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Dear Sir / Madam

## Crown Sydney - Response to Submissions

### 1 Introduction

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The following document provides responses to issues raised in relation to the transport study supporting the Crown Sydney development application.

### 2 Transport for NSW Comments

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#### 2.1 Traffic Assessment

##### 2.1.1 Impact of CBD Light Rail

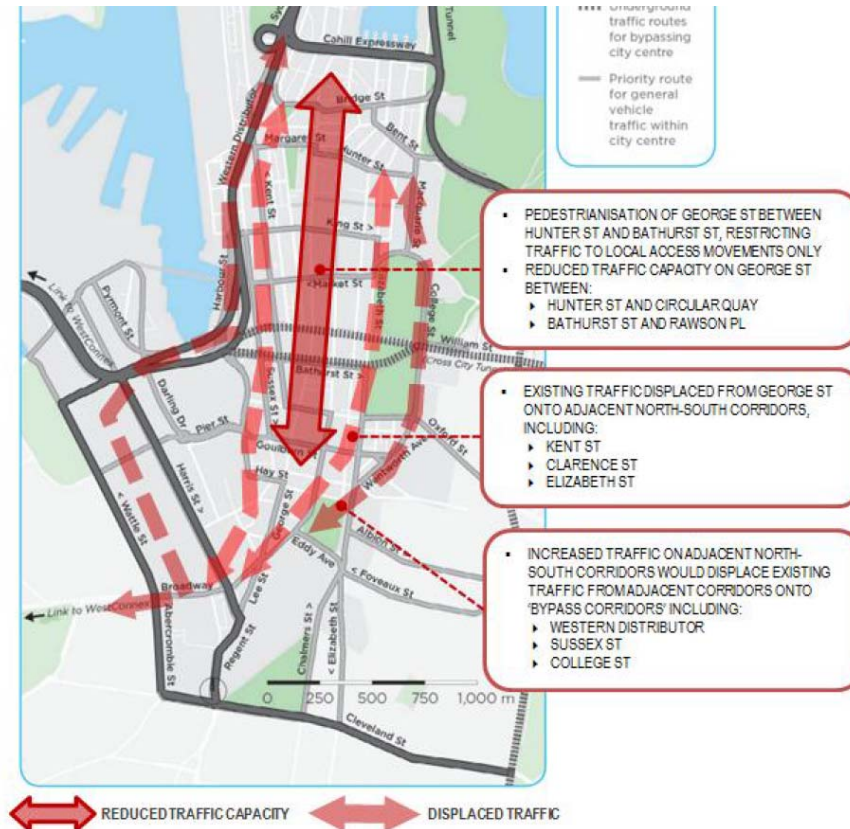
***The proposed changes to George Street as a result of the proposed CBD Light Rail will increase traffic movements on the road network located within and adjacent to the Barangaroo Precinct. These changes have not been taken into account within the traffic analysis for the proposed development***

As noted in the TMAP, Transport for NSW is currently preparing a meso-scopic traffic model which considers the impacts on CBD streets following the completion of the Sydney light rail project. The EIS for the light rail project (specifically Technical Paper 1 – Transport Operations Report) provides no specific details with respect to changes in traffic volumes on Hickson Road adjacent to Barangaroo following the closure of George Street to general traffic.

It should be noted that the Sydney City Centre Capacity Improvement Plan (RMS, November 2014) provides some detail with respect to the redistribution of traffic following the closure of George Street to general traffic. This plan illustrates the existing traffic displaced from George Street will be redirected onto adjacent north-south corridors, those being:

- Kent Street
- Clarence Street
- Elizabeth Street
- Macquarie Street

Capacity improvements along both Clarence Street and Kent Street are proposed which are forecast to mitigate the impacts of this redistributed traffic.



Importantly Hickson Road and Sussex Street (at the northern end of the CBD) are not identified as corridors expected to take displaced traffic from George Street. Therefore the traffic flows used for the modelling in the TMAP are considered appropriate to understand the impacts associated with the proposed development.

### 2.1.2 Linsig Intersection Analysis

***The Transport Assessment Report indicates that the performance of the Hickson Road/Napoleon Street intersection, in comparison to MOD 4, operates above acceptable levels of performance.***

The transport assessment notes that the Hickson Road/Napoleon Street intersection will operate at the same level of service (E) in comparison to the previous Barangaroo Concept Plan modification, with a decrease in delay of only 1 second per vehicle. In the constrained environment of the Sydney CBD it is common for intersections to operate at Level of Service E or F. In this context, given the minor decrease in delay as a result of the proposed development (1 second per vehicle), the impacts are considered negligible and would not warrant any modifications to the intersection.

***The traffic analysis suggests the performance of the Sussex Street/Erskine Street intersection will improve with an increase in traffic volume, which requires clarification***

Traffic generated by the Crown Sydney development in the AM and PM peaks will be counter-cyclical to that of commuter traffic. That is, movements to Crown Sydney are generally outbound in the morning peak, and inbound in the PM peak – the opposite direction to commercial workers travelling to and from the city. This explains the small improvement in intersection operation for Sussex Street/Erskine Street.

### 2.1.3 Traffic Generation from Hotel

***Advise how the parking allowance and subsequent generation of traffic is considered or addressed by the TMAP.***

Given the unique nature of the integrated resort, the most appropriate method to forecast future traffic generation was to refer to similar elements of the existing Crown resort in Melbourne. This methodology is consistent with that recommended in the *RMS Guide to Traffic Generating Developments*.

At the Crown resort in Melbourne a much higher quantum of on-site parking is provided, and in this context the approach taken to forecast vehicle movements into Crown Sydney may be considered conservative.

The traffic forecasts indicate more than 210 vehicle trips are generated in the PM peak hour by the integrated resort, comprised of both self park and valet movements. This number of vehicles movements is equivalent to 42% of the overall car park capacity (500 spaces, excluding residential uses). This is a higher generation rate when compared to other land uses (e.g. commercial – 26% of car parking spaces) during the PM peak period.

#### 2.1.4 Distribution of Generated Traffic

***No detailed information is provided on how the generated traffic would be distributed along Hickson Road. Future AM and PM peak periods should be reported.***

The forecast traffic distribution associated with Crown Sydney is illustrated in Figure 23 (for the AM peak hour) and Figure 24 (for the PM peak hour) of the updated traffic assessment.

#### 2.1.5 Construction Traffic Management

***Several construction projects are likely to occur at the same time within the Barangaroo and Wynyard Precincts. The cumulative increase in construction vehicle movements from these projects could have the potential to impact on bus services in the CBD, and the safety of pedestrians and cyclists within the Barangaroo and Wynyard Precincts during commuter peak periods***

A cumulative traffic assessment has been undertaken which considers the impacts of the Crown Sydney construction project in the context of ongoing works within the Barangaroo and Wynyard precincts. This assessment concludes the Crown Sydney construction works will have a negligible impact on the operation of the road network compared to the current environment.

The assessment also considers pedestrian and cyclist movements during the construction works. The assessment concluded the construction related impacts, particularly with respect to pedestrians and cyclists, could be appropriately managed.

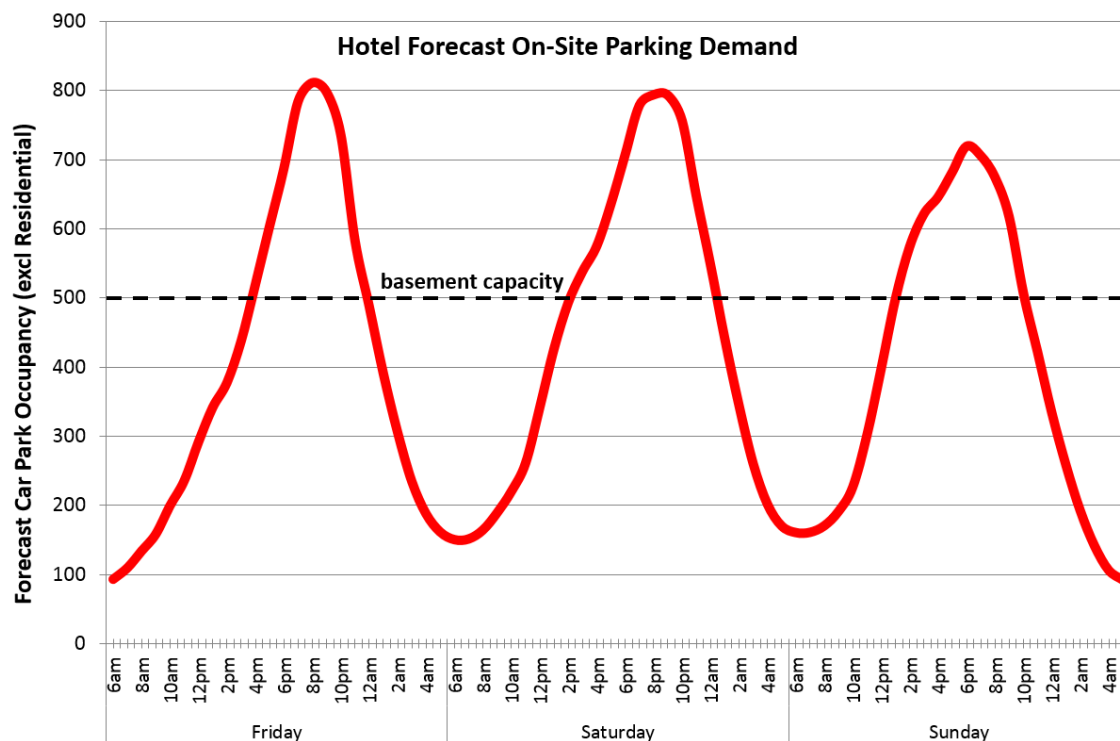
No footpath closures or changes to existing bicycle routes are considered necessary to facilitate the construction works. The pedestrian environment in the Barangaroo/Wynyard precinct has recently been improved through the opening of the City Walk Bridge and installation of traffic signals at the Hickson Road / Napoleon Street intersection. The pedestrian network will be further enhanced following the opening of the Wynyard Walk Bridge – expected in late 2015.

## 2.2 Parking Assessment

### 2.2.1 Car Parking Demand for Hotel

500 car parking bays are proposed within the hotel to service the non-residential components of the development. This quantum of parking was determined based on the expected daily profile of vehicular movements arriving and departing the site. A daily profile of activity was generated based on the current levels of traffic movements (both valet and self park) generated by the Crown Melbourne site over the course of an entire year. The data was moderated based on the number of members anticipated for the hotel relative to the total number in Crown Melbourne.

The expected parking demand based on this analysis for the hotel is shown below.



***Justification for not fully catering for peak demand***

The quantum of parking proposed (500 spaces) will meet the expected demand generated by the hotel on weekdays and for the majority of the time on weekends (Friday evening through Sunday). This precinct-wide strategy is a sensible approach to reduce the overall extent of car parking in the Barangaroo precinct. This level of parking provides for a supply-constrained parking provision that encourages public transport use, while also minimising the impact on local residents and businesses.

A similar approach is taken by The Star at Pyrmont, where parking demand exceeds supply on Friday and Saturday evenings. The additional demand for parking during these peak periods is managed through the external supply of parking in the Darling Harbour precinct such as the Harbourside car park. Outside of these evening peaks, demand is considerably lower, and thus casino parking is largely contained on site.

***The Transport Assessment Report proposes that public car parks at Towns Place and Headland Park could be used by visitors to the hotel to cater for a 300 space shortfall in demand. These public car parks will also be used by visitors to the Headland Park and Barangaroo Central. No analysis has been undertaken to demonstrate that sufficient supply is available for visitors to public parks and the hotel.***

The transport assessment notes that a number of adjacent off-street car parks (not only Towns Place and Headland Park) may be utilised to accommodate the residual car parking demand. These off-street car parks typically accommodate demand generated by employees of nearby commercial buildings. The peak parking demand for the hotel coincides with off-peak periods for these commercial car parks – therefore creating the opportunity for the shared use of spaces. This results in an efficient allocation of parking across the Barangaroo precinct.

***Additionally no consideration has been given to the impact of circulating traffic moving through the Precinct to access these parking spaces.***

Traffic will only be circulating through the precinct to access these adjacent car parking areas outside of the road network peak hours (i.e. after 7pm on Friday and Saturday evenings). During these periods the traffic demand on CBD roads is significantly reduced when compared to the commuter peak hours – and therefore this circulating traffic would have a negligible impact on the overall operation of the road network.

### 2.2.2 Bicycle Parking and Facilities

***The transport assessment does not provide justification for bicycle parking provision for staff and visitors. Details of end of trip facilities for cyclists are also not provided in the transport assessment.***

Section 4.3.1 of the transport assessment provides details in regards to bicycle parking and end of trip facilities for staff and visitors.

- Staff bicycle parking : 83 spaces
- Residential bicycle parking spaces: 68 spaces
- Visitor bicycle parking spaces: 37 spaces
- Staff showers: 6 showers plus male and female changing rooms
- Staff lockers: 83 lockers

### 2.2.3 Coach Parking

***The transport assessment does not identify the coach parking provision in a map for the proposed development***

Allocation of kerbside space in vicinity of Crown Sydney for coach set down / pick up is planned within the Barangaroo Concept Plan. This will service tour groups travelling to and from Crown Sydney to other areas of Sydney.

Current planning has identified kerbside parking on the western side of Lime Street just south of the basement access to Crown Sydney for coach pick up and set down. The final location for coaches will be confirmed at a later date in consultation with key stakeholders.

### 3 City of Sydney Council Comments

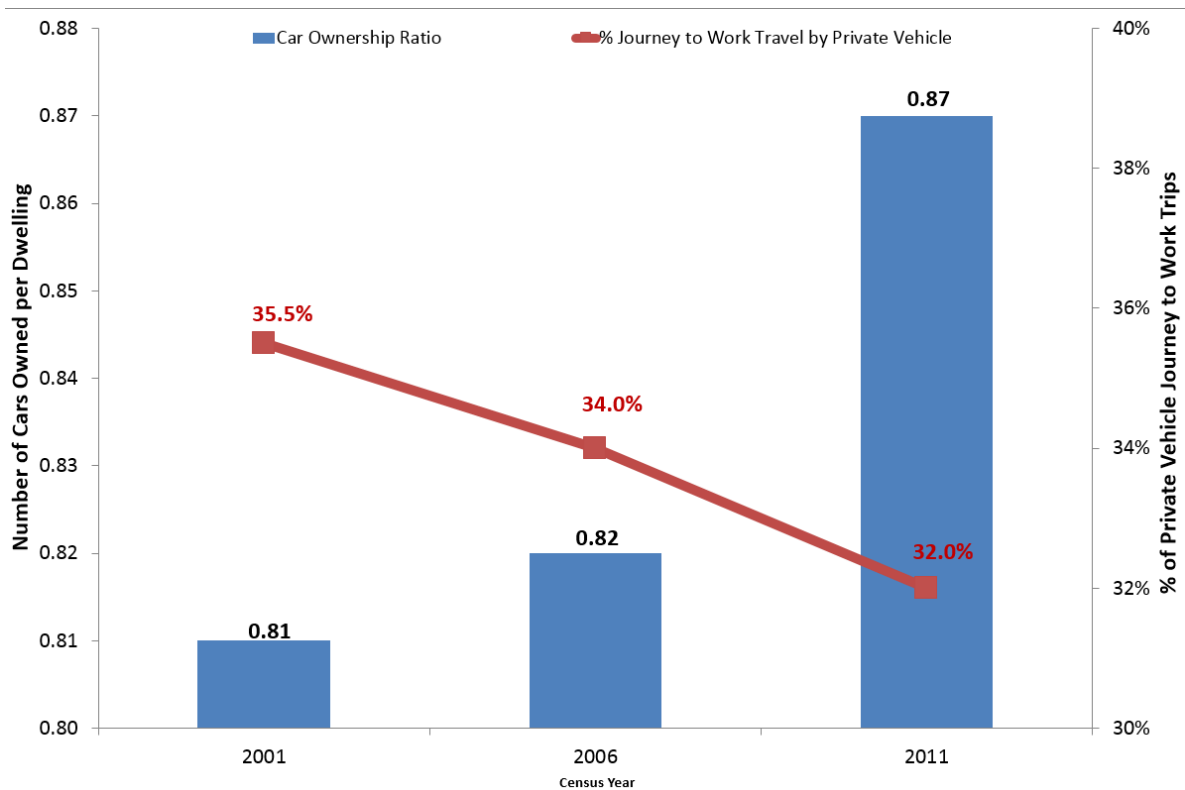
#### 3.1 Limit residential car parking

Car parking for the residential component of the development is to be provided at rates entirely consistent with the Barangaroo Concept Plan.

It is important to note that the quantum of traffic generated by the residential uses is based on the total number of dwellings provided and is independent of the number of resident parking bays. The parking provision for residential uses responds to the level of car ownership expected.

Car ownership levels for residents of the Sydney Inner SLA have been steadily increasing over the past decade, rising from 0.81 cars/dwelling in 2001 to 0.87 cars/dwelling in 2011 as shown in the figure below. This is similar to the trends seen across much of Sydney, with cars becoming more affordable as tariffs fall with a larger stock of cheaper new cars and increasing household income.

The census data also shows that while car ownership has risen over the past decade, private vehicle use for journey to work trips has *decreased*. This indicates that car ownership does not necessarily lead to car usage in the busy commuter peak periods, for areas well served by public transport such as Barangaroo.





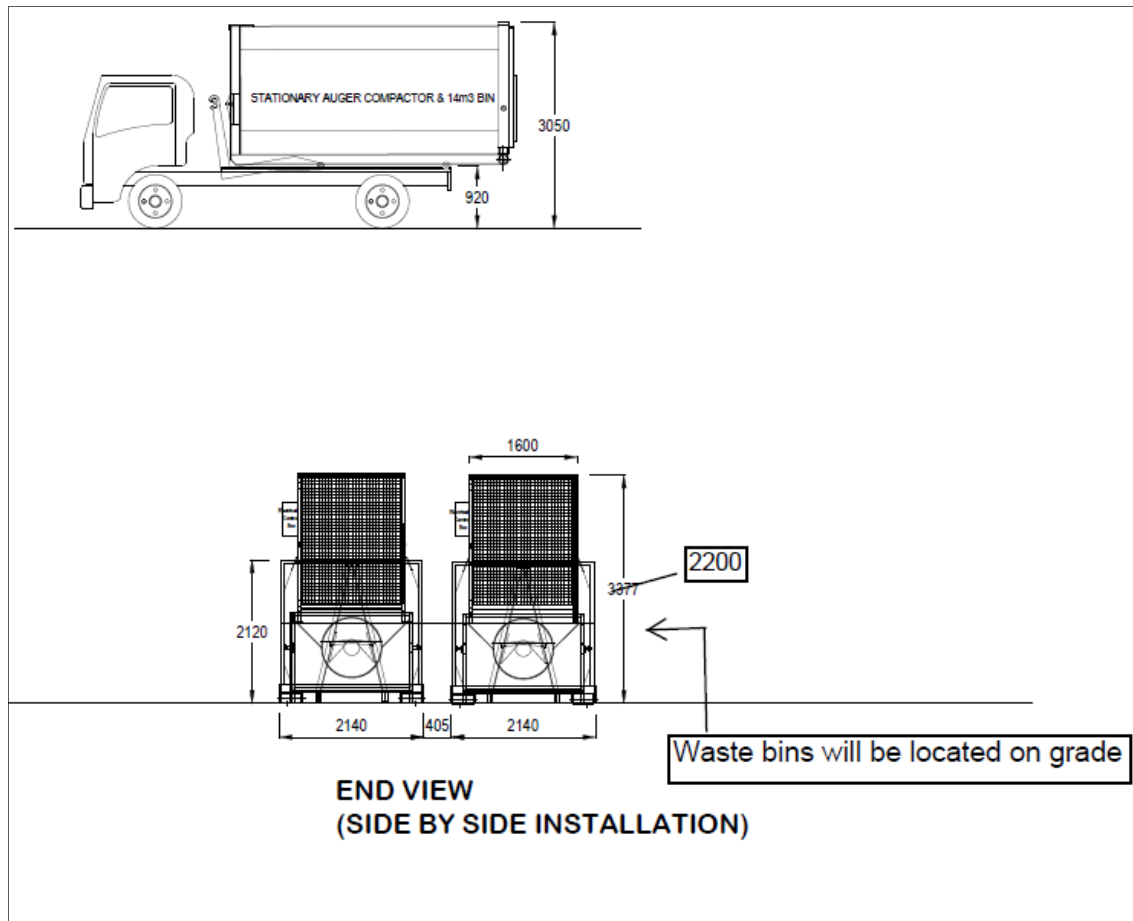
### 3.2 Commuter Parking

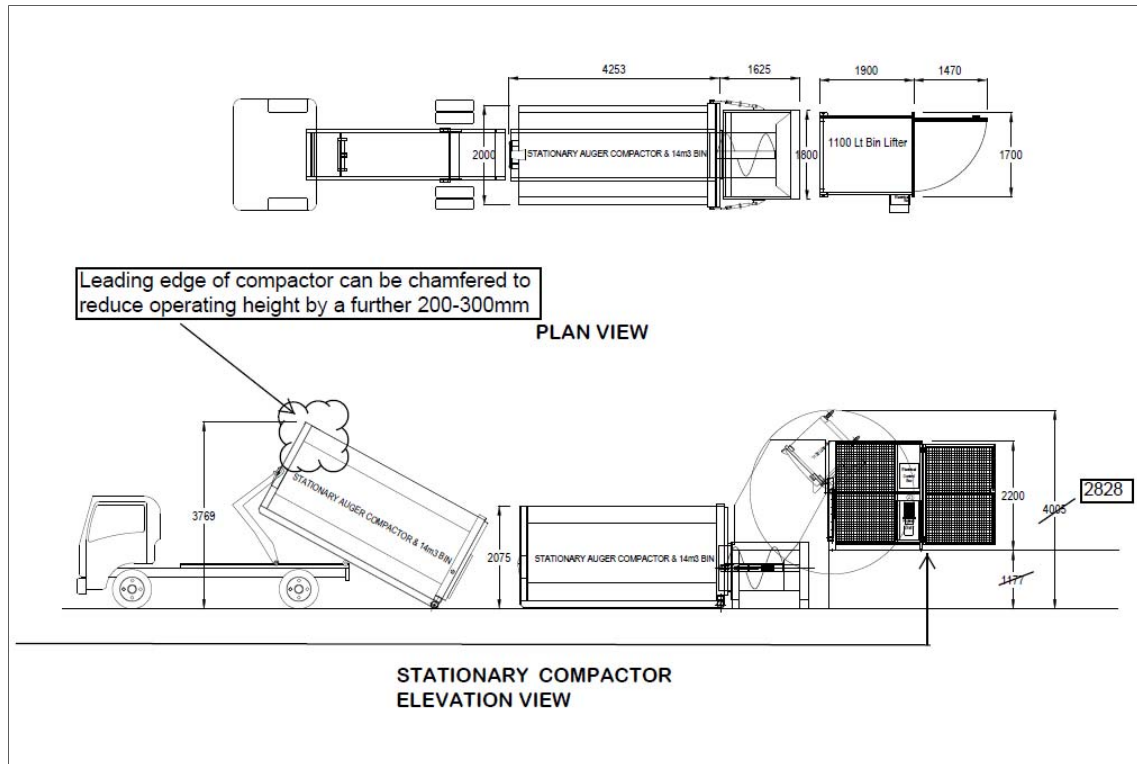
#### *Restrict the 500 public car parking spaces for commuter parking*

The operators of the car park will manage usage of the on-site parking spaces to ensure these are only used by hotel patrons and not commuters. It is not in the interests of Crown to allow their on-site parking spaces to be used by commuters

### 3.3 Loading dock design

A 3.6m clearance has been provided within the loading dock which provides sufficient clearance for Crown's preferred waste handling vehicle. Further details regarding this vehicle are indicated below.





## 4 RMS Comments

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### 4.1 EIS Comments

*Section 3.55 refers to a 2015 opening of Wynyard Walk. The public opening date for Wynyard Walk is 2016, although it is understood the bridge is likely to open in 2015. The tunnel will not be open until next year.*

Noted.

*Section 5.10.1 states that traffic generation as a result of the development are estimates to be 75 vehicles an hour during the AM peak period and 213 vehicles an hour during the PM peak period, both of which are considerable in a CBD environment, particularly one that is already under pressure from high demands. The impact of these movements will need to be carefully considered particularly in relation to intersection coordination, control and performance along Hickson Road and Sussex Street and the roads adjoining them.*

Noted.

*Section 5.10.2 and Table 21 refers to the impacts of the proposed development in comparison to the modelling undertaken in the 2008 TMAP for Barangaroo South. The logic of this relative comparison is understood. Confirmation of how impacts of other projects and developments have been considered that may not have been recognised in the 2008 TMAP and have subsequently evolved, such as the Sydney Metro, the new bus services plan, Walsh Bay redevelopment, SICEEP, CBD and South East Light Rail, One Carrington Street, Overseas Passenger Terminal growth in operations amongst other changes. Additionally, site remediation of Hickson Road is proposed to commence shortly and will impact on available street capacity.*

A cumulative traffic assessment has been undertaken which considers the operation of the road network following the development of Crown Sydney in conjunction with future developments in the Barangaroo precinct. This includes the full development of Barangaroo South, Barangaroo Central and Headland Park.

The remediation works along Hickson Road are scheduled to be completed prior to the opening of the Crown Sydney development.

***5.10.4 proposes that peak demand for parking of the proposal will make use of expected available parking in the basement car park on a Friday or Saturday evening. What mitigation will be implemented if the parking is not available as expected or does not meet the anticipated demands?***

It is expected that during peak demand periods when on-site parking is at capacity, Crown Sydney management will be on-site to direct patrons to nearby available car parking areas in the precinct. This is similar to the approach currently taken by The Star at Pyrmont where parking demand exceeds supply on Friday and Saturday evenings. The additional demand for parking during these peak periods is managed through the external supply of parking in the Darling Harbour precinct such as the Harbourside car park. Outside of these evening peaks, demand is considerably lower, and thus casino parking is largely contained on site. This results in an efficient allocation of parking across the Barangaroo precinct.

The level of parking demand will ultimately be constrained by the supply of parking in the precinct. Alternative transport modes such as bus, heavy rail and metro will be promoted to patrons.

***5.30.4 stipulates that traffic control at personnel controlled access points will be done so in accordance with Condition of Approval D4(c) of MP10\_0023. This condition refers to a maximum of no more than six vehicles being queued at an access point. The dynamics of the network and area have changed considerably since this condition was written and it is not considered to be an appropriate impact any longer, particularly with traffic lights and through connecting roads in place in an operational Barangaroo South development. Queuing should not generally be permitted in Hickson Road. Further, it will not be possible to queue vehicles in Hickson Road when site remediation of Hickson Road is being undertaken as per SSD14 6617.***

Noted. Where practicable, no truck queuing is to occur on Hickson Road.

## **4.2 Travel Demand Management Plan Comments**

***Section 2.4.4 needs to be updated to reflect the changes announced on 23 June 2015 for a metro station to be built at Barangaroo as part of the Sydney Metro project.***

This has been updated in the latest report revision

### 4.3 Transport Assessment Comments

***Section 3.2 refers to the impacts of the proposed development in comparison to the modelling undertaken in the 2008 TMAP for Barangaroo South. The logic of this relative comparison is understood. Confirmation of how impacts of other projects and developments have been considered that may not have been recognised in the 2008 TMAP and have subsequently evolved, such as the Sydney Metro, the new bus services plan, Walsh Bay redevelopment, SICEEP, CBD and South East Light Rail, One Carrington Street, Overseas Passenger Terminal growth in operations amongst other changes. Additionally, site remediation of Hickson Road is proposed to commence shortly and will impact on available street capacity.***

A cumulative traffic assessment has been undertaken which considers the operation of the road network following the development of Crown Sydney in conjunction with future developments in the Barangaroo precinct. This includes the full development of Barangaroo South, Barangaroo Central and Headland Park.

The remediation works along Hickson Road are scheduled to be completed prior to the opening of the Crown Sydney development.

### 4.4 Construction Traffic Management Plan Comments

***Section 2.3 and Table 1 of the report has a November 2011 and July 2013 traffic volume comparison and notes a reduction in flows. The cruise passenger terminal stopped operating at Barangaroo on 1 April 2013 and obviously would likely have had an impact on traffic flows being reduced. Given how much change has happened at the site and the area around it recently, the 2011 and 2013 comparison is not current and should be updated.***

Noted – comparison to 2011 traffic counts removed from updated report.

***Assessment or consideration of bus movements in the area that were recently announced by Government to service Barangaroo and Walsh Bay from 4 October 2015 do not appear to have been considered.***

Section 5.3 of the document has been updated to consider bus movements in the Barangaroo precinct.

***Traffic flow capacity along Hickson Road will need to be maintained to meet the prevailing demands, particularly with the activation of Barangaroo South and traffic light operations at the intersection of Sussex Street/Hickson Road/Napoleon Street. It is highly likely that new traffic lights will be operating in Hickson Road at other intersections in future and the Hickson Road remediation works will potentially impact capacity. The impacts of these will need to be considered to ensure that impacts on access and Hickson Road operations can be suitably managed.***

Noted. A cumulative traffic assessment has been undertaken which considers the impacts of the Crown Sydney construction project in the context of ongoing works within the Barangaroo and Wynyard precincts. This assessment concludes the Crown Sydney construction works will have a negligible impact on the operation of the road network compared to the current environment.

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Noted. Where practicable, no truck queuing is to occur on Hickson Road.

Should you have any further questions or require clarification, please do not hesitate to contact the undersigned.

Yours sincerely



Joshua Milston  
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