UTS City Campus, Broadway Precinct – Modification to Approved Concept Plan

Traffic and Parking Assessment Report

Prepared for: UTS Sydney

July 2015

Report No: PT140281r01_Final_3

TABLE OF CONTENTS

List of Figures

List of Tables

1.0 Introduction

This report has been prepared on behalf of the University of Technology Sydney, to accompany a S75W modification application to the Concept Plan approval for the UTS City Campus, Broadway Precinct.

This study has reviewed previous assessments of proposals undertaken to date, existing traffic conditions and public transport operations along with traffic generation, parking provision and access arrangements of the proposal.

The remainder of this report is set out below:

- Chapter 2 provides a summary of background reports undertaken for UTS
- Chapter 3 provides an overview of existing traffic and transport conditions
- Chapter 4 describes the development proposal
- Chapter 5 provides a strategic review of the proposal within the existing transport context
- Chapter 6 reviews the potential traffic and transport impacts of the proposed development
- Chapter 7 presents a parking and access assessment, and
- Chapter 8 presents the conclusions of the study.

2.0 Background Report / Development Review

The following presents a summary of traffic studies undertaken to date for the UTS City Campus, Broadway Precinct pertaining to the original concept plan application. The purpose of this summary is to not only provide an indication of the modelling work undertaken in and around the precinct, but to provide the basis of the assumptions of future traffic conditions.

2.1 UTS Broadway Traffic Report – Halcrow 2009

This report prepared in support of the original concept plan application for redevelopment of the UTS City Campus, Broadway Precinct investigated existing traffic / public transport conditions and prepared traffic forecasts / impact assessments of future conditions following redevelopment of the Broadway Precinct of the City Campus.

The traffic impact assessment included intersection counts of surrounding locations and a modelling assessment of existing versus future traffic conditions following full development of the Masterplan. The report found that all surveyed intersections surrounding the educational precinct (including the adjacent TAFE) would continue to operate at a satisfactory level of service in the future.

2.2 UTS Broadway (TMAP) Report – Halcrow 2009

As per the Director General requirements at the time, to complement the traffic report a Transport Management and Accessibility Plan (TMAP) was undertaken to support the Concept Plan application.

As per the requirements of the RMS Guidelines for TMAPs, the report explored the existing conditions of non-private vehicle modes and opportunities to improve infrastructure and frequency of services.

An extensive assessment of public transport operations was completed in consultation with representatives of Transport for NSW. The report found that there was spare capacity in the public transport systems at the time to accommodate the potential future demands of the UTS expansion.

The previous TMAP provided a detailed treatment of the transport effects of the (at that time) proposed Concept Plan. That proposal became the Approved Concept Plan. The currently proposed modifications are relatively modest in comparison with the quantum of activity contemplated by the Concept Plan and are of a similar nature and character. The proposed modification does not include additional car parking provision.

As such, this current transport assessment provides an update of the local and strategic transport situation, as well as analysis of more recent information (i.e., Census journey to work information) since the Approved Concept Plan. This is to determine if transport conditions in the locality have altered radically for the worse.

2.3 Delivery of 2008 Masterplan Proposals

The UTS City Campus Broadway Precinct Concept Plan (BPCP) was approved by the then Minister for Planning on 23 December 2009 (MP08_0116). The Concept Plan included:

- New Broadway Building and Thomas Street Building with a combined gross floor area (GFA) of 44,650m^2;
- Expansion of Buildings 1 and 2 with a combined additional GFA of 10,800m^2;
- Expansion of Building 6 for the provisions of student housing with an additional 25,250m^2 GFA;
- Modifications to Buildings 3, 4 and 10;
- Modifications to Alumni Green with a new Multi-Purpose Sports Hall and book vault beneath;
- Public domain improvements to Broadway and Thomas, Harris, Wattle and Jones streets.

The Minister also granted Project Approval for the following works:

- Construction of a new underground Multi-Purpose Sports Hall; and
- Demolition of Buildings 11, 12 and 13.

Since the Concept Plan was approved, four (4) subsequent modifications have been approved.

Modification No 1

Modification No 1 (MP 08_0116 Mod 1), approved in March 2011, sought to include bulk excavation works for the Broadway Building as part of the Project Approval works granted under the Concept Plan approval (enabling these works to be undertaken ahead of the Project Application for the building).

Modification No 2

Modification No 2 (MP 08_0116 Mod 2), approved in March 2011, related to an administration amendment to Concept Plan condition B2.

Modification No 3

Modification No 3 (MP 08_0116 Mod 3), approved in July 2011, sought to include the excavation, construction and operation of the Library Retrieval System (LRS) and Storage Building together with bulk excavation works for the Thomas Street Building as part of the Project Approval works granted under the Concept Plan approval (enabling these works to be undertaken without any further environmental assessment).

The modification also included a revised breakdown of GFA across the UTS Broadway site, with the Environmental Assessment submitted in support of the S75W identifying an increased GFA for the Thomas Street building of 12,150m^2 (corresponding with a decreased GFA for the Broadway Building of 34,650m^2).

Modification No 4

Modification No 4 (MP 08_0116 Mod 4), approved in March 2012, related to an administration amendment to Concept Plan condition E3 (approved truck route plan for excavation of Thomas Street building and the library retrieval system).

Modification No 5

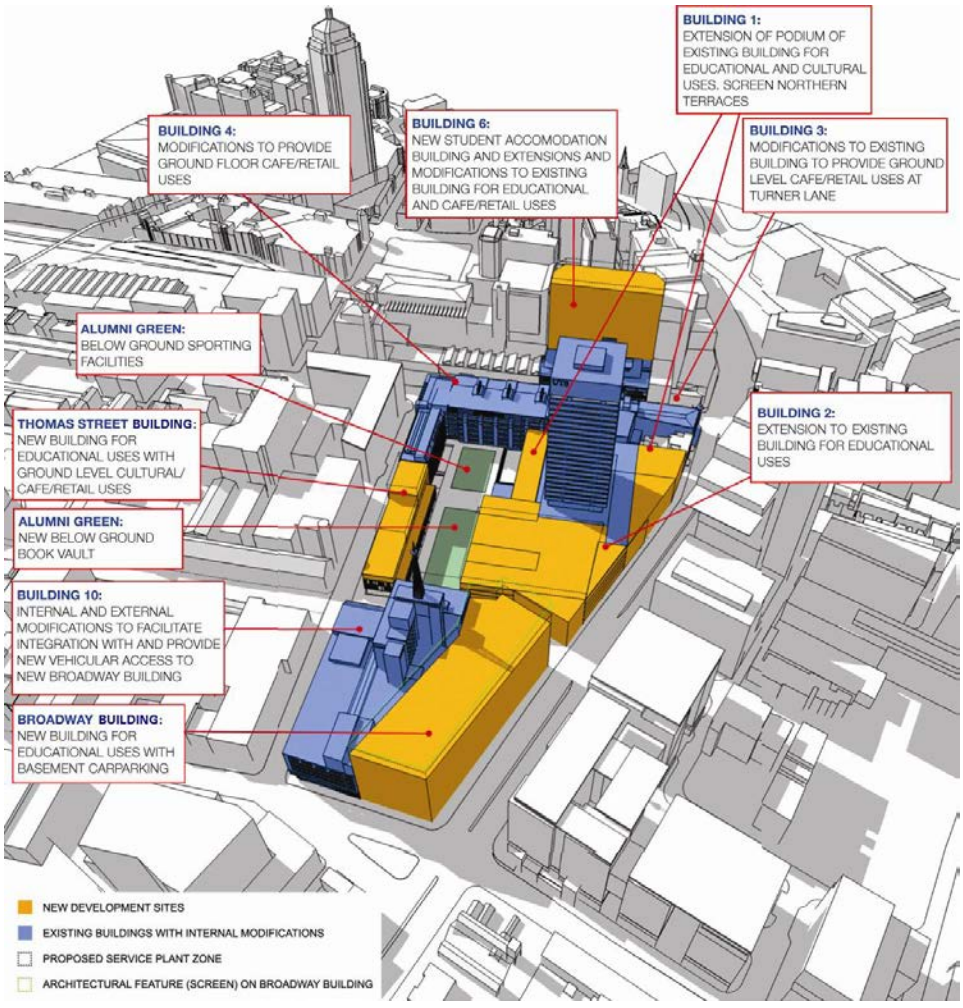
This report has been prepared in support of proposed Modification No 5 (MP 08_0116 Mod 5) to the Concept Plan.

Since the approval of the original Masterplan and associated modifications, the following projects have been both identified and delivered within the UTS City Campus Broadway Precinct:

- Faculty of Science and Graduate School of Health Building;;
- Alumni Green;
- Automated Library Retrieval System;
- Great Hall and Balcony Room Upgrade;
- Multi-Purpose Sports Hall; and
- Faculty of Engineering and IT Building.

This above development delivery is shown in **Figure 1** below;

Figure 1 – Completed and Proposed Projects Post Concept Plan Approval



Building 2 noted above is subject to this proposed Concept Plan modification.

2.4 Sydney City Centre Capacity Improvement Program

To support the delivery of the Sydney City East Light Rail Project the RMS is embarking on a capacity improvement program to deliver additional road capacity throughout the CBD. Plans of the proposed locations for improvement are provided in **Appendix B** of this report.

Of interest is the proposal to emphasise Wattle Street at its intersection with Broadway as a bypass route around the CBD core. These changes include a reduction in the number of northbound lanes in Broadway across the frontage of UTS from four to three.

3.0 Existing Traffic & Transport Conditions

3.1 Traffic Conditions

Given the relatively small increase in GFA proposed having regard to the overall size of the UTS precinct (as described in Section 4 of this report) a formal modelling assessment of existing traffic conditions is not considered warranted. The original Masterplan application which was approved did include extensive modelling assessments of existing and future traffic conditions.

Further to the modelling of the UTS development, a formal modelling assessment of the large Central Park development opposite was undertaken which also included modelling of intersections along Broadway with full development of its site and the BPCP.

Overall a formal modelling assessment of the proposed modification to the BPCP is not considered necessary to inform the approval of the modified application.

3.2 Existing Public Transport Conditions

The public transport operations within the Sydney CBD and surrounds have and will continue to markedly change from that which was assumed in the original traffic report. Thus public transport operations have formed the focus of this assessment of future conditions with the modified Masterplan.

3.2.1 Transport Situation Update

Since the preparation of the transport study for the approved BPCP in 2009, a number of transport-related matters have changed in the area. In addition, information from the more recent 2011 Census has been released, and this provides some indications of how the UTS precinct has changed. This section summarises these changes and new information.

Changes to the transport network in the UTS precinct have included the rationalisation of bus stops, further development of the bus network and amendments to the route of the outbound rt 501 bus service between Ryde/West Ryde and the City. They have also included on-going substantial improvements to the rail network's capacity and reliability.

Bus Stop Rationalisation

Several near-by bus stops have altered since 2008, including:

- The inbound bus stop on Broadway near Wattle Street was closed, with the bus stop outside UTS's main entrance becoming the main stop in this area;
- The outbound bus stop on Broadway – directly opposite UTS's main entrance – was closed, with access to outbound services from Railway Square (to the east) and Broadway at Buckland Street (to the west).

As with bus stop rationalisations in other parts of Sydney's bus network, reducing the number of bus stops along a route has two counter-veiling effects, if the bus stop capacity is sufficient: it tends to speed-up and improve service reliability, which benefits bus users; and, it tends to increase access costs for bus patrons who had used the closed stops.

Further Development of the Bus Network

At the time of the previous study, the initial Metrobus service[1], the M10 between Leichhardt and Kingsford which runs past the UTS site, had commenced operations. Since that time, a number of other Metrobus routes have commenced operation, including the M30 between Mosman and Sydenham, which also directly serves the UTS site.

In addition to these changes, bus frequencies at UTS were summarised and compared with frequencies reported in the 2009 study. These comparisons are shown in the following tables.

Table 1 - Combined bus service frequency comparison: Weekday 8am to 9am

Bus Stops	Inbound	Outbound	Total
2008			
Broadway	116	71	187
Broadway at Howard St*	11	n.a.	11
Cleveland Street	2	2	4
Total	**129**	**73**	**202**
2015			
Broadway	122	75	197
Broadway before Mountain St	11	n.a.	11
Cleveland Street	2	3	5
Route 501	7	4	11
Total	**142**	**82**	**224**

Source: 2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 2009; 2015 information from www.transportnsw.info (January 2015)

Table 2 - Combined bus service frequency comparison: Weekday 11am to Noon

Bus Stops	Inbound	Outbound	Total
2008			
Broadway	59	58	117
Cleveland Street	2	2	4
Total	**61**	**60**	**121**
2015			
Broadway	59	57	116
Cleveland St	2	2	4
Rt 501	3	3	6
Total	**64**	**62**	**126**

Source: 2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 2009; 2015 information from www.transportnsw.info (January 2015)

[1] The M10 from Leichhardt to Kingsford – commenced in October 2008 (source: http://en.wikipedia.org/wiki/Metrobus_%28Sydney%29)

Table 3 - Combined bus service frequency comparison: Weekday 5pm to 6pm

Bus Stops	Inbound	Outbound	Total
2008			
Broadway	64	99	163
Cleveland Street	3	3	6
Total	**67**	**102**	**169**
2015			
Broadway	65	112	177
Cleveland St	3	2	5
Rt 501	3	7	10
Total	**71**	**121**	**192**

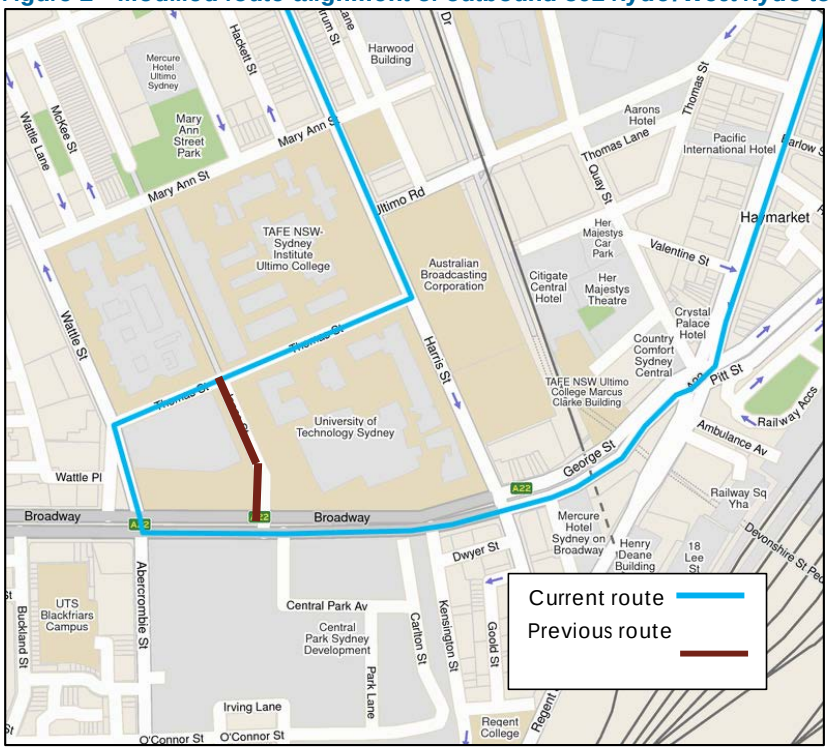
Source: 2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 2009; 2015 information from www.transportnsw.info (January 2015)

The 2015 frequencies are taken during the holiday period from the transport information website and may understate service frequencies during school term and university semester periods. What the above comparisons indicate is that:

- Bus service frequencies in the area immediately around UTS are very high by any standard
- Bus service frequencies during the weekday peaks have increased
- Bus service frequencies during the off-peak have remained similar to 2008, and this may reflect lower capacity utilisation during the off-peak in 2008, meaning patronage growth could have been accommodated more readily within existing capacity than during the peak periods.

Due to the closure of Jones Street at Broadway, outbound services of the rt501, which had turned right from Broadway to Jones Street, now turn at Wattle Street and then Thomas Street, to re-join their previous route

Figure 2 - Modified route alignment of outbound 501 Ryde/West Ryde to City



Source: Map from Transportnsw.info

This change to the route would have had limited impact on patrons.

Discussion with TfNSW indicated that the bus services operating along the Broadway corridor still have their maximum load points to the west of the site, at Sydney University's footbridges on Parramatta Road and on City Road. This indicates that services past the site would have adequate capacity to support proposed additional floorspace.

Rail Network Development

As noted in the previous transport assessments, the site is situated conveniently for access to the Sydney rail network via Central Station. In the intervening period, patronage on Sydney's rail network has increased, and this has been supported by a large number of projects and programmes which have sought to improve safety, reliability and capacity of the rail network. These have included the purchase of additional rolling stock; substantive upgrades to a number of stations and interchanges; the opening of the Epping to Chatswood Rail Line; as well as ongoing sectorisation of the rail network. A number of these projects are ongoing and the full benefit of this substantial capital expenditure programme will not be felt for a number of years hence.

Journey to work information

The Census provides detailed information about commuter travel at a fine level of spatial resolution. The following tables summarise and compare journey to work (JTW) information from the 2011 census with the previous information from the 2006 Census which was reported in the 2009 study.

Table 4 - JTW Information for Commuters originating from UTS zone – 2011 vs 2006

	Train	Bus	Vehicle driver	Vehicle passenger	Other mode	Walked only	Worked at Home or Did not go to Work	Mode not stated	Total
JTW Trips (2011)	89	63	103	9	16	194	50	12	536
Mode share of travel (2011)	19%	13%	22%	2%	3%	41%	11%		
Comparative classification	**Train**	**Bus**	**Car Driver**	**Car Passenger**	**Other**	**Not Travelled on Census**	**Total**		
JTW Trips (2011)	89	63	103	9	210	50	524		
JTW Trips (2006)	36	42	39	3	125	27	272		
Mode share of travel (2011)	19%	13%	22%	2%	44%	na			
Mode share of travel (2006)	15%	17%	16%	1%	51%	na			

Source: 2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 2009; 2011 from JTW information www.bts.nsw.gov.au

The above table indicates that commuter travel by residents of the UTS travel zone remains predominantly by non-car modes (69%), with similar shares to train and bus in both Censuses. Of note is that absolute numbers of residents commuting from this zone remains small.

The top three destinations for commuters from this zone on Census Day 2011 were:

- Sydney – 282 (59%)
- North Sydney – 25 (5%)
- Botany Bay – 20 (4%)

The following table summarises and compares commuter mode shares for people who work in the travel zone in which UTS is situated.

Table 5 - JTW Information for Commuters Destinating at UTS – 2011 vs 2006

	Train	Bus	Ferry/ Tram	Vehicle driver	Vehicle passenger	Other mode	Walked only	Worked at Home or Did not go to Work	Mode not stated	Total
JTW Trips (2011)	1680	723	15	910	138	146	331	439	52	4434
Mode share of travel (2011)	43%	18%	0%	23%	3%	4%	8%			
Comparative classification	**Train**	**Bus**	**Car Driver**	**Car Passenger**	**Other**	**Not Travelled on Census**	**Total**			
JTW Trips (2011)	1680	723	910	138	492	439	4382			
JTW Trips (2006)	1300	591	977	123	410	418	3819			
Mode share of travel (2011)	43%	18%	23%	3%	12%	na				
Mode share of travel (2006)	38%	17%	29%	4%	12%	na				

Source: 2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 2009; 2011 from JTW information www.bts.nsw.gov.au

For commuter travel to the zone in which UTS is situated the census information indicates an increase in commute travel and that most of this was accommodated by Train, Bus and Other modes. Not only did the share of vehicle travel decline from 32% to 27%, but the absolute number

of car-based commutes reduced by about 5%, between 2006 to 2011. To provide a broader context in which to consider this level of vehicle mode share, the mode share of travel to all jobs in the broader Sydney metropolitan area by car was around 68% in the 2011 Census.

The top three local government areas from which these commuters originated were:

- Sydney – 526 (13%)
- Marrickville – 304 (8%)
- Canterbury – 185 (5%)

Conclusions regarding the existing transport situation

The above analysis identifies the following key points:

- UTS is situated in an area with very high levels of public transport accessibility.
- Changes to the public transport network at the site since the 2009 investigation have generally been very positive for transit users, with improved bus frequencies and additional routes, as well as substantial improvements to the rail network.
- Journey to work information for the zone in which UTS is situated indicates that these transport network improvements have increased the importance of transit as a mode of access.

3.3 Consultation with Stakeholders

As part of the preparation of this investigation we met informally with TfNSW. The main purposes of the meeting were to identify:

- Whether bus capacity and maximum load points for the Broadway corridor had changed adversely since the previous transport assessment;
- That, in a general sense, TfNSW policy's accommodative stance on transit and the desire to support additional CBD activity had not materially changed.

The meeting indicated that buses past the site currently have spare capacity (the services' maximum load points remain at Sydney University's footbridges) and that mechanisms remain in place to provide additional capacity, should additional demand meet particular criteria.

The discussions also indicated that, in line with the major policy documents (discussed below), there remains a desire to support the concentration of activity in the CBD and to improve transit accessibility. The importance of bus stop access and pedestrian access to the site was emphasised in the discussions.

4.0 Proposed Development

Since the original Masterplan was developed in 2008, the tertiary sector has changed and student population demands of the UTS City Campus are now exceeding those which were originally anticipated.

The Approved Concept Plan provided facilities for a student load of 15,000 EFTSL[2] on the Broadway Precinct of the City Campus by 2015. However, in 2014 the student load was 17,100 EFTSL with the current 2020 projections indicating a potential demand of 19,500 EFTSL, up 4,500 EFTSL from the 15,000 EFTSL.

The modifications sought for Building 2 in this proposal will significantly contribute to providing the additional floor area and facilities required to meet these increases in the student load.

The key elements of the proposed modification to the approved Concept Plan are detailed below:

- Increase in the approved additional GFA for Building 2 to 38,261m^2, comprising an increase of 31,511m^2;
- Expansion and amendment to the approved building envelope for Building 2, resulting in a maximum building height of 64.5m (RL 79.5), comprising an increase of 34.4m;
- Consequential amendments to the Urban Design Quality Controls/Principles for Building 2.

Plans of the proposed ground floor and basement levels can be found in **Appendix A** of this report.

From a transport perspective the key element of the proposed modifications are:

- Additional floor space of Building 2: extra 31,511m^2 GFA over and above approved increase of 6,750m^2 GFA

There is no proposal to expand or change car parking arrangements on the site.

With the additional floorspace, the UTS Campus would be able to support additional on-site activity. With no additional proposed car parking to be provided it is unlikely that, even with the additional activity associated with the proposed additional floorspace, the site would generate additional traffic volumes. The site may well generate additional trips, and these would be expected to be undertaken by non-car modes.

[2] EFTSL = Equivalent Full Time Student Load

As noted in the 2009 transport assessment, and as indicated by our review of current transport conditions and recent journey to work information, the UTS Campus is situated in an area with excellent levels of public transport accessibility, providing nearly-comprehensive coverage of the metropolitan area, via the rail and bus networks. The increase in non-car mode shares for commuters to this zone, evidenced by comparison of 2011 Census information with 2006 Census information, supports and reinforces this characterisation of the site.

The initial concept plan assessment considered an increase in floorpsace of some 84,750sqm[3]. The current modification proposes an additional 31,511m^2, an increase of approximately 36.5%.

4.1 Parking / Access Arrangements

In keeping with the approaches of previous applications, the proposal does not include any additional on-site parking to support the additional floorspace. The focus of improvements would be on improving public transport access to / from the precinct.

[3] *2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 200*

5.0 Transport Strategic Context of UTS Sydney

5.1 General

Transport policy and forward plans in NSW and, in particular, in Sydney, have evolved since the previous transport study in 2009. Whilst the names and details of the State's strategic transport plans have changed, the overall thrust of policy has continued in a similar manner, with current objectives broadly compatible with previous. Importantly for the UTS Precinct, and the CBD more generally, additional rail network capacity and improved rail coverage of the greater Metropolitan area remain key goals.

Improving the surface transit network, with bus and / or light rail is also an important goal of policy, with several light rail initiatives completed and the Central and South East Light Rail (CSELR) entering the construction phase. In addition, as noted previously, the Metrobus network has been expanded and service levels past the UTS site have increased. The Opal integrated ticketing system has been implemented, which should further improve the utility of public transport to patrons, as the system's quirks are resolved and patrons become more adjusted to the system.

The Sydney City Centre Access Strategy captures the modal plans and directions that support the CBD, providing a framework in which to consider future development.

5.2 Long Term Transport Masterplan

The Long Term Transport Masterplan (TfNSW, Dec 2012) sets out a framework in which the future transport network for Sydney will be developed. While it sets directions for system development, it identifies a set of subsidiary documents that flesh out how the vision of the plan will be implemented. Key actions identified in the plan which are directly relevant to UTS and will provide benefits to the system, include:

- A fully integrated system, of which the Opal integrated ticketing system is an important component
- A modern rail system – with actions to achieve an overall capacity increase of 60%
- A modern light rail system – expanding the public transport network to address CBD congestion and provide reliable frequencies
- A modern bus system – that complements the heavy and light rail networks
- Unclogging the Sydney CBD
- Boost walking and cycling and support its integration with public transport[4]

These will all provide direct benefits to the CBD and to the precinct in which UTS is situated. The benefits will be across modes, and will include additional capacity, better travel times and more convenient network design with better integration.

[4] Pg 12 and 13, Long Term Transport Masterplan, TfNSW 2012

5.3 Sydney City Centre Access Strategy

The Sydney City Centre Access Strategy (TfNSW, December 2013) sets out a series of actions to tackle the long-running issue of congestion in Sydney's CBD and how to provide additional capacity to support future growth. The actions are broad-based and comprehensive – ranging from governance arrangements, to modal-specific initiatives, to road network classifications that reflect the role of the movement networks within the various precincts of the City. The size and scale of the challenge facing the strategy is substantial and should not be under-estimated.

From the perspective of UTS and the proposed modified Concept Plan, the key conclusions to be drawn are:

- TfNSW has taken a detailed look at the challenges and have recognised that any improvements will require a comprehensive approach – this is reflected in their approach to governance, as well as the detail to which the strategy extends
- Improvements to network capacity and service levels will be achieved, even if it takes longer than anticipated, and will require tweaks to the proposals as the situation evolves. An example of this responsiveness is a recent Modification Plan to the Central Sydney East Light Rail (CSELR) project, in which rolling stock will now be larger than the approved project plan.

It is expected that the UTS site (along with the CBD more generally, and the NSW economy) will benefit from improved accessibility by public transport.

5.4 Population Growth

Sydney's population is expected to continue its relatively strong growth. The following table compares population growth projections detailed in the previous study with more recent projections.

Table 6 - *Comparison of projection series for Sydney LGA and Sydney metropolitan area*

	Population - 2001	Population - 2006	Population - 2011	Population - 2021	Population - 2031	Difference
2005 Projections						***2001 to 2031***
Sydney LGA[5]	162,580	na	na	na	236,610	+ 74,030 (46%)
Sydney (SD)	4,310,099	na	na	na	4,922,646	+ 612,547 (14%)
2008 Projections						***2011 to 2031***
Sydney LGA	na	165,600	192,900	219,750	248,800	+55,900
Sydney SD	na	4,282,000	4,550,300	5,104,100	5,688,623	+ 1,138,300 (19%)
2012 Projections						***2011 to 2031***
Sydney LGA	na	165,600	193,800	227,150	259,500	+65,700
Sydney SD	na	4,282,200	4,672,400	5,335,500	6,017,100	+1,344,700 (29%)
2014 Projections						***2011 to 2031***
Sydney LGA	na	na	181,100	230,400	270,800	+89,700
Sydney SD	na	na	4,602,000	5,410,400	6,235,600	+1,633,600 (35%)

Note: Sydney LGA is Sydney local government area and Sydney SD is Sydney statistical division.
Source: 2005 information from 2008 information from Transport Management and Accessibility Plan (TMAP) Report, UTS Sydney, Halcrow, 2009; 2008, 2012 and 2014 scenario information from www.bts.nsw.gov.au.

The above comparison of population projections indicate that expectations of growth trends for metropolitan Sydney and Sydney LGA have increased over the past decade. The projections for Sydney metropolitan area (Sydney SD) in 2031, in the most recent scenario, are now some 25% higher than the 2005 projections and about 10% higher than the 2008 projections (the current scenario at the time the 2009 TMAP was prepared). Comparable increases for Sydney LGA are 14% and 9% respectively.

5.5 Small Area Land Use Projects – Population & Employment

Land use projections for small areas are prepared by the Bureau of Transport Statistics periodically. Recently an updated set of projections was released (2014 scenario), ostensibly replacing the previous scenario (2012 scenario). We summarise both series to provide broader context around the thinking for the area, and in case the 2014 scenario is withdrawn. These scenarios are coded to small areas which are termed 'travel zones'.[6]

[5] Sydney LGA is aggregation of SLAs 7201, 7203 and 7205

[6] The 2012 land use scenario was coded to the 2006 travel zone system, whereas the 2014 scenario is coded to a new travel zone system (which aligns with the Census geography) – the 2011 travel zone system.

Table 7 - Population Projections – UTS locale

	2006	2011	2016	2021	2026	2031	2036	2041
2012 scenario								
UTS								
zone 154	0	0	200	396	452	509	569	631
zone 232	947	969	978	994	1,008	1,022	1,053	1,085
Total	**947**	**969**	**1,179**	**1,390**	**1,460**	**1,532**	**1,622**	**1,716**
2014 scenario								
UTS								
zone 136		0	147	312	563	1,413	2,224	3,062
zone 159		1,452	1,472	1,489	1,519	1,602	1,682	1,765
Total		**1,452**	**1,619**	**1,801**	**2,082**	**3,014**	**3,906**	**4,827**

Source: www.bts.nsw.gov.au

Population projections in the most recent scenario for the area immediately around UTS's site have increased since the previous projections. However, the level of projected population remains modest.

Table 8 - Employment Projections – UTS locale

	2006	2011	2016	2021	2026	2031	2036	2041
2012 scenario								
UTS								
zone 154	81	83	89	96	103	109	116	122
zone 232	4,529	4,414	4,673	5,184	5,632	5,994	6,358	6,740
Total	**4,610**	**4,497**	**4,762**	**5,280**	**5,735**	**6,103**	**6,473**	**6,861**
2014 scenario								
UTS								
zone 136		356	343	367	393	420	446	474
zone 159		5,008	4,893	5,208	5,562	5,920	6,279	6,658
Total		**5,364**	**5,236**	**5,575**	**5,955**	**6,340**	**6,725**	**7,132**

Source: www.bts.nsw.gov.au

Projections of employment for the area in which UTS is situated have increased marginally from the 2012 to the 2014 land use series. They indicate a relatively steady increase in job numbers over the next 20 to 30 years.

6.0 Traffic and Transport Impact Assessment

6.1 Potential Traffic Impacts

As the development does not propose any additional on – site parking it is not expected that the increase in floorspace would have any significant traffic generation. Further, as the surrounding road network for some distance is extremely well protected with period parking / resident parking restrictions, the use of private vehicles would be significantly discouraged.

6.2 Public Transport Capacity Assessment

The additional floorspace of 31,511m^2 in the proposed modified concept plan represents an increase of some 36.5% when compared with the Approved Concept Plan. This floorspace is proposed to be used for educational activities, possibly as laboratory space, which is generally a lower intensity use than lecture theatres or tutorial rooms. A key feature of the proposed Modified Concept Plan is that it would not provide additional car parking capacity.

The key transport implications of the proposal would be:

- Additional activity at the site, with higher trip generation than the Approved Concept Plan. The additional trip generation would be somewhere between 10% and 20% of that considered under the Approved Concept Plan.
- Given the excellent public transport accessibility of the site; the adequate bus capacity[7]; and additional transit capacity that is expected to come on stream as major projects come to fruition, it is expected that a large share of this additional trip generation would be accommodated within the surrounding transit system.
- In addition, with the increasing supply of residential dwellings within the City South precinct, including at Central Park, opposite UTS on the southern side of Broadway, remaining travel demand is likely to be supported by walking and cycling from/to the local area.
- With no increase in car parking capacity as part of the proposed Modified Concept Plan, there is not expected to be an appreciable increase in traffic generation of the site. Indeed, the journey to work statistics for the zone in which UTS sits indicated that not only transit increased its mode share from 55% to 61% between the 2006 and 2011 Census, but car driver numbers fell marginally. These sort of effects of relative modal competition would be expected to be faced by students in a similar manner to staff (workers), but most students are likely to be more sensitive to these changes, and hence, switch to transit more readily than staff.

From the above, the key factors for consideration are:

- Conveniently sited bus stops, and
- Adequate pedestrian connections to bus stops and particularly to Central Station.

A review of the adequacy of transport information should be considered for existing staff and students about their transport choices at the site and accommodating bicycle parking on site.

[7] As noted previously, the bus services past the site have their maximum load points to the west of UTS, at Sydney University's footbridges – indicating available capacity within current buses; in addition, under Metropolitan bus service contracts, as demand reaches specified thresholds there is a mechanism for additional capacity to be provided as part of the contract.

7.0 Parking and Access Assessment

7.1 Parking Provision Assessment

As stated above, in keeping with previous development applications within the precinct, the proposal does not include any additional parking with the increase in floorspace. This approach is considered appropriate given the extensive access available for students to a range of local and regional public transport services.

8.0 Conclusions

This report has been prepared on behalf of University of Technology, Sydney to assess the potential traffic impacts and transport needs of the proposed modification to the approved Concept Masterplan.

The findings of this investigation are presented below:

1. The proposed increase in floorspace is not expected to generate any additional traffic.
2. The potential traffic impacts of the Concept Plan as a whole have been fully assessed in previous investigations by the Roads and Maritime Services and were found to be acceptable.
3. The approach to not provide any additional on-site parking is considered appropriate given the location of the development.
4. The existing public transport network operations servicing the site is capable of accommodating any increase in demands which would occur with an increase in student population under this proposed amendment to the Concept Plan.

From the contemporary strategic transport planning context, it is reasonable to conclude that the UTS Precinct will continue to be well served by public transport, while the capacity of the trunk transit network will increase over time, and that additional floorspace contained in this proposed Modified Concept Plan would be well supported by these future directions.

Overall the traffic impacts of the modified proposal are considered satisfactory.

Appendix A – Plans of Proposed Development

0 5 10 20m

1:500 @ A3

31/07/15

fjmt francis-jones morehen thorp

UTS University of Technology, Sydney

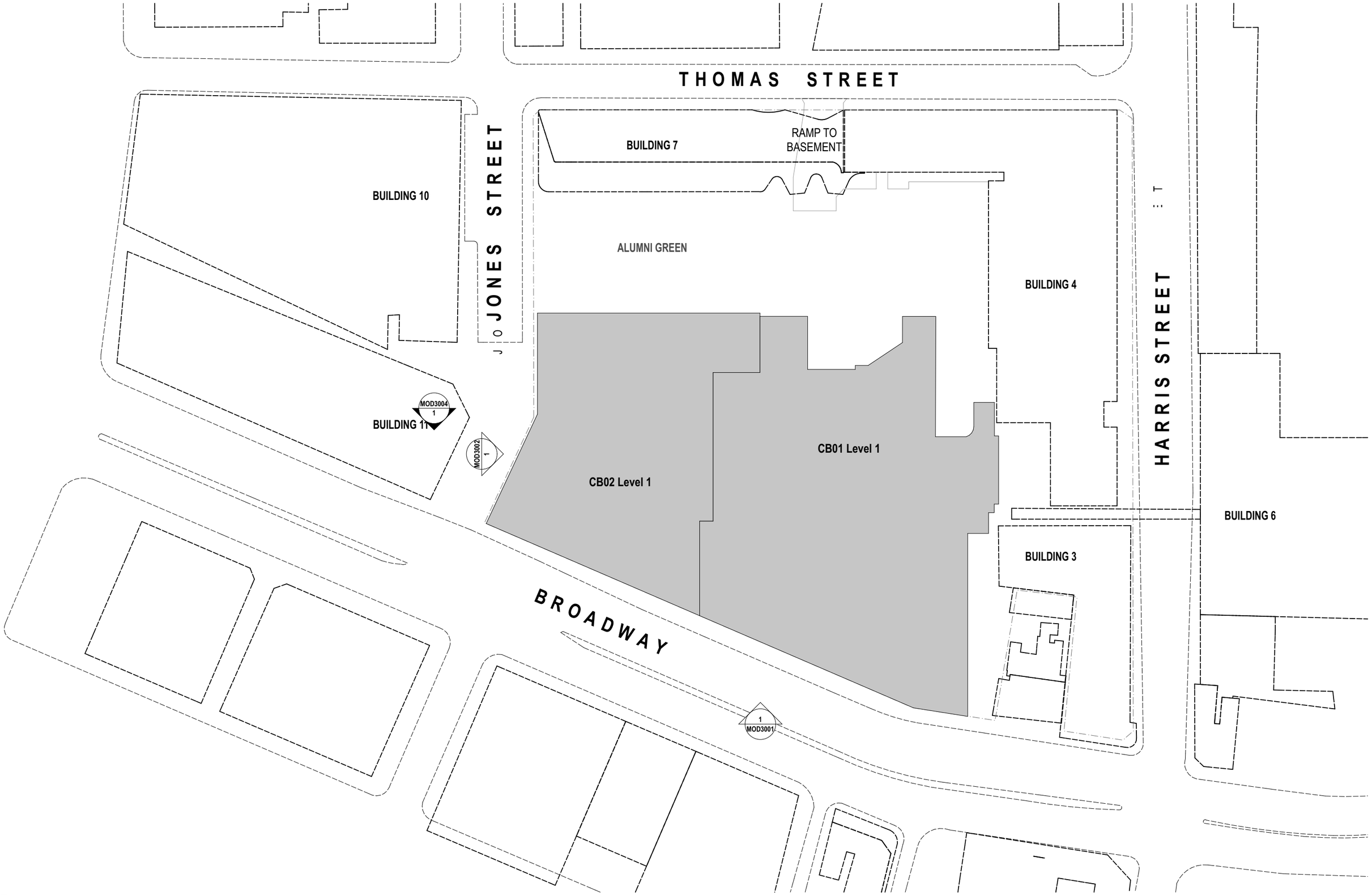
LACOSTE+STEVENSON I DARYL JACKSON ROBIN DYKE PTY LTD architects in association

Site plan

University of Technology, Sydney - UTS Central

For Information

MOD1001



0 10 20 50m

1:1000 @ A3

31/07/15

fjmt francis-jones morehen thorp

UTS University of Technology, Sydney

LACOSTE+STEVENSON I DARYL JACKSON ROBIN DYKE PTY LTD architects in association

Level 1

University of Technology, Sydney - UTS Central

For Information

MOD2001

THOMAS STREET

JONES STREET

HARRIS STREET

BROADWAY

BUILDING 10

BUILDING 11

BUILDING 7

RAMP TO BASEMENT

ALUMNI GREEN

BUILDING 4

CB02 Level 2

CB01 Level 2

BUILDING 3

BUILDING 6

MOD3004 1

MOD3002 1

1 MOD3001

0 10 20 50m

1:1000 @ A3

31/07/15

fjmt francis-jones morehen thorp

UTS University of Technology, Sydney

LACOSTE+STEVENSON I DARYL JACKSON ROBIN DYKE PTY LTD architects in association

Level 2

University of Technology, Sydney - UTS Central

For Information

MOD2002

THOMAS STREET

JONES STREET

HARRIS STREET

BROADWAY

BUILDING 10

BUILDING 11

BUILDING 7

BUILDING 4

BUILDING 6

BUILDING 3

ALUMNI GREEN

CB01 Exten. L4

CB01 Level 4B

CB02 Level 4

CB01 Level 4

CB01 Exten. L4

MOD3004 1

MOD3002 1

1 MOD3001

0 10 20 50m

1:1000 @ A3

31/07/15

fjmt francis-jones morehen thorp

UTS University of Technology, Sydney

LACOSTE+STEVENSON I DARYL JACKSON ROBIN DYKE PTY LTD architects in association

Level 3

University of Technology, Sydney - UTS Central

For Information

MOD2003

fimt francis-jones morehen thorp

UTS University of Technology, Sydney

LACOSTE+STEVENSON I DARYL JACKSON ROBIN DYKE PTY LTD
architects in association

Level 4

University of Technology, Sydney - UTS Central

1:1000 @ A3

31/07/15

For Information

MOD2004