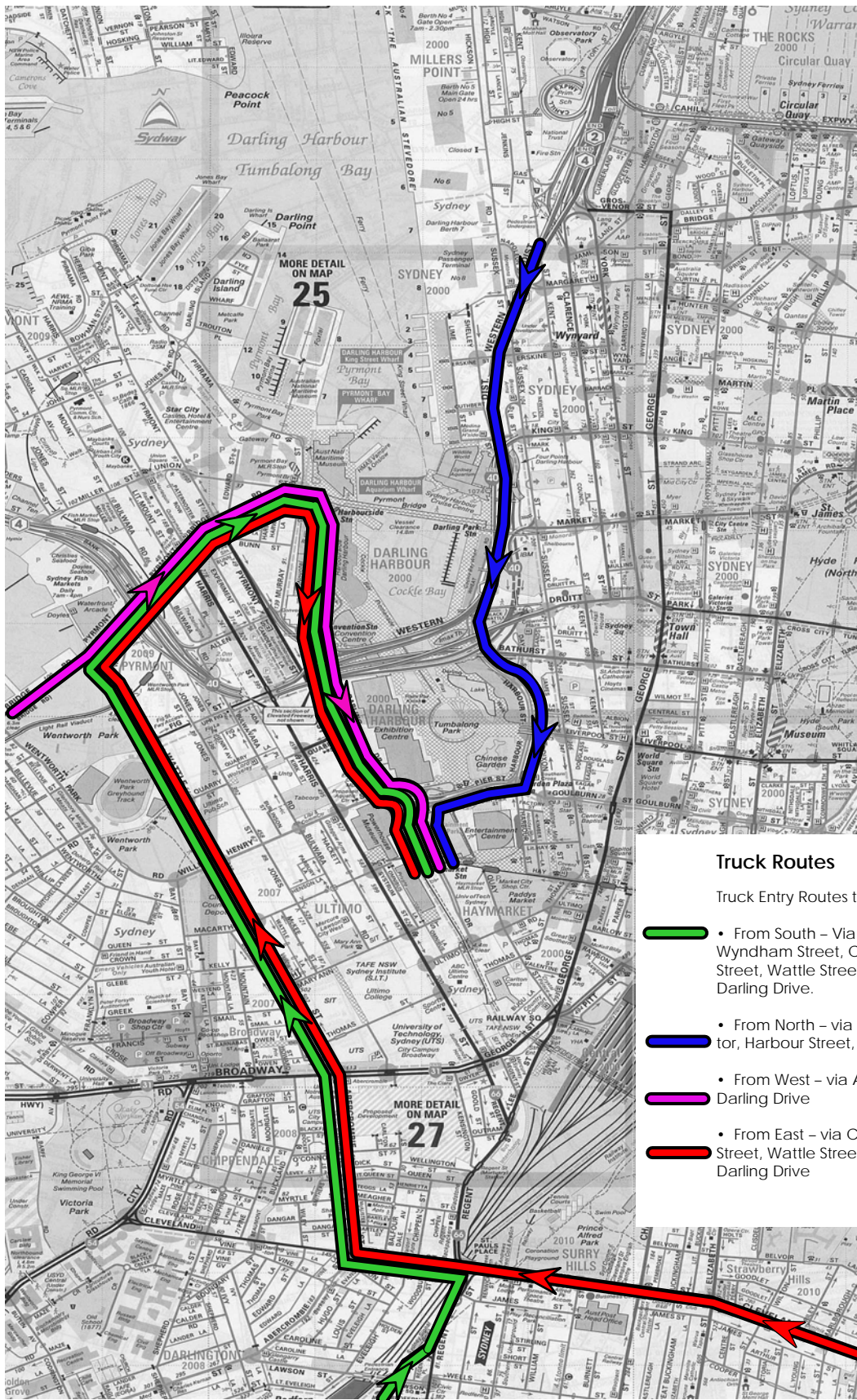


MARSHALLING OF TRUCKS IN DARLING DRIVE - ENTRY ROUTES

DARLING WALK



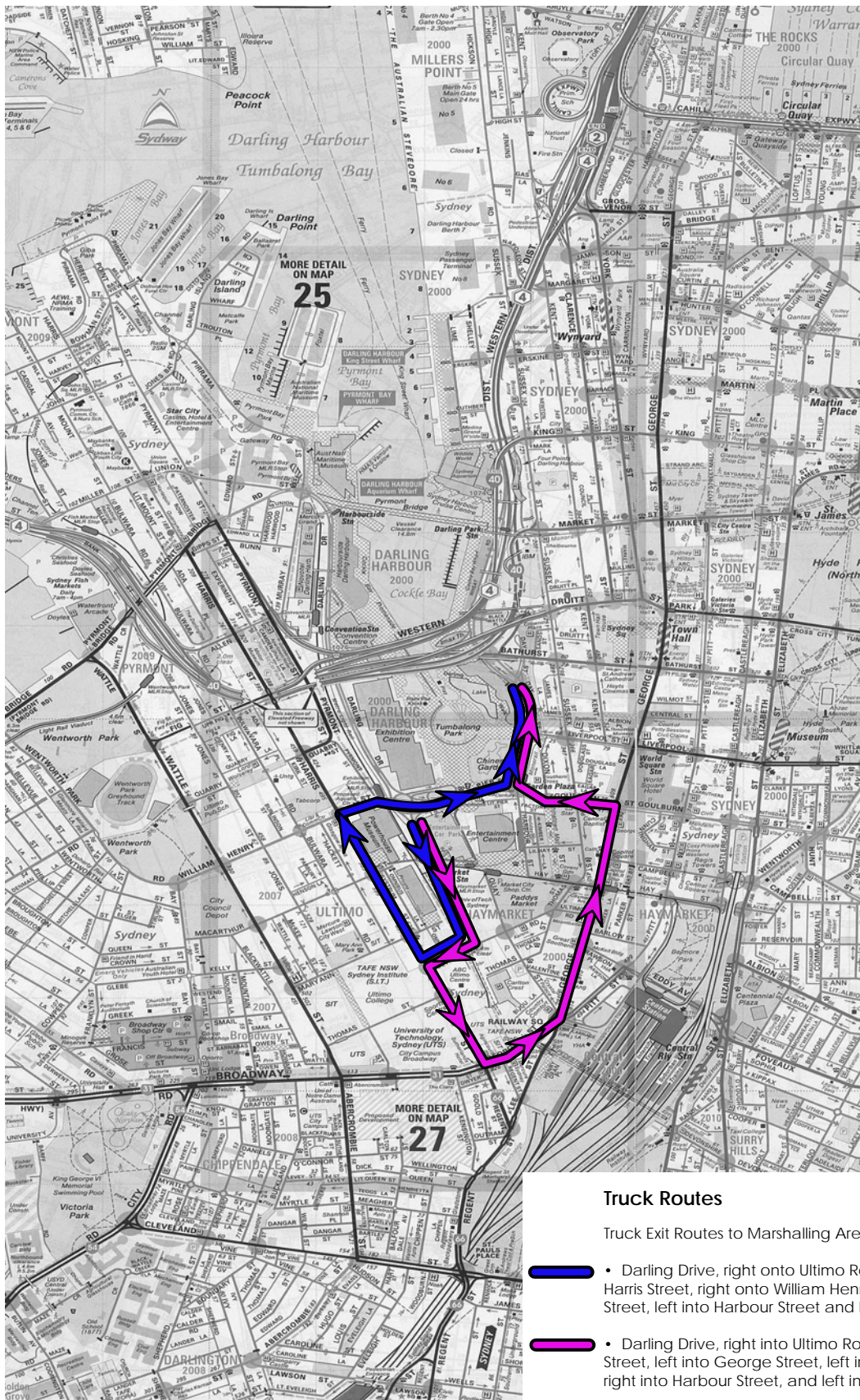
Truck Routes

Truck Entry Routes to Marshalling Area

- █ • From South – Via Botany Road, Anderson Street, Wyndham Street, Cleveland Street, Abercrombie Street, Wattle Street, Bridge Street, Pier Street and Darling Drive.
- █ • From North – via Harbour Bridge, Western Distributor, Harbour Street, Pier Street and Darling Drive
- █ • From West – via Anzac Bridge, Pyrmont Road and Darling Drive
- █ • From East – via Cleveland Street, Abercrombie Street, Wattle Street, Bridge Street, Pier Street and Darling Drive

MARSHALLING OF TRUCKS IN DARLING DRIVE - EXIT ROUTES

DARLING WALK



Truck Routes

Truck Exit Routes to Marshalling Area

- Darling Drive, right onto Ultimo Road, right onto Harris Street, right onto William Henry Street, Pier Street, left into Harbour Street and left into site.
- Darling Drive, right into Ultimo Road, left into Harris Street, left into George Street, left into Goulburn Street, right into Harbour Street, and left into site

17m TRUCK AND TRAILER ACCESSING COACH PARKING AREA FOR LARGE BUSES

DARLING WALK



Scale: 1:400@A3

Halcrow MWT

Filename: CTLCTU009sa67 Darling Dr Bus Zone

Figure 3

Date: 13 May 2009

17m TRUCK AND TRAILER LEAVING COACH PARKING AREA FOR LARGE BUSES

DARLING WALK



Scale: 1:200@A3

Halcrow MWT

Filename: CTLCTU009sa67 Darling Dr Bus Zone

Figure 4

Date: 13 May 2009

17m TRUCK AND TRAILER ACCESSING COACH PARKING AREA FOR SMALL BUSES

DARLING WALK



Scale: 1:300@A3

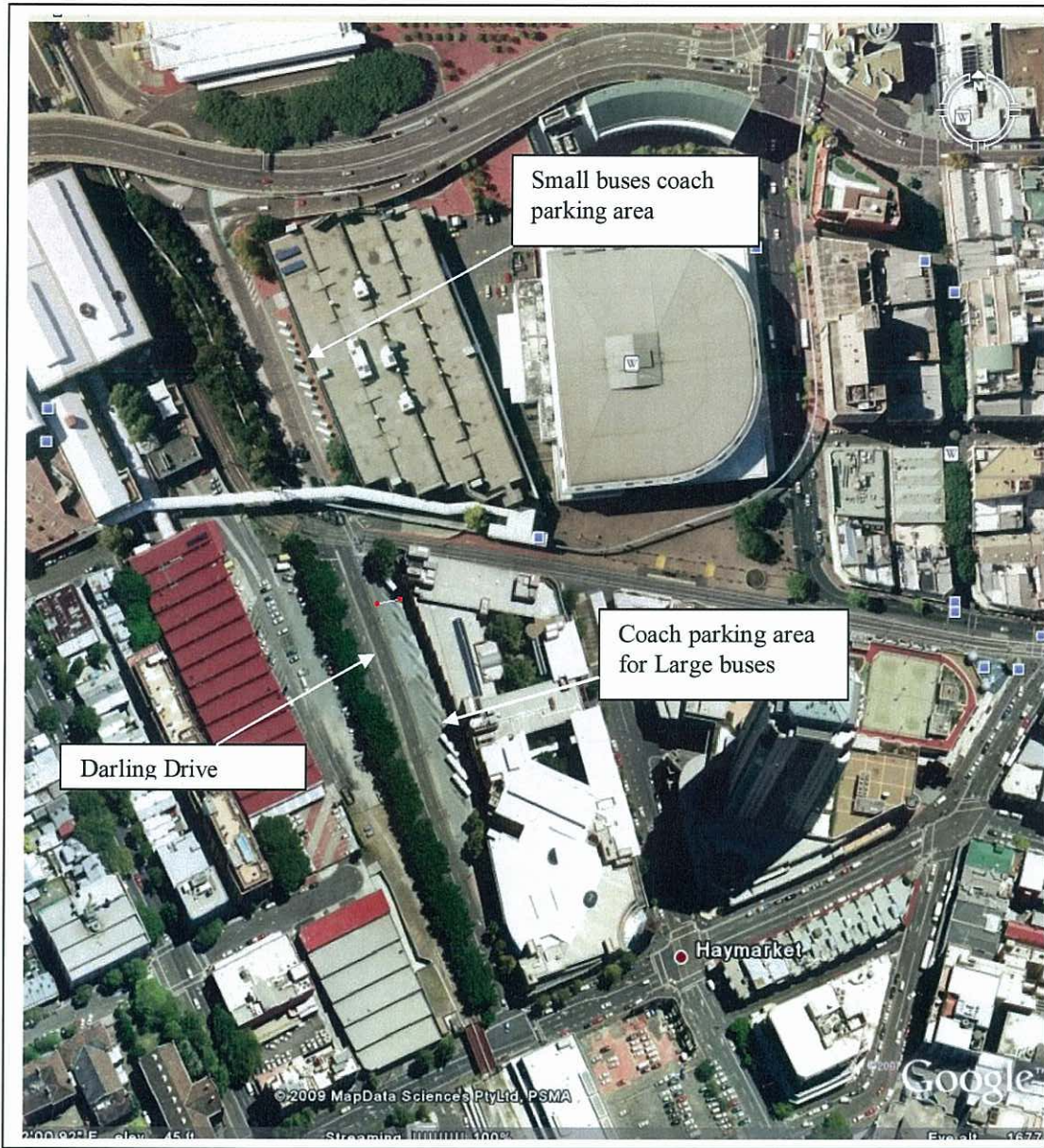
Halcrow MWT

Filename: CTLCTU009sa67 Darling Dr Bus Zone

Figure 5

Date: 13 May 2009

Attachment A - Darling Drive Coach Parking Areas



Coach parking area

Darling Walk Redevelopment - Pedestrian Bridge
Canopy Works
Traffic Management Plan

Final



23 July 2009

Prepared for
Bovis Lend Lease

Darling Walk Redevelopment - Pedestrian Bridge Canopy Works

Traffic Management Plan

Prepared for
Bovis Lend Lease

This report has been issued and amended as follows:

Rev	Description	Date	Prepared by	Approved by
1	Draft for internal review	6/04/09	KI	BM
2	Final	23/07/09		

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Halcrow MWT has prepared this report in accordance with the instructions of Bovis Lend Lease for their sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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1 Introduction

Traffic and pedestrian management plans for the demolition of the Sega World Building and for the main construction of the proposed Darling Walk development were prepared by Masson Wilson Twiney on behalf of Bovis Lend Lease Pty Ltd.

As part of the external works for Darling Walk it is proposed to install canopy over the Bathurst Street pedestrian Bridge. In order to carry out the installation of the canopy, workers and construction equipment will need to be situated on parts of the carriageway of Harbour Street at different stages of the works.

This report forms a component of the application to the Roads and Traffic Authority (RTA) for Road Occupancy licences for the various stages of the installation works.

The report provides traffic management plans for the preliminary works and main works on the installation of canopy on the bridge.

A plan of the works site is provided in Appendix A.

The report is based on the description of the works provided by Bovis Lend Lease, previous traffic survey data for Harbour Street and on a visit to the site to obtain information on the site and existing traffic and pedestrian situations. This report includes an overview of the proposed construction works with respect to traffic and describes the potential impacts to the surrounding road network.

Copies of previous traffic survey data for Harbour Street are provided in Appendix B.

Traffic control plans for specific requirements of the proposed works are provided in Figures 2 to 5. The general notes pertaining to traffic control plans are contained in Appendix C.

RTA Guidelines¹ specify that Traffic Management Plans must be prepared by a person in possession of a current “Select/Modify Traffic Plans qualification or higher with name and certificate attached. The relevant certificate is provided in Appendix D.

The remainder of this report is set out as follows:

- Chapter 2 documents the existing traffic conditions,
- Chapter 3 describes the works and construction phases,

¹ Road Occupancy Manual – RTA (2007)

- Chapter 4 indicates the vehicular access and pedestrian requirements,
- Chapter 5 discusses the traffic control plans for the proposed works, and
- Chapter 6 describes impacts of the proposed works, including issues such as hours of operation, pedestrians, public transport and emergency vehicles.

2 Background Situation

2.1 *Site Location*

The Darling Walk site is located on the western fringe of the Sydney CBD. Being a sub precinct of the Darling Harbour, it is also located in close proximity to the Exhibition and Convention Centres, the IMAX Theatre and the Chinese Gardens. The site has direct frontage to Harbour Street, a four-lane arterial road, which connects to the Western Distributor/Bradfield Highway as well as the Cross City Tunnel Motorway.

The site location is shown in **Figure 1**.

2.2 *Existing Road Network*

An appreciation of the existing traffic conditions can be gained by examining the road network, traffic volumes and the operation of intersections. These aspects are discussed below.

Harbour Street is an arterial road running north-south along the frontage of the site. It generally has two traffic lanes in each direction. Access to the Cross City Tunnel is available in the middle of the road for northbound traffic to the south of Day Street. Vehicular accesses to the site are available from Harbour Street. Wide footpaths exist on either side of the road. Footbridges also exist across Harbour Street near the northern and southern boundaries of the Sega World building. Signalised pedestrian crossings also exist across Harbour Street at the intersections of Day Street and Bathurst Street. The street carries up to 1,200 vehicles per hour in each direction during the morning and evening peak hours.

Day Street is a short road connecting Harbour Street to Bathurst Street with a triangular open space between the three streets. A signalised pedestrian crossing exists across its intersection with Bathurst Street, leading pedestrians from Bathurst Street to the Bathurst Street footbridge over Harbour Street.

Bathurst Street is a one-way street providing access from the Western Distributor to the southern part of the Sydney CBD.

Liverpool Street provides a one-way westbound link between the southern part of the CBD and the Darling Harbour entertainment area. Footbridges are provided from the northern and southern footpaths of Liverpool Street across Harbour Street, providing direct pedestrian access to Darling Harbour.

2.3 Existing Intersection Operating Conditions

As part of the traffic planning for the Darling Walk Redevelopment intersection analysis, using SIDRA intersection analysis programme, was carried out to assess the existing performance of the signalised intersections of Harbour Street with Bathurst Street, Liverpool Street and Day Street. SIDRA Intersection determines the average delay that vehicles encounter and the level of service. SIDRA Intersection provides analysis of the operating conditions which can be compared to the performance criteria set out in Table 2-1. Results of the analysis are presented in Table 2-2.

Table 2-1 – Level of Service Criteria

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals and Roundabouts	Give Way and Stop Signs
A	less than 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; at signals, incidents will cause excessive delays	At capacity, requires other control mode
F	over 70	Roundabouts require other control mode Extra capacity required	Extreme delay, traffic signal or other major treatment required

Adapted from Guide to Traffic Generating Developments, RTA 2002

Table 2-2 – Existing Harbour Street Intersection Operating Conditions

Intersection	Morning Peak		Evening Peak	
	Level of Service	Average Delay per Vehicle	Level of Service	Average Delay per Vehicle
Harbour St/Day St	B	25.1 seconds	B	24.4 seconds
Harbour St/ Bathurst St	C	42.3 seconds	C	40.2 seconds
Harbour St/Liverpool St	A	14.0 seconds	B	22.8 seconds

All the three intersections were found to operate satisfactorily at level of service C or better in both peak periods under existing traffic conditions. This indicates that the intersections are operating satisfactorily to allow work overhead.

2.4 Midblock Traffic Flows

At various stages of the canopy works, traffic lanes will be will be closed progressively, reducing the carriageway to one or two lanes in each direction. During the peak of activities, traffic movement will be reduced to one lane in the section of Harbour Street, south of Bathurst Street. As the road carries up to 1,200 vehicles per hour during the peak hours, it will be necessary to confine closure times to those periods of the night when satisfactory operation would be possible at the lower traffic volumes applying at these times.

To enable an assessment of the impacts of the construction works on the operation of the road network, automatic traffic counts were previously carried out for one week on Harbour Street, north of Liverpool Street from Thursday 3 April to Wednesday 9 April 2008. The results of the traffic counts are provided in **Appendix B**. The results present hourly over a period of seven days in Harbour Street. Implications of these volumes are discussed in Section 4.2 and 4.3 below.

3 Works Program

3.1 *General Description of Works*

The works involve architectural cladding of the footbridge over Harbour Street at its intersection with Bathurst Street. Preliminary works will be carried out first and then the installation of the cladding/canopy over the footbridge will be done. The length of the footbridge will be divided into five sections or zones, starting from the western side to the eastern side. The preliminary works will be carried out in one zone at a time until all zones are completed, starting from the western side of Harbour Street to the eastern side. The requirement for lane closures will vary according to the zone of the bridge where work was being carried out. After the preliminary works are completed, installation of the cladding/canopy will then be carried out in each zone following the same sequence as the preliminary works.

Plans showing the five stages or zones and details of sections of Harbour Street that would be affected are provided in **Appendix A**. As shown, only zones 2-5 will affect the carriageway and these will be completed first before Zone 1 which only affects the footpath area on the western side. Zone 1 will be carried out 3 months after zones 2-5 are completed. The sequences of works for each aspect of works in each zone are described below.

As the works require closure of traffic lanes in Harbour Street, it is proposed to carry out the works at night to minimise traffic impacts.

3.2 *Preliminary and Cladding Works*

As mentioned above preliminary works will be carried out on various sections (zones) of the bridge before the installation works are carried out. Preliminary works for each zone will be completed over 2 nights as follows:

- Zone 2 – Nights 1 and 2
- Zone 3 – Nights 3 and 4
- Zone 4 (a) – Nights 5 and 6
- Zone 4 (b) – Nights 7 and 8
- Zone 5 - Nights 9 and 10
- Zone 1 - 2 nights (3 months after completion of Zones 2-5)

Similarly, cladding works for each zone will also take 2 nights to complete as follows:

- Zone 2 - Nights 11 and 12
- Zone 3 - Nights 13 and 14
- Zone 4 (a) - Nights 15 and 16

- Zone 4(b) - Nights 17 and 18
- Zone 5 - Nights 19 and 20
- Zone 1 - 2 nights (to be carried out 3 months after zones 2-5 have been completed)

Zone 1 will be carried out 3 months after Zones 2- 5 are completed. It will take 2 nights to complete preliminary works and another 2 nights to complete the cladding works.

However to allow for unexpected occurrences that may affect implementation of the works as planned (eg rain), it is proposed to apply for road occupancy licences to cover 4 nights for each item of work instead of 2 nights.

3.3 Road Closures Required for the Works

As mentioned in Section 3.1, the works would require closure of some traffic lanes in Harbour Street. The sections of the road proposed to be closed during each stage of the works are shown on the plans in Appendix A and are summarised in Table 3-1 below.

Table 3-1: Required Lane Closures

Zone of Bridge	Days of works	Traffic Lanes affected	Comments
Zone 2	Nights 1, 2, 11 & 12	Northbound kerbside lane	The northbound outside lane will be open to traffic. Southbound lane is unaffected. The two remaining southbound lanes will carry two-way traffic (contra-flow) from intersection of Day Street to Bathurst Street. Northbound traffic will be diverted to the southbound lanes at the intersection of Day Street/ Harbour Street
Zone 3	Nights 3, 4, 13 & 14	All northbound lanes and one southbound lane closed.	Northbound traffic will be restricted to one lane (the kerbside lane). Southbound traffic will also be restricted to one lane (the southbound kerbside lane) between Day Street and Bathurst Street
Zone 4(a)	Nights 5, 6, 15 & 16	Northbound outer lane and southbound middle lane will be closed	Southbound lane will be restricted to one lane (outer lane) between Bathurst Street and Day Street. Northbound carriageway will be unaffected.
Zone 4(b)	Nights 7, 8, 17 & 18	Southbound kerbside lane and middle lane will be closed.	Southbound lane will be restricted to one lane (outer lane) between Bathurst Street and Day Street. Northbound carriageway will be unaffected.
Zone 5	Nights 9, 10, 19 & 20	Southbound kerbside lane and middle lane will be closed.	Southbound lane will be restricted to one lane (outer lane) between Bathurst Street and Day Street. Northbound carriageway will be unaffected.
Zone 1	3 months after completion of zones 2 to 5	The footpath on the western side of the pedestrian crossing across Harbour Street will be occupied.	No carriageway closure is required. Traffic Controller will guide pedestrians to cross the road.

3.4 Construction Vehicle Access

The works would generate only a small number of trucks for each stage. These trucks will be able to park within the closed area of carriageway. Access routes for construction vehicles would depend on the location of the works.

During works on the northbound lanes, construction vehicles will enter Harbour Street from Liverpool Street or from Goulburn Street. The closed lane will be used for construction trucks to park and deliver materials to the work area.

For works on the southbound lanes in Harbour Street, construction vehicles will enter Harbour Street either from the Western Distributor ramp or from the Harbour Bridge. Again the closed lane will be used to park and deliver materials to the work area. Exiting trucks will travel south in Harbour Street.

4 Traffic Impacts of the Works

4.1 *Impact of Construction Traffic*

As mentioned in Section 2.2, Harbour Street currently carries around 1,200 vehicles per hour in each direction during the morning and evening peak hours and much less traffic at night. Compared with the background traffic on Harbour Street, the impact of the few construction vehicles visiting the site during the canopy installation works would be minimal.

Accordingly, construction traffic would have minimal impact on traffic operation in Harbour Street.

4.2 *Impact of Works on the Harbour Street Carriageway*

The progressive closure of traffic lanes in Harbour Street to allow installation of the canopy will result in Harbour Street at times being reduced to one lane northbound or one lane southbound. Such reductions in traffic capacity would generally only be able to take place at night, when traffic flows on Harbour Street were sufficiently low.

The constriction of the north or southbound carriageways would have implications both for midblock operation of Harbour Street and for the operation of the signalised intersection of Harbour Street with Bathurst Street.

The RTA Transport Management Centre has indicated that the following conditions are required by the RTA for the proposed closures:

- In the case when traffic flow is reduced to a single lane on the correct side of the road such as for Zones 2, 4 and 5, maximum traffic volume of 1,000 vehicles per hour per lane will be acceptable.
- For a traffic diversion into the opposite side of the road as proposed for Zone 3 work, a maximum traffic volume of 750-800 vehicles per hour per lane will be acceptable.
- Any night closures during weekdays must end by 5:30am.
- When only one southbound lane was provided traffic controllers will be required to guide traffic turning into the single open southbound lane of Harbour Street from the Western Distributor exit and Cross City Tunnel exit

Therefore 1,000 vehicles per hour per lane and 800 vehicles per hour per lane will be the limiting figures for consideration of working hours for work items that require lane closures for travel on the correct side of the road and the opposite side of the road respectively. Also it is proposed that all closures that would extend to weekday mornings would end by 5:30am.

4.3 *Traffic Volumes in Harbour Street*

As mentioned in Section 2.4, automated traffic counts were carried out for one week in Harbour Street, between Liverpool and Day Street from Thursday 3 April to Wednesday 9 April 2008. The results of the traffic counts are provided in Appendix B.1.

Applying the RTA's limiting requirements of 1,000vph and 800vph for the seven days indicated that the hours in the nighttimes when traffic can be reduced to one lane and when contra-flow can occur are shown in Table 4-1 will be applicable to this work.

Table 4-1: Nighttime hours that comply with RTA's Lane Closure Requirements

Weeknight	Northbound		Southbound	
	Reduction to One Lane (<1000vph)	Contra-flow (<800vph)	Reduction to One Lane (<1000vph)	Contra-flow
Mon – Wed	10:30pm-5:30am	12:00am-5:30am	8:00pm-5:30am	8:30pm-5:30am
Thursday	11:30pm-5:30am	12:00am-5:30am	8:00pm-5:30am	8:00pm-5:30am
Friday	12:00am-9:00am	1:00am-9:00am	8:00pm-8:00am	8:00pm-8:00am
Saturday	1:00am-9:00am	1:00am-9:00am	8:00pm-8:00am	8:00pm-8:00am
Sunday	8:30pm-5:30am	8:30pm-5:30am	8:00pm-5:30am	8:00pm-5:30am

Traffic count data for Harbour Street, at the intersection of Goulburn, Liverpool and Bathurst Streets, were also obtained from the RTA SCATS Traffic Reporter. The data show hourly traffic volume profile for northbound and southbound traffic from Monday 16 February to Sunday 22 February 2009. The data obtained are presented in Appendix B.2.

Traffic volumes in the RTA 2009 data are generally lower than the figures obtained in the 2008 automatic traffic counts. Therefore the 2008 automatic traffic count data will be used in the assessment of hours of work as this would result in the worst case situations with regard to traffic impacts during the proposed night lane closures.

The impacts of each work items and the applicable hours of work, based on Table 4-1 are discussed below.

4.4 *Operation hours of Works*

4.4.1 *Zone 1*

Zone 1 works will be carried out in the section of the pedestrian bridge between the western footpath and Darling Harbour. Therefore there will be no lane closure and therefore no impact on traffic in Harbour Street.

The bridge will be closed to pedestrians at both ends. However, the at-grade pedestrian crossings will be maintained and a traffic controller standing on the closed footpath will provide guidance to pedestrians on the western side of Harbour Street. Therefore the work can be carried out during daytime hours between 7:00am-7:00pm, Monday to Friday and 7:00am-5:00pm, Saturday in accordance with conditions of consent.

4.4.2 Zone 2 Works

Installation works in the Zone 2 section of the pedestrian bridge requires closure of the northbound kerbside lane reducing the northbound carriageway to one lane between Day Street and Bathurst Street. Applying the nighttime hours in Table 4-1, these works can be carried out at the following times:

- Monday - Wednesday - 10:30pm-5:30am
- Thursday night - 1:30pm-5:30am
- Friday night - 2:00am-9:00am
- Saturday night - 1:00am-9:00am
- Sunday night - 8:30pm-5:30am

4.4.3 Zone 3 Works

Zone 3 works involve diversion of northbound traffic into southbound carriageway between Day Street and Bathurst Street. As this requires contra-flow operation with one northbound traffic lane and one southbound traffic lane, the limiting traffic volume would be 800 vehicles per hour per lane. The operational hours of work for zone 3 works will be as follows:

- Monday - Wednesday - 12:00 midnight - 5:30am
- Thursday night - 12:00 midnight-5:30am
- Friday night - 1:00am-9:00am
- Saturday night - 1:00am-9:00am
- Sunday night - 8:30pm-5:30am

4.4.4 Zone 4(a) Works

Zone 4(a) works require closure of the northbound outer lane and southbound middle and outer lanes, reducing traffic to one lane in each direction but without contra-flow operation. From Table 4-1, the operational hours of work for Zone 4(a) will be as follows:

- Monday - Wednesday night - 10:30pm-5:30am
- Thursday - 11:30pm-5:30am
- Friday - 2:00am-9:00am
- Saturday - 1:00am-9:00am
- Sunday - 8:30pm-5:30am

4.4.5 Zone (4b) Works

Zone 4(b) works require closure of two southbound lanes reducing southbound traffic movement to one lane. The allowable operational hours from Table 4-1 will be as follows:

- Monday - Wednesday - 8:00pm-5:30am
- Thursday - 8:00pm-5:30am

- Friday - 8:00pm-8:00am
- Saturday - 8:00pm-8:00am
- Sunday - 8:00pm-5:30am

4.4.6 Zone 5 Works

Zone 5 works require closure of two southbound lanes reducing southbound traffic movement to one lane. The allowable operational hours from Table 4-1 will be as follows:

- Monday – Wednesday - 8:00pm-5:30am
- Thursday - 8:00pm-5:30am
- Friday - 8:00pm-8:00am
- Saturday - 8:00pm-8:00am
- Sunday - 8:00pm-5:30am

The proposed operational hours of works for each zones of the bridge that would have minimal impacts on traffic operation in Harbour Street are summarised in Table 4-2. This indicates that if the proposed lane closures are carried out within the hours indicated, the closures would not have significant impacts on traffic operation in Harbour Street.

Table 4-2: Operational hours of works for Zones 2 - 5

Weeknight	Zone 2	Zone 3	Zone 4(a)	Zone 4(b)	Zone 5
Monday - Wednesday	10:30pm-5:30am	12:00am-5:30am	10:30pm-5:30am	8:30pm-5:30am	8:30pm-5:30am
Thursday	11:30pm-5:30am	12:00am-5:30am	11:30pm-5:30am	8:00pm-5:30am	8:00pm-5:30am
Friday	12:00am-9:00am	1:00am-9:00am	12:00am-9:00am	8:00pm-8:00am	8:00pm-8:00am
Saturday	1:00am-9:00am	1:00am-9:00am	1:00am-9:00am	8:00pm-8:00am	8:00pm-8:00am
Sunday	8:30pm-5:30am	8:30pm-5:30am	8:30pm-5:30am	8:00pm-5:30am	8:00pm-5:30am

4.5 Pedestrian Access

Access to the Bathurst Street pedestrian footbridge will be closed during the installation works. Advisory signs will be placed at the entrances to the bridge on either side advising pedestrians to use alternative crossing facilities such as the at-grade pedestrian crossing at Bathurst Street or to use the Liverpool Street footbridge south of the Bathurst Street footbridge.

When part of the footpaths on the western side was closed, traffic controller will provide guidance to pedestrians at this side of the signalised crossing.

A pedestrian wayfinding signage plan has already been implemented as part of the traffic management plan for the demolition and main construction works. This signage plan will

continue to guide pedestrians in Harbour Street. A copy of the plan is provided in Appendix E.

Access for pedestrians will continue to be available via the Liverpool Street footbridges. The impacts of the canopy installation works on pedestrian access will not be significant as pedestrian numbers at the time of the works would be very low as pedestrians would be given early directions to alternative routes.

5 Recommended Traffic Control Plans

The recommended traffic control plans applicable to each items of work are discussed in the following sub-sections. Site specific traffic control plans are provided in figures 2 to 6 and general notes on traffic control plans are provided in **Appendix C**.

A brief description of each item of the construction works and the necessary traffic control plans for each item of works is provided below.

5.1 *Zone 1 Works*

Zone 1 works will not affect the carriageway in Harbour Street and therefore no traffic control is required. Warning signs “No Pedestrian Access” and “Pedestrian Watch Your Step” will be installed on the approaches to the closed section of the footpath on the western side of Harbour Street. A plan showing these signs is provided in **Figure 2**.

5.2 *Zone 2 – Works involving closure of one Northbound Lane*

Zone 2 works will be carried out in the section of the pedestrian bridge adjacent to the northern kerbside lane. The kerbside lane will be closed between Day Street and Bathurst Street for two nights each during the initial preparation and canopy installation works. The outer lane will be opened to traffic.

As indicated in Table 4-2, the lane closure will be carried out during the hours of the night when traffic volumes in the northbound lanes are less than 1000 vehicles per hour.

The traffic control plan shown in **Figure 3** will be implemented in Harbour Street during these works. As this work will be carried out at night, flashing arrow signs will be included in the signs and devices installed.

5.3 *Zone 3 Works Involving Contra-Flow Traffic Operation*

Zone 3 works involve night time full closure of the northbound lanes and closure of one southbound lane. The remaining two southbound lanes between Bathurst and Day Streets will then carry two-way traffic (contra-flow traffic operation). Northbound traffic will be diverted to the middle lane of the southbound carriageway from Day Street to Bathurst Street. Southbound traffic will be restricted to the kerbside lane only.

As indicated in Table 4-2, the lane closure and contra-flow traffic operation will be carried out during the hours of the night when traffic volumes in the northbound and southbound carriageways are less than 800 vehicles per hour. These times include 12:00 midnight-5:30am, Monday – Thursday, 1:00am-9:00am Friday-Saturday and 8:30pm-5:30am on Sunday.

As this involves significant change of traffic conditions and contra-flow operation, the speed limit should be reduced to 40km/h in the affected section of Harbour Street starting from the intersection of Pier Street to Bathurst Street for northbound traffic and from 150m north of Bathurst Street for southbound traffic. Therefore “Roadwork Speed Limit” (R4-212) sign will be installed. Authorisation of the use of the “Roadwork Speed Limit” (R4-212) sign shall be obtained through RTA’s Traffic Management Centre. The nearest Police Station needs to be notified by the Sydney Harbour Foreshore Authority in writing of authority’s intention to implement a roadwork speed limit seven days prior to works commencing. Direction signs for the diverted northbound traffic will also be installed.

Drivers turning right from the Western Distributor and Cross City exit ramp into Harbour Street may not have sufficient warning of the contra-flow operation at the intersection of Harbour Street. A traffic controller should be stationed near the exit to give guidance to the right-turning traffic.

The traffic control plan shown in **Figure 4** will be implemented in Harbour Street during these works.

5.4 Zone 4(a) Works

Zone 4(a) works involve works in the section of the bridge over the median island and the outer lanes of the southbound carriageway. The works therefore require closure of the non-kerbside lanes in the northbound and southbound carriageways. Northbound and southbound traffic will be restricted to the kerbside lane in each direction.

The lanes closure will be carried out during the hours of the night when traffic volumes in northbound and southbound carriageway are less than 1000 vehicles per hour.

The traffic control plan shown in **Figure 5** will be implemented in Harbour Street during these works.

5.5 Zone 4(b) Works

Zone 4(b) works involve works in the section of the bridge over the kerbside lane of the southbound carriageway. The works therefore require closure of the kerbside and middle southbound lanes. Northbound carriageway will not be affected by the works.

The lanes closure will be carried out during the hours of the night when traffic volumes in the southbound carriageway are less than 1000 vehicles per hour.

The traffic control plan shown in **Figure 5** will be implemented in Harbour Street during these works. Southbound traffic lanes will be reduced to one lane from the northern approach and also south of the work area in Bathurst Street.

5.6 Zone 5 Works

Zone 5 works involve works mainly in the section of the bridge over the eastern footpath including the eastern kerb area. The works therefore require closure of the kerbside and middle southbound lanes, reducing southbound traffic to the outer lane, similar to the Zone 4(b) works.

The lanes closure will be carried out during the hours of the night when traffic volumes in the southbound carriageway are less than 1000 vehicles per hour.

The traffic control plan shown in **Figure 5** which was used for Zone 4(b) works will also be applicable to the Zone 5 works.

6 Assessment of Traffic Management Plan

An assessment of the traffic impacts of the stormwater diversion works has been undertaken in accordance with the RTA Guidelines for preparing a traffic management plan. The Traffic Management Plan and road occupancies or temporary speed zone will also require approval by the RTA. The required assessment of the Traffic Management Plan is provided below.

A. Description or Detailed Plan of the Proposed Measures

The works involve cladding of the footbridge over Harbour Street at its intersection with Bathurst Street. After the preliminary works are completed, installation of canopy will then be carried out in each zone following the same sequence as the preliminary works. The works require progressive closure of traffic lanes in Harbour Street and would therefore be carried out in the night.

In accordance with advice from the RTA Transport Management Centre presented above, traffic diversions and lane closures will be confined to hours when the available lanes would provide sufficient capacity for traffic flows at the time. Table 6.1 indicates the hours of operation that would meet RTA requirements.

Table 6-1: Operational hours of works for Zones 2 - 5

Weeknight	Zone 2 Works	Zone 3 Works	Zone 4(a) Works	Zone 4(b) Works	Zone 5 Works
Monday - Wednesday	10:30pm-5:30am	12:00am-5:30am	10:30pm-5:30am	8:30pm-5:30am	8:30pm-5:30am
Thursday	11:30pm-5:30am	12:00am-5:30am	11:30pm-5:30am	8:00pm-5:30am	8:00pm-5:30am
Friday	12:00am-9:00am	1:00am-9:00am	12:00am-9:00am	8:00pm-8:00am	8:00pm-8:00am
Saturday	1:00am-9:00am	1:00am-9:00am	1:00am-9:00am	8:00pm-8:00am	8:00pm-8:00am
Sunday	8:30pm-5:30am	8:30pm-5:30am	8:30pm-5:30am	8:00pm-5:30am	8:00pm-5:30am

Traffic Control Plans have been prepared for each stage in accordance with AS1742.3 and RTA Guidelines. The traffic control plans will be implemented to inform the public and minimise impact of the works.

B. Identification and Assessment of Impact of Proposed Measures

As explained above the small number of trucks that would visit the site during the canopy works would have negligible impact on traffic operation in Harbour Street.

With lane closures confined to hours in which RTA specified traffic maximum would be complied with, traffic impacts would be acceptable.

C. Measures to Ameliorate the Impact of Reassigned Traffic

It is proposed to carry out the works that require lane closures at night when traffic volumes are lower, to reduce impact of lane closures on traffic conditions in Harbour Street. The hours of work will be limited to the hours shown in Table 6-1. Advance warning signs will be installed in Harbour Street on approaches to the Bathurst Street pedestrian bridge to inform drivers of closed lanes.

D. Assessment of Public Transport Services Affected

There will be no re-direction of public transport traffic during the project.

E. Details of Provision for Emergency Vehicles, Heavy Vehicles, Cyclists & Pedestrians

No change to access for emergency vehicles is proposed. Heavy vehicles will continue to have access into Harbour Street, including during lane closures at night.

There is no designated cycle route in Harbour Street. Cyclists will therefore not be affected by the proposed works.

As shown in Figure 2, advisory signs will be placed at the entrances to the Bathurst Street pedestrian bridge on either side advising pedestrians to use alternative crossing facilities such as the at-grade pedestrian crossing at Bathurst Street or to use the Liverpool Street footbridge south of the Bathurst Street footbridge.

F. Assessment of Effect on Existing and Future Developments with Transport Implications in the Vicinity of Proposed Measures

The proposed measures will be temporary and the effect on any existing development will be negligible. Future developments will not be affected by the works.

G. Assessment of Effect of Proposed Measures on Traffic Movements in Adjoining Council Areas

The works will have no effect on adjoining Council areas.

H. Public Consultation Process

Public consultation will be in accordance with the conditions of consent. RTA will be consulted on the proposed lane closures in Harbour Street.

The name and telephone number of the Construction Manager are as follows:

Name: Richard Eaton
Contact (Mobile No): 0408 252 679

SITE LOCATION

DARLING WALK

