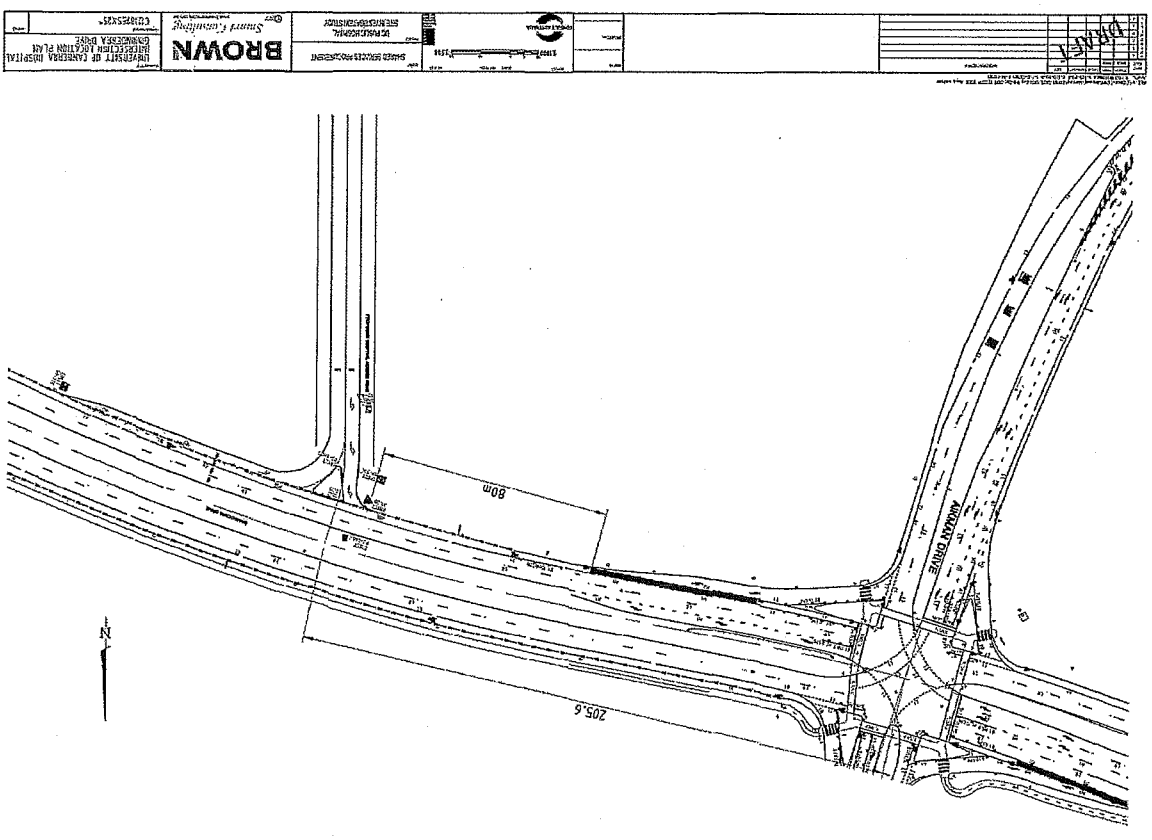
Yours sincerely
Brown Consulting (ACT) Pty Ltd

Joel Stevenson
Project Manager- Roads and Traffic

ATTACHMENTS
1. Drawings C12189-SK25 and C12189-SK26

COPIES:
1. Alex Badgery – ACT Health Directorate


PROPOSED HOSPITAL ACCESS ROAD
GINNINDERRA DRIVE
BROWN


80m
205.6
BROWN

JOY CUMMINGS PLACE
AIKMAN DRIVE
N

JOY CUMMINGS PLACE
AIKMAN DRIVE
UCPH / RING ROAD
N

JOY CUMMINGS PLACE
AIKMAN DRIVE
N

JOY CUMMINGS PLACE
AIKMAN DRIVE
N

4.4 TAMS Endorsement of Intersection Layout

From: True, Phil [Phil.True@act.gov.au]
Sent: Friday, 23 January 2015 11:40 AM
To: Stefano Scalzo
Subject: FW: UCPH Traffic Report

1st email of endorsement!

next one confirms that position stands!

From: Jatheendran, Lingam
Sent: Thursday, 23 January 2014 4:28 PM
To: True, Phil; Badgery, Alex (Health); Joseph, Gabriel
Subject: UCPH Traffic Report

Hi Phil

Further to the email from Gabriel Joseph, Senior Manager, AA, TAMS. Asset Acceptance endorses the proposed intersection layout plan in principle based on the traffic analysis carried out by Browns Consulting.

Please note that this endorsement in principle is provided on the basis of excluding any future traffic generated by developments proposed in the UC Master Plan. Therefore the proposed road will not cater for any additional traffic generated by the land use within the University Campus or a connection to the University internal road network, as these will reduce the capacity and performance of the new intersection on Ginninderra Drive beyond the acceptable level of service.

If and when the situation is changed and the proposed road is required to carry additional traffic from UC, a new traffic study must be carried out and all improvement measures identified to accommodate the additional traffic must be implemented before the road is opened to additional traffic.

If you need any clarification on the above please do not hesitate to contact me."

Regards
Lingam Jatheendran
Chief Engineer
Asset Acceptance Section | Operational Support Branch | Directorate Services Division
Territory & Municipal Services Directorate (TAMS) | ACT Government

☎Ph: (02) 6207 6592 | 🖷 Fax: (02) 6207 7484

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Territory and Municipal Services

4.5 Transport & Services Zone

Rules		Criteria		Comments
Part A - Element 1: Restrictions on Use				
1.1 Use and Form				
There is no applicable rule.		C1 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.	Not Applicable	
There is no applicable rule.		C2 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.	Not Applicable	
Part B - Element 1: Restrictions on Use				
1.1 Plans of Management				
There is no applicable rule		C7 Where relevant, the proposed development is consistent with the approved Plan of Management.	Not Applicable	
Element 2: Building and Site Controls				
2.1 Subdivision				
R8 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.	√ √	Criterion satisfied
2.2 Demolition				
R9 In accordance with section 146 of the Planning and Development Act 2007, the application is accompanied by a Statement of Endorsement from utilities provider (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 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 protection requirements.	√ Not Applicable Not Applicable Not Applicable	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.	√	
2.3 National Capital Plan				
There is no applicable rule.		C10 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.	Not Applicable	
Element 3: Built Form				
3.1 Materials and Finish				
There is no applicable rule.		C11 Where development exposes a blank façade of an adjoining building, a visually interesting architectural treatment is applied to that wall such as through the use of colour, articulation, materials and shadows.	Not Applicable	
There is no applicable rule.		C12 The development uses high quality materials that are not incompatible with the character of existing adjacent development and the desired architectural character of the area.	√	Criterion satisfied
3.2 Crime Prevention Through Environmental Design				
There is no applicable rule.		C13 The development meets the requirements of the Crime Prevention Through Environmental Design General Code.	√	Criterion satisfied
3.3 Access and Mobility				
There is no applicable rule.		C14 The development meets the requirements of the Access and Mobility General Code.	√	Criterion satisfied
Element 4: Parking and Site Access				
4.1 Traffic Generation				
There is no applicable rule.		C15 The existing road network can accommodate the amount of traffic that is likely to be generated by the development.	√	Endorsement in principle received from TAMS
4.2 Vehicle Access and Parking				
There is no applicable rule.		C16 Vehicle access and parking complies with the requirements of the Parking and Vehicular Access General Code.	√	Criterion satisfied
4.3 Bicycle Parking				
There is no applicable rule.		C17 Bicycle Parking complies with the requirements of the Bicycle Parking General Code.	√	Criterion satisfied
4.4 Pedestrian Movement				
There is no applicable rule.		C18 Safe and convenient movement of public transport passengers, pedestrians and cyclists is provided.	√	Criterion satisfied
Element 5: Amenity				
5.1 Lighting				
R19 External lighting is provided to building frontages, all pathways, roads, laneways and car-parking areas in accordance with Australian Standard AS1158.3.1 Pedestrian Lighting.	√	C19 External lighting is provided in accordance with the Crime Prevention Through Environmental Design General Code.	√	Criterion satisfied
R20 All external lighting provided is in accordance with AS 4282 Control of the Obtrusive Effects of Outdoor Lighting.	√	C20 All outdoor lighting, including security and car park lighting, is designed and sited to minimise light spill.	√	Criterion satisfied
5.2 Signs				
There is no applicable rule.		C21 Signs comply with the Signs General Code.	Not Applicable	
Element 6: Environment				
6.1 Assessment of Environmental Effects				
There is no applicable rule.		C22 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 and appearance of any building, area of architectural, historic, aesthetic or scientific interest, or other object or place of special cultural or heritage value c) impacts on public health and safety, including crime prevention d) whether public transport services are necessary and, if so, whether they are available and adequate e) impacts on the likely accessibility to facilities and services for users and customers	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable	

		f) 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	Not Applicable	
		g) impacts on the watercourses and drainage characteristics of the area, including water quality	Not Applicable	
		h) impacts on the amenity of surrounding land uses, including impacts on air quality, noise, overshadowing, privacy, and the level of wind turbulence generated	Not Applicable	
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				
R23 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 another tool as included in the Water Ways: Water Sensitive Urban Design General Code. The 40% target is met without any reliance on landscaping measures to reduce consumption. This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area.	√	C23 This is a mandatory requirement. There is no applicable criterion.		
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				
R25 Sites of size greater than 5,000m2 or roads longer than 1 km need to provide evidence showing a reduction in average annual stormwater pollutant export load of: a) suspended solids by 60% b) total phosphorous by 45% c) total nitrogen by 40% compared to an urban catchment with no water quality management controls, using the MUSIC model to demonstrate compliance. This requirement can be met by associated stormwater works in the same catchment. This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area or to road modifications where the increase in pavement areas is less than 50% of the existing area.		C25 Sites of size greater than 5,000m2 or roads longer than 1 km need to provide evidence showing a reduction in average annual stormwater pollutant export load of: a) suspended solids by 60% 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. This requirement can be met by associated stormwater works in the same catchment. This requirement does not apply for extensions with an increase in the combined roof area, driveway, car manoeuvring areas and car parking areas of less than 25% of the original area or to road modifications where the increase in pavement areas is less than 50% of the existing area.	Not Applicable	
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				
R26 All sites of size greater than 2,000m2 and subject to redevelopment need to ensure that the capacity of the existing pipe (minor) stormwater connection to the site is not exceeded in the 1-in-10 year storm event. All sites of size greater than 2,000m2 and subject to redevelopment need to ensure that the capacity of the existing overland (major) stormwater system to the site is not exceeded in the 1-in-100 year storm event		C26 Evidence is provided by a suitably qualified person that shows that for all sites of size greater than 2,000m2 and subject to redevelopment EITHER a reduction of 1-in-5 year and 1-in-100 year stormwater peak run off flow to pre-development levels. See WaterWays General Code for more detail. OR That the capacity of the downstream piped stormwater system to its outlet with an open channel is not exceeded in the 1-in-10 year storm event.	Not Applicable	
6.5 Heritage				
R27 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.		C27 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.	Not Applicable	
6.6 Contamination				
R28 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 Environment Protection Authority Contaminated Sites Environmental Protection Policy 2000, and it is demonstrated that the land is suitable for the proposed development.		C28 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	Not Applicable	
6.7 Trees				
R29 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 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 trees and declared site are defined under the Tree Protection Act 2005.*	Not Applicable	This is a mandatory requirement. There is no applicable criterion.		
6.8 Erosion and Sediment Control				
R30 For sites less than 0.3 of a hectare, a plan is provided to demonstrate that the development complies with the *ACT Environment Protection Authority, Environment Protection Guidelines for Construction and Land Development in the ACT, August 2007.*		C30 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.*	Not Applicable	
R31 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.		C31 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.	√	
6.9 Hazardous Materials				
R32 For the demolition of single dwelling housing (including garages and carports) constructed* prior to 1985, a Hazardous Materials Survey (including an asbestos survey) is carried out and signed by an appropriately licensed person 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.	Not Applicable	C32 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 Development Act 2007	Not Applicable	
Element 7: Services				
7.1 Waste Management				
R33 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.		C33 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		
7.2 Waste Water				
R34 Subject to ACTEWAGL approval, all under cover areas drain to the sewer.		C34 This is a mandatory requirement. There is no applicable criterion.		

7.3 Utilities				
R35 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 there is a conflict between planning and utility requirements, the utility requirements take precedence over other provisions of this Code.	Not Applicable	C35 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*.	Not Applicable	
7.4 Storage				
R36 Outdoor storage areas are located behind the building line and screened from view from any road or other public area.	Not Applicable	C36 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.	Not Applicable	
R37 Outdoor storage areas do not encroach on required car-parking spaces, driveways exclusively required for vehicular circulation or landscape areas.	Not Applicable	This is a mandatory requirement. There is no applicable criterion.	Not Applicable	
7.5 Servicing and Site Management				
R38 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*.	√	C38 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*.	√	

4.6 ACT Fire and Emergency Services

This is the record from the informal meeting with ACT Fire and Emergency Services :

From: Kirsten Westaway
Sent: Wednesday, 26 November 2014 1:41 PM
To: 'Todd, Andrew'
Cc: Stefano Scalzo; Alastair Flynn; Codey Lyon; 'HHL Archive'
Subject: UCPH external fire hydrants
Attachments: 141126_fire_mtg_markup.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Andrew
Thanks for arranging our meeting with ACT F&R today, with Paul Flynn, Steve Newham, and Rob.
As discussed, they expect trucks from Ainslie and Aranda (when constructed) to arrive via Ginninderra Drive, and from Charnwood and Gungahlin backups to turn into Aikman and then into the site
We confirmed the swept path around the bend of the new road is acceptable for the largest rigid bus, which is good for the fire truck. I haven't confirmed the corner into the entry driveway since 30%, but it has improved since then rather than got worse.
The booster pump location across the entry road from the main entry was considered a good location, but they would prefer we set it back from the kerb by approximately 1.5m to allow movement space between the pumps and the truck when parked. They liked the arrangement facing the building.

We confirmed we are currently approaching the design as Deemed to Satisfy, but there is no guarantee this will not change prior to BA, subject to the construction and final documentation consultant design.

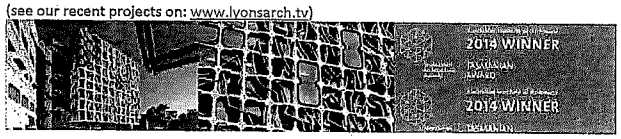
Given that DTS hydrants inside the stair risers are so far within the building, external 'attack' hydrants were recommended as protection. The main fire main should probably continue around the whole site, and 1, 2 or three attack hydrants included.
External hydrants are to be a minimum of 10m from the building, and within 50m of truck parking. The location between Mental Health and the IPU building was considered a good location for a hydrant, with the fire truck parked on the loading dock hardstand. A clear path up the bank from the hardstand would assist in finding the hydrant if needed. The other two possible external hydrant locations would also be preferred. Refer to attached markup of the fire main plan.
Can you please update your drawings for 100% PSP submission.

ACT F&R commented that given the building will be sprinklered, it makes their work a lot easier, so were supportive of our concept. They have a file for the project ready for entity referral when the DA is lodged.

Thanks and regards

Kirsten Westaway
lyons
Architect
mobile 0423 559 588
e: kirsten.westaway@lyonsarch.com.au

(see our recent projects on: www.lyonsarch.tv)



4.7 ACTION Buses Approval

From: Collins, Jen [Jen.Collins@act.gov.au]
Sent: Thursday, 19 February 2015 5:05 PM
To: Stefano Scalzo
Subject: FW: Action endorsement of UCPH plans

Hi Stefano,
I had wondered the same thing as Ian (below). What detail do you have available for the other side of the road?
Cheers,
Jen.

From: McGlinn, Ian
Sent: Thursday, 19 February 2015 4:26 PM
To: Collins, Jen
Cc: True, Phil; Pillig, Carl
Subject: RE: Action endorsement of UCPH plans

Afternoon Jen,
You have our in principal endorsement of your proposal at this time.

Can you advise what if any cover has been designed for the bus stop on other side of the road from hospital Belconnen bound.

Regards

Ian McGlinn | Senior Manager Network Planning and Development
Phone 02 6207 8567 | Fax 02 6207 8080 | Mobile 0418 609544
Roads and Public Transport | Territory and Municipal Services Directorate | ACT Government
Level 2, Macarthur House, 12 Wattle Street, Lyneham ACT 2606 | GPO Box 158 Canberra ACT 2601

From: Collins, Jen
Sent: Thursday, 19 February 2015 2:05 PM
To: McGlinn, Ian
Cc: True, Phil; Pillig, Carl
Subject: Action endorsement of UCPH plans

Dear Ian,

Thank you for your advice regarding University of Canberra Public Hospital (UCPH) to date. Further to our previous correspondence (attached), I would like to formally request Action's in-principal endorsement of the location of bus stop at University of Canberra Public Hospital (UCPH).

I understand that Action is unable to service the proposed bus stop unless the UCPH access road is connected with Pantowora Street. University of Canberra's *2012 Campus Master Plan* shows a proposed road from Aikman Drive through to Pantowora Street (refer to page 19), although it does not indicate when this connection is likely to be made. Follow this link to UC master plan http://www.canberra.edu.au/university/about/master-plans/docs/master-plan-2012.pdf .

UCPH is due to open in early 2018, and as discussed, will be serviced by routes along Aikman Drive until such a time as the road connection from Aikman to Pantowora is made.

Please review the plans attached and provide Action endorsement prior to our Pre Application meeting with ACTPLA on 22 February 2015.

Kind regards,
Jen.

Jen Collins | Health Infrastructure, Procurement and Capital Works
Phone 02 6174 7797 | Fax 02 6121 0433
Chief Minister, Treasury and Economic Development Directorate | ACT Government
Level 1 Building 23, The Canberra Hospital, Yamba Drive, Garran, ACT 2605| PO Box 818, Dickson, ACT 2602 |
www.act.gov.au

Appendices :

Appendix A - Architectural Drawings
Appendix B - Landscape Drawings
Appendix C - Mechanical Drawings
Appendix D - Civil Drawings
Appendix E - Hydraulics Drawings
Appendix F - Electrical & Lighting Drawings
Appendix G - Traffic Assessment
Appendix H - Finishes Schedule
Appendix I - UC Crown Lease
Appendix J - Tree Survey
(issued online only)

Appendix K - Environmental Assessment Report
(issued online only)

Appendix L - Hydraulic Report
Appendix M - Cost Plan
Appendix N - Survey Certification
Appendix O - Letter of Authorisation
Appendix P - Community Consultation Form