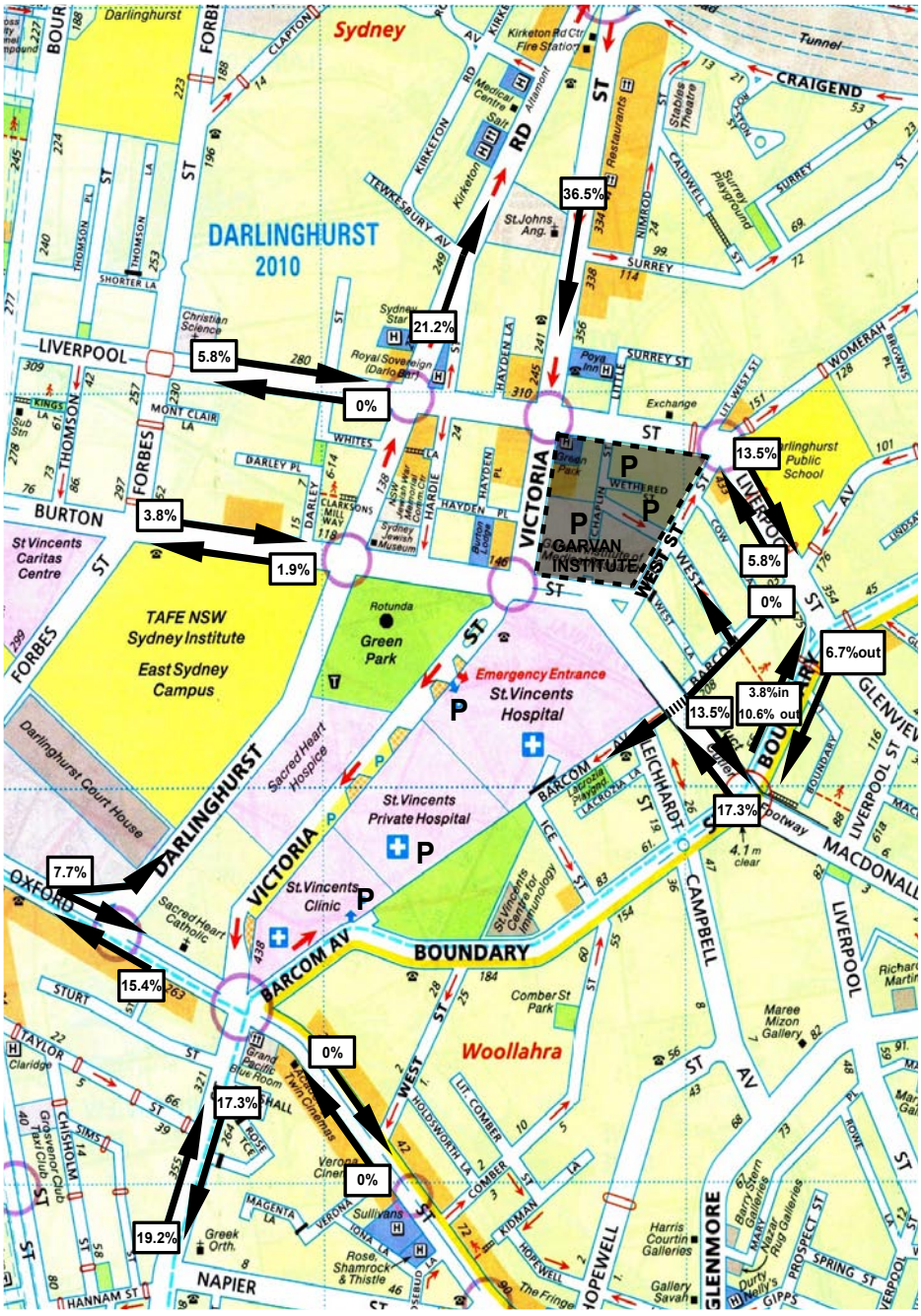

Figure 11. Traffic distribution based on the survey results.

Table 3.5. Intersection operation.

Intersection	Sidra											
	AM						PM					
	EX		FU 400		FU 500		EX		FU 400		FU 500	
	AVD	LOS	AVD	LOS	AVD	LOS	AVD	LOS	AVD	LOS	AVD	LOS
Oxford St - Darlinghurst Rd	27.7	B	27.9	B	28.0	B	32.4	C	32.4	C	32.4	C
Burton St - Darlinghurst Rd	24.5	B	24.8	B	24.9	B	25.1	B	25.1	B	25.1	B
Liverpool St - Darlinghurst Rd	23.5	B	23.6	B	23.7	B	23.3	B	23.8	B	23.9	B
Oxford St - Victoria St	45.8	D	46.4	D	46.5	D	52.8	D	53.1	D	53.2	D
Burton St - Victoria St	23.2	B	23.3	B	23.3	B	24.0	B	26.0	B	26.8	B
Liverpool st - Victoria St	20.9	B	21.2	B	21.5	B	19.1	B	19.5	B	19.6	B
West St - Liverpool St	15.9	B	16.3	B	16.3	B	16.0	B	19.0	B	19.7	B
West St - Burton St	11.1	A	14.1	A	15.0	B	12.1	A	12.2	A	12.2	A
West St - West Ave	9.0	A	8.9	A	8.9	A	9.0	A	8.9	A	8.9	A
Chaplin St - Liverpool St	10.0	A	10.2	A	10.2	A	12.8	A	15.1	B	15.8	B

Intersection	Aimsun											
	AM						PM					
	EX		FU 400		FU 500		EX		FU 400		FU 500	
	AVD	LOS	AVD	LOS	AVD	LOS	AVD	LOS	AVD	LOS	AVD	LOS
Oxford St - Darlinghurst Rd	32.4	C	33.5	C	34.5	C	27.5	B	28.4	B	29.5	C
Burton St - Darlinghurst Rd	24.3	B	24.3	B	24.3	B	20.7	B	21.1	B	20.9	B
Liverpool St - Darlinghurst Rd	15.4	B	15.3	B	15.3	B	16.9	B	16.8	B	16.9	B
Oxford St - Victoria St	40.3	C	41.0	C	41.0	C	39.1	C	48.0	D	50.1	D
Burton St - Victoria St	10.4	A	11.0	A	11.2	A	9.5	A	14.8	B	15.8	B
Liverpool st - Victoria St	13.0	A	13.8	A	13.5	A	12.7	A	14.5	A	14.1	A
West St - Liverpool St	7.0	A	7.6	A	7.5	A	6.1	A	9.7	A	10.5	A
West St - Burton St	2.0	A	1.9	A	1.9	A	1.3	A	1.3	A	1.3	A
West St - West Ave	0.1	A	1.6	A	3.9	A	0.4	A	1.1	A	1.3	A
Chaplin St - Liverpool St	1.0	A	1.1	A	1.1	A	2.6	A	5.6	A	6.3	A

Intersection	Scates 2008																	
	AM									PM								
	EX			FU 400			FU 500			EX			FU 400			FU 500		
	AVD	LOS	DS	AVD	LOS	DS	AVD	LOS	DS	AVD	LOS	DS	AVD	LOS	DS	AVD	LOS	DS
Oxford St - Darlinghurst Rd	39.4	C	0.72	39.6	C	0.77	39.7	C	0.78	50.4	D	0.71	50.5	D	0.72	50.5	D	0.72
Oxford ST - Victoria St	28.2	B	0.82	28.2	B	0.82	28.2	B	0.82	36.2	C	1.01	36.2	C	1.02	36.2	C	1.03

Notes: EX - existing; FU400 - future with 400 space car park; FU500 - future with 500 space car park;
AVD - average delay; LOS - Level of Service; DS - degree of saturation

3.8 Loading/unloading requirements

The existing loading dock has two bays suitable for large trucks (one of them is occupied by a recently acquired waste compactor) and two spaces for vans and cars. The existing provision is satisfactory, although some suppliers are requested to deliver at certain times to avoid congestion. This is considered to be a normal arrangement. It is noted that the current traffic generation by the loading dock is greater than normal, due to VCCRI still being set up, which results in additional deliveries of equipment, sometimes large items. Most of the deliveries to the stores are made by Medium Rigid Vehicles (MRV) or smaller. Note that MRV has dimensions of a typical garbage truck. Other vehicles comprise Small Rigid Vehicles (SRV), vans and cars. Heavy Rigid Vehicles (HRVs, 12 m long) are used only for collection of contaminated waste (once daily on weekdays) and when large equipment is delivered (fridges, office furniture and similar), currently about one delivery per day. The latter deliveries are expected to cease once the setup finishes (in approximately six months), after which there will be only occasional deliveries by HRVs plus daily contaminated waste collection. Currently there is no opportunity for HRVs to turn around within the loading

dock, therefore they reverse into West St on the way out. With the existing very low traffic volumes in West St this situation can be tolerated. With the increased volumes after the ultimate SVRP development it would be necessary to enable HRVs entering and exiting in a forward direction. This can be achieved by either providing a turning area within the loading dock or by separating entry and exit driveways enabling through truck movements.

The preferred option is to provide for turning around on site. A number of designs have been considered and the current concept design incorporates an entry driveway on the northern side of the proposed basement car park entry. The existing two-way driveway to the loading dock is proposed to become an exit only driveway. In terms of the number of bays, one additional truck bay suitable for an HRV and two additional spaces for vans/ cars are recommended for the proposed development. The standard height clearance requirement for MRVs and HRVs is 4.5 m. The concept design incorporates these parameters. Heavy vehicle manoeuvring has been checked using AutoTrack 8 swept path prediction software. The concept design of the loading area has been found to be satisfactory in this respect. **Appendix B** contains the results of the design checks.

Full details of the existing and the likely future loading/unloading activities are included in **Appendix E.**

3.9 Pedestrian and bicycle linkages

The development will take advantage of the existing well developed footpath and cycleway network presented in **Figure 6** of the present report. The existing linkages have the following characteristics indicative of a good level of service.

- They are continuous throughout the area
- They have functional width and are in good repair
- Signalised and zebra crossings are provided
- Streets are mostly level or with low gradients, without steep sections
- Trees and awnings provide protection from sun and rain
- Vehicle speeds are low
- Main paths are generally safe due to good lighting, continuous pedestrian traffic demand and high police presence

Direct pedestrian access is currently provided from Victoria Street to the Garvan Institute and from Liverpool Street to VCCRI. The new buildings will be provided with direct pedestrian access from these streets. Internal linkages will be provided at the ground level as well as through elevated links between the buildings (refer to concept architectural plans).

3.10 Access for emergency vehicles

Emergency services are located within very close distances from the Precinct. Indeed, the Emergency Department of the St Vincent's Hospital is literally across the road. A fire brigade station is located within 300 m from the site, whilst two Police stations are within a few minutes drive. **Figure 12** shows locations of the emergency services and their access routes to the Precinct. A conclusion has been made that the Precinct is and will be well provided for in this regard.

Access into the site can be firstly made via the proposed loading dock driveway and also directly from the street frontages.

Figure 12. Access for emergency vehicles.

3.11 Measures to promote public transport usage and reduce car usage

The proposed measures and the underlying principles and analysis will be discussed in a separate Transport Management and Accessibility Plan (TMAP). A summary of the measures is presented below. The measures are separated into those recommended for implementation and those recommended for further consideration.

Measures recommended for implementation

- Provide n-site bicycle parking/storage facilities. The minimum number of bike parking places is to comply with the requirements of DCP 11 for the whole Precinct.
- Develop and produce a Transport Access Guide (TAG). TAG shall include information on public transport and cycleways (including nearest bicycle repair services). Distribute TAG to all existing staff. Include TAG into the induction package for all new employees and regular visitors (for example students). Make TAG available at the reception in each facility.
- Make all staff aware and encourage the use of www.131500.com.au by emails and by inclusion in TAG.
- Introduce a system which would inform staff members about other staff who reside in their neighbourhood for the purposes of car pooling. This system should cover staff of all four facilities within the Precinct.
- Prepare and distribute a guide on health benefits of walking and cycling.
- Investigate a possibility of introducing shift times for certain staff, increasing the ratio of staff starting and finishing work outside commuter peak periods.

Measures recommended for further consideration

- Provide lockers, changing facilities and showers for bicycle users.
- Employ a Travel Plan coordinator in charge of monitoring, development and implementation of measures to reduce car use.
- Provide interest free loans to staff for purchasing discounted season tickets.
- Develop and implement a system of teleworking, setting a benchmark for minimum teleworking time for each staff member.
- Approach one of the existing car share service providers (for example GoGet or FlexiCar) regarding possible cooperation and installation of a car share parking space near or within the Precinct.
- Implement a reverse incentive system of monetary reward, whereby a small amount is added to the staff member's wages on a daily basis but deducted at the end of the day this staff member's car was recorded as exiting the car park.
- Implement a real time electronic display information system informing staff about the nearest times of bus and train departures. The system should incorporate service disruptions. As an extension, make this system available on the intranet for easy access from each workplace and accessible on mobile/smart phones.

It is important to note that while every effort will be made to encourage public transport use, there are numerous hospital related staff at SVRP for whom public transport is not a feasible option. These categories of staff include doctors on call, nurses on night shift etc. Whilst generic parking rates for ‘commercial offices’ from DCP 11 were used to calculate the required parking provision, hospitals and associated research facilities are a special purpose use, and require special parking provision considerations.

4 CONCLUSIONS AND RECOMMENDATIONS

- The University of NSW (UNSW) proposes to develop the UNSW Institute of Virology (UNSWIV) as Stage 2 of the St Vincent's Research Precinct (SVRP) development. A Joint venture between the Garvan Institute and St Vincent's Hospital proposes to develop Stage 3, a Campus Cancer Centre (GSVCCC).
- Based on provisions of Sydney City Council's DCP 11, the number of parking spaces which can be developed for SVRP would total 325.
- A larger car parking area, up to 400 car parking spaces, was considered in order to address the existing parking provision shortfall at the St Vincent's Hospital. It was found sustainable in terms of both street network and access capacity.
- In general, the Precinct development project is supportable on traffic and parking grounds.

5 REFERENCES

RTA (2002). Guide to traffic generating developments: Issue 2.2. RTA, Sydney, NSW.

Austroads (2005) Guide to Traffic Engineering Practice —Part 5: Intersections at Grade

Urbis & Jackson Architecture (December 2008) "St Vincent's and Mater Health Sydney. Medical Research Precinct Plan". Draft report.

Aurora Projects (2005) Report of Findings of the Darlinghurst Campus Parking Review for St Vincents and Mater Health Sydney.

TRANSPORT & URBAN PLANNING (November 2007) Draft Report. City East Traffic Study

URaP – T T W (2005) Traffic and Parking Report for ST VINCENT'S RESEARCH & BIOTECHNOLOGY PRECINCT

URaP – T T W (2005) Traffic and Parking Report for ST VINCENT'S RESEARCH & BIOTECHNOLOGY – SITE A

South Sydney City Council DCP 11 Transport Guidelines for Development