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# **Supplementary Transport Management and Accessibility Plan**

JMT Consulting



# **Barangaroo South Concept Plan**

*Supplementary TMAP*

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**JMT Consulting**

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## 1 Introduction

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### 1.1 Background

This report supports a Section 75W Modification to Concept Plan Approval MP06\_0162 (known as Modification 10) pursuant to clause 3C, Schedule 2 of *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* (Savings and Transitional Regulation).

### 1.2 Overview of proposed modification

Concept Plan (Mod 10) seeks to increase the height of the Building Envelope Plan for R4B to RL 235 and increase the GFA of Blocks 4A and 4B by a total of 8,000m<sup>2</sup>.

In order to support the above changes, the following modifications are proposed:

- increase the Concept Plan maximum GFA for Block 4A from 86,979m<sup>2</sup> to 92,629m<sup>2</sup> and the State Significant Precincts SEPP (SSP SEPP) Block 4A maximum GFA from 94,740m<sup>2</sup> to 100,390m<sup>2</sup>;
- increase the Concept Plan maximum GFA for Block 4B from 19,158m<sup>2</sup> to 21,508m<sup>2</sup> and the State Significant Precincts SEPP (SSP SEPP) Block 4B maximum GFA from 20,970m<sup>2</sup> to 23,320m<sup>2</sup>;
- increase the Concept Plan residential maximum GFA of Block 4A from 86,166m<sup>2</sup> to 91,816m<sup>2</sup>;
- increase the Concept Plan residential maximum GFA of Block 4B from 18,287m<sup>2</sup> to 20,637m<sup>2</sup>; and
- increase the Concept Plan maximum height on the Building Envelope Plan for R4B from RL 210 to RL 235, noting Block 4A currently provides for a maximum height of RL 250 under the SSP SEPP.

This Modification also seeks to amend the condition to align the time for delivery of Key Worker Housing at Barangaroo South and off site. This is to reflect that it will be completed prior to the issue of the occupation certificate for Building R5.

The changes described above necessitate modifications to the existing Instrument of Approval, Statement of Commitments and Barangaroo South Built Form Principles and Urban Design Controls for the Concept Plan as well as the relevant provisions of the State Significant Precinct SEPP.

The Mod 10 masterplan SEPP building envelopes and indicative building footprints are illustrated in Figure 1.

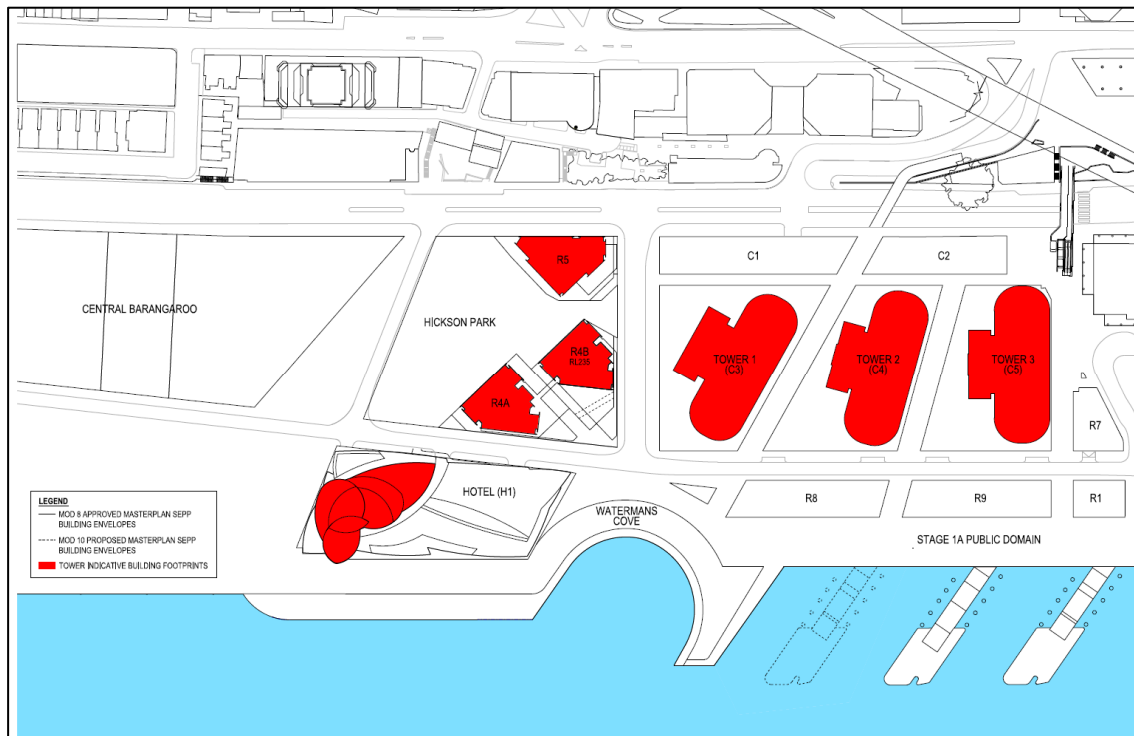


Figure 1 Mod 10 SEPP building envelopes and indicative footprints

### 1.3 Site Location

Barangaroo is located on the north western edge of Central Sydney, bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point (for the northern half), The Rocks and the Sydney Harbour Bridge approach to the east; and King Street Wharf to the south.

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Barangaroo Reserve, Central Barangaroo and Barangaroo South. Concept Plan (Mod 10) relates to Barangaroo South only.

## 1.4 Report purpose

This Supplementary Transport Management and Accessibility Plan (TMAP) is an amendment to the Transport Management and Accessibility Plan prepared to support Modification 8 of the Concept Plan in September 2015 (TMAP Mod 8)<sup>1</sup>. The Supplementary TMAP report addresses the changes that have come about as a result of the proposed floor space modifications as well as any changes to transport and accessibility to the Barangaroo precinct since the TMAP Mod 8 was developed.

The original TMAP for the Barangaroo site was prepared by the NSW Government in September 2008. This TMAP outlined rates for calculating population, parking and trip generation, as well as the target journey to work mode share target of only 4% trips by car were contained in this original document. All subsequent TMAP's supporting modifications to the Barangaroo Concept Plan have been underpinned by this original 2008 document.

The Supplementary TMAP report considers the following items in the context of that addressed in the TMAP Mod 8:

- Traffic generation and potential road network impacts
- Parking
- Site access
- Road network layout
- Public transport
- Pedestrian access
- Cycling access
- Coaches
- Taxis
- Late night transport

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<sup>1</sup> Barangaroo South Concept Plan (MP06\_0612 MOD8) - Transport Management and Accessibility Plan (Arup, 2 September 2015)

## 2 Assessment

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The following sections consider the changes in the planning and transport environment to the Barangaroo precinct since the development of the TMAP Mod 8 in September 2015.

### 2.1 Traffic generation and road network impacts

Key changes to the traffic generation assumptions since the development of the TMAP Mod 8 are as follows:

- Forecast bus numbers on Hickson Road in the TMAP Mod 8 were previously based on a strategy developed in 2008. There is now more certainty around the number of buses using Hickson Road following the introduction of three bus routes in October 2015. Currently 12 buses in each direction during the peak hour travel along Hickson Road. As a conservative assumption, it has been assumed there will be 18 buses an hour in each direction on Hickson Road in future, which is a 50% increase from the current situation. This is however significantly less than the predicted bus numbers assumed in the TMAP Mod 8.
- The TMAP Mod 8 adopted traffic generation rates for the residential component of the development of 0.14 and 0.09 in the AM and PM peak hours respectively. This was based on surveys of at similar residential developments in the CBD on Sussex Street and Kent Street. Since this time there has been an update to the RMS traffic generation rates guidelines (TDT 13/04a) as well as the introduction of a future metro station at Barangaroo. In this context it is therefore reasonable to revisit the assumptions around traffic generation rates for the residential component. Surveys undertaken by the RMS at a residential building in St Leonards, adjacent to the transport interchange, indicated a traffic generation rate of 0.10 and 0.07 trips / dwelling in the AM and PM peak hours respectively. With the location of Barangaroo adjacent to the Sydney CBD, it could be expected that the future generation rate would be even lower than compared to the site in St Leonards.
- The increase in residential floor space proposed under this modification would result in a small increase in traffic (approximately 10 vehicles) during peak hours compared to that previously assessed in the TMAP Mod 8



Despite the increase in traffic associated with the additional residential GFA, this will be significantly offset by a reduction in overall bus numbers on Hickson Road and traffic generation from residential uses due to the introduction of a metro station at Barangaroo. These changes are summarised in Table 1 and indicate a reduction in total traffic generation of 86 vehicles in the AM peak hour and 55 vehicles in the PM peak hour compared to that previously assessed under TMAP Mod 8. Therefore under the proposed modification the road network will operate at an improved level when compared to that previously assessed under TMAP Mod 8.

Table 1 Change in traffic generation – Mod 8 vs Mod 10

Item	Traffic Generation – AM Peak Hour			Traffic Generation – PM peak hour		
	Mod 8	Mod 10	Change	Mod 8	Mod 10	Change
Reduction in bus volumes on Hickson Road	66	36	-30	66	36	-30
Reduction in adopted traffic generation rate for residential uses	234	167	-67	151	117	-34
Increase in residential floor space for Concept Plan Mod 10	n/a	11	+11	n/a	9	+9
<b>Total</b>	<b>300</b>	<b>214</b>	<b>-86</b>	<b>217</b>	<b>162</b>	<b>-55</b>

## 2.2 Parking

No changes to the approved car parking rates are proposed as part of this concept plan modification. The parking numbers previously considered in the TMAP Mod 8 will generally be consistent with the proposed modification, except for a small increase associated with the additional 8,000m<sup>2</sup> residential GFA.

Whilst an additional 80-100 additional car spaces may be generated by the additional residential GFA, the final number is subject to the final dwelling mix to be adopted. The Stage 1B basement however can accommodate further spaces within its approved volume under the project approval SSD 6960. This will be subject to further detailed design and confirmation of the final residential dwelling mix.

## 2.3 Site access

Site access principles and the internal road network servicing Barangaroo South remain unchanged from that assessed in TMAP Mod 8.

Cars access the Stage 1A basement parking areas via vehicle ramps onto Watermans Quay and Barangaroo Avenue with a basement egress available onto Hickson Road opposite Napoleon Street. A single vehicular entry and exit points is proposed for cars utilising the Stage 1B basement, with access provided from Watermans Quay. The primary vehicle access route into the hotel will be via Hickson Road and Watermans Quay.

No changes are proposed to basement car park access points compared to that considered as part of the TMAP Mod 8. The vehicular access arrangements as illustrated in Figure 2 of the TMAP Mod 8 remain unchanged as part of this proposed modification.

The internal road network layout is presented in Figure 2 below.

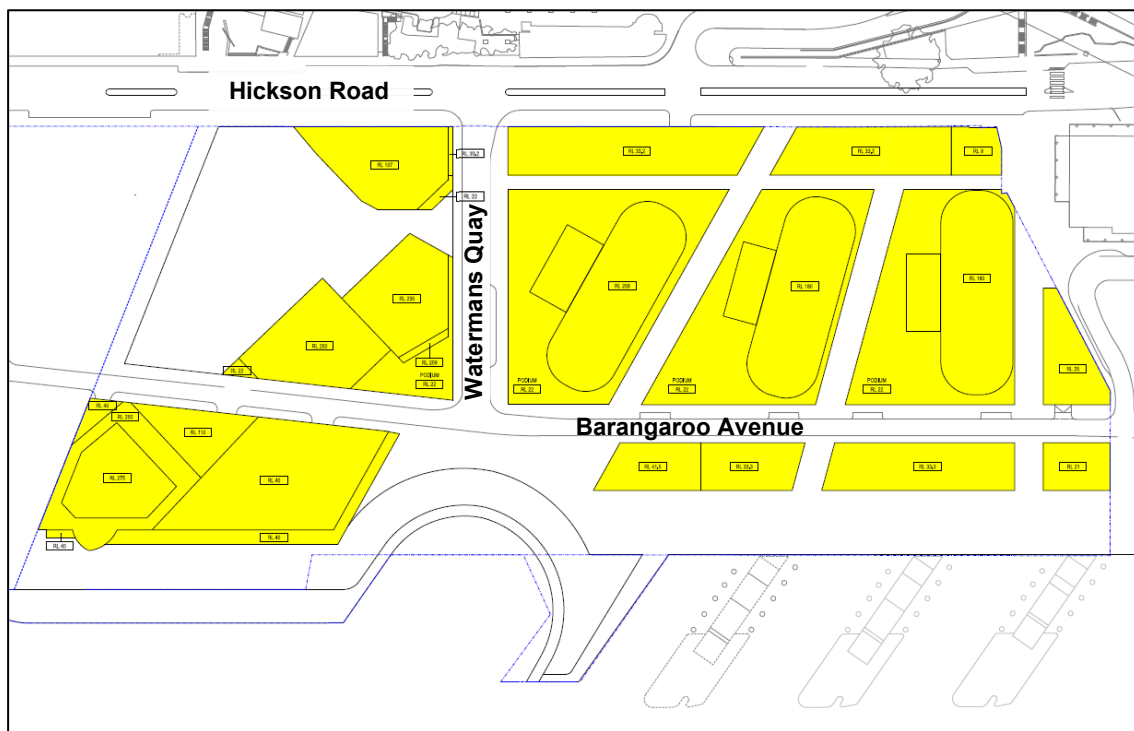


Figure 2 Internal Barangaroo road network

## 2.4 Public transport

### 2.4.1 Metro

In 2015 the NSW Government announced a new station would be constructed at Barangaroo as part of the Sydney Metro (City and Southwest) project. This metro station was not specifically considered in the traffic analysis undertaken to support the TMAP Mod 8. Two entry points to the metro station are planned within the Barangaroo precinct which will provide residents and workers of Barangaroo South with high capacity public transport services within a short walking distance of approximately five minutes (400m) from the future residential development within the Barangaroo Stage 1B precinct. Developments located anywhere within a five minute walk of a heavy rail / metro station are considered to have a high level of public transport accessibility and can be classified as 'transit oriented development'.

At full capacity, Sydney Metro services are expected to operate every two minutes in each direction under the Sydney CBD, providing for a capacity of more than 40,000 passengers per hour. It will provide future residents of Barangaroo a connection to key employment centres such as Central Station, North Sydney, St Leonards and Macquarie Park as shown in Figure 3

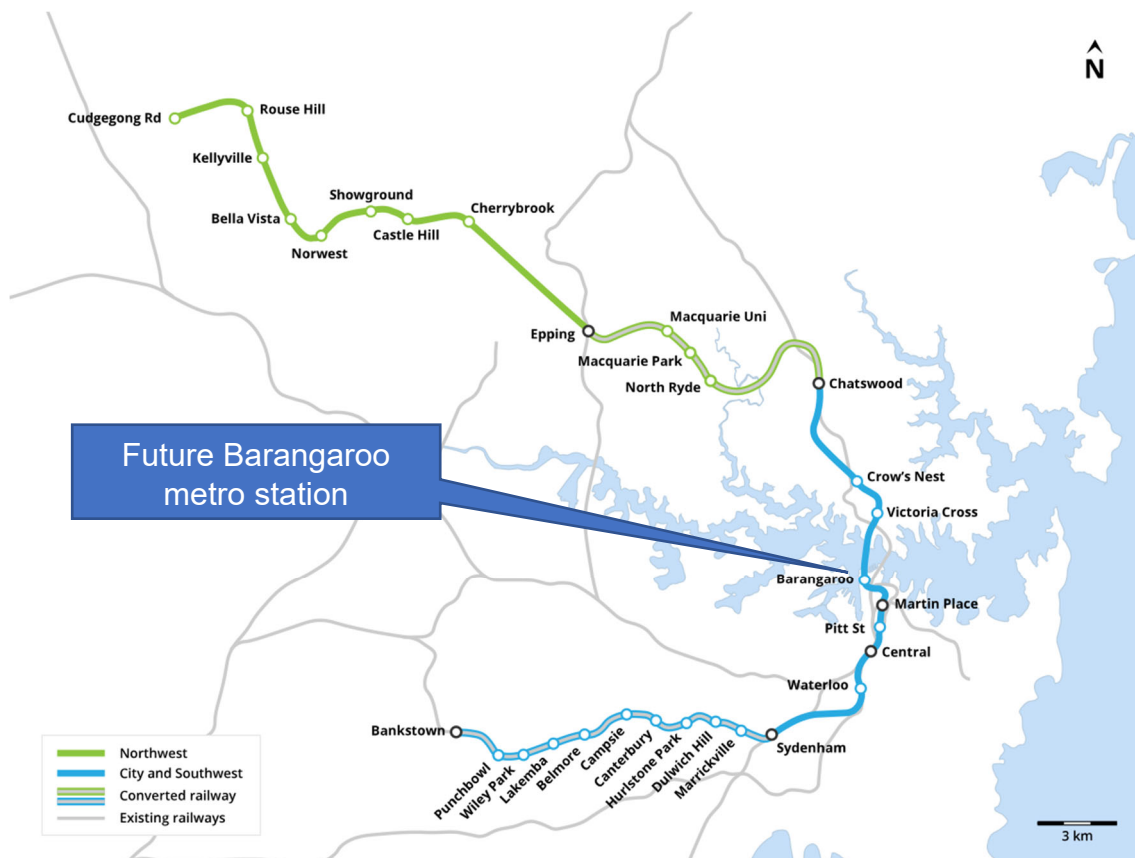


Figure 3 Sydney Metro network

The new metro at Barangaroo will also play a role in relieving existing capacity constraints at nearby CBD railway stations that are utilised by people travelling to / from Barangaroo, as demonstrated in Figure 4 below.

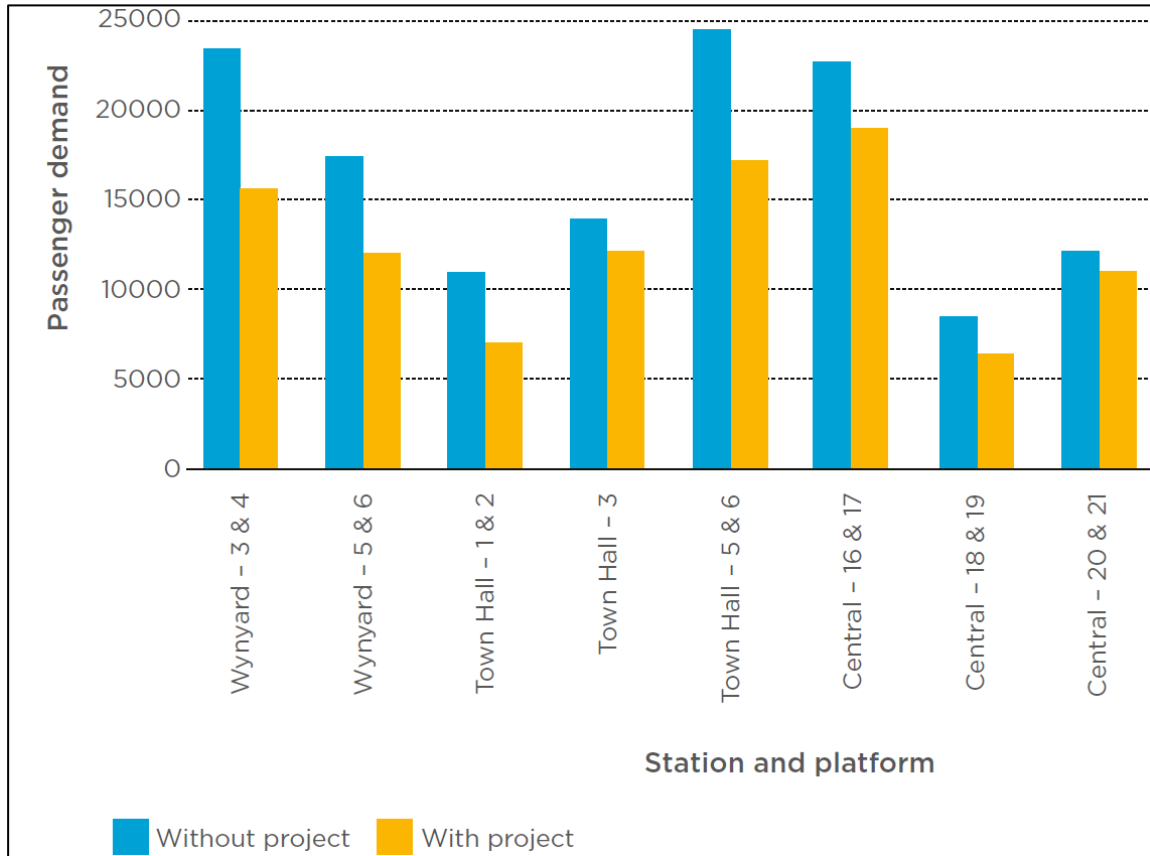


Figure 4 Decreased station crowding (AM peak one hour)

Source: Sydney Metro operational traffic and transport assessment (TfNSW)

Passenger demand forecasts prepared by Transport for NSW indicates that the Barangaroo metro station will act as a 'destination station' on the Sydney Metro network – with 900 customers entering the station and around 6,525 customers exiting station during the morning peak hour in 2036. Therefore the additional public transport trips associated with the 8,000m<sup>2</sup> increase in residential GFA proposed under Mod 10 of the Barangaroo Concept Plan could be accommodated at this station, given residents will be travelling in the 'counter-peak' direction.

Sydney Metro represents a significant enhancement to public transport capacity and accessibility since the Mod 8 transport assessment. It is expected to be opened in 2024.

### 2.4.2 Buses

No changes to bus routes or frequencies have taken place since the development of the TMAP Mod 8. Three bus routes continue to service the precinct, those being:

- Route 311
- Route 324
- Route 325

### 2.5 Pedestrian access

Access for pedestrians remains generally unchanged from that considered in the TMAP Mod 8. The one change that has occurred is the provision of a widened pedestrian pathway along the Barangaroo foreshore which connects Barangaroo South with Barangaroo Reserve and Central Barangaroo to the north and to Darling Harbour via King Street Wharf to the south.

High quality grade separated crossings will remain available via Wynyard Walk and Napoleon Bridges. Formal pedestrian crossings are also provided at the Hickson Road / Napoleon Street intersection, as well as the future signalised Hickson Road / Watermans Quay intersection.

### 2.6 Cycling access

There have been no changes to the cycling network (planned or under construction) in the Barangaroo precinct to that considered in the development of the TMAP Mod 8.

### 2.7 Coaches

The TMAP Mod 8 considered the following with respect to coach pick up / drop off:

- Space provided within the hotel for smaller (20 seater) coaches;
- Kerbside space to be provided on Hickson Road; and
- Kerbside space within the future Central Barangaroo precinct

These assumptions with respect to coach pick up and drop off remain unchanged as part of the proposed Concept Plan modification

## 2.8 Taxis

The TMAP Mod 8 prepared in 2015 considered the provision of taxi ranks at the following locations in the precinct:

- Western side of Sussex Street, opposite the Sussex Hotel;
- Northern side of Watermans Quay adjacent to Stage 1B development;
- Northern side of Shelley Street adjacent to Transport Place;
- Eastern side of Barangaroo Avenue opposite the T2 building; and
- Western side of Barangaroo Avenue near the future hotel.

Since this time taxi ranks have been introduced throughout the Barangaroo South precinct generally in line with that considered in the TMAP Mod 8. While minor changes to the location of some ranks has occurred, the number of taxi spaces available is generally equivalent to that considered as part of previous planning for the precinct.

No further changes to existing or planned taxi ranks are proposed as part of the proposed Concept Plan modification.

## 2.9 Late night transport

No substantive changes to the late night transport network have been made since the development of the TMAP Mod 8. Of most relevance is the introduction of a future metro station at Barangaroo – with these services expected to operate well into the night once operation begins in 2024.

### 3 Summary

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This report has been prepared in support of the amendment to the Barangaroo Concept Plan (MP06\_0162), and considers the implications of the modification on the supporting transport network. The modifications proposes to increase the total residential floor space in the Barangaroo South precinct by approximately 8,000m<sup>2</sup> GFA.

The transport assessment has concluded that the proposed modification will not result in any changes to the operation or function of the transport network compared to that previously considered as part of the most recent Concept Plan amendment (TMAP Mod 8). Despite the small increase in traffic associated with the additional residential GFA, this will be significantly offset by a reduction in overall bus numbers on Hickson Road and traffic generation from residential uses due to the introduction of a metro station at Barangaroo.

Public transport accessibility will be significantly improved to Barangaroo South compared to that considered in the TMAP Mod 8 with the introduction of a metro station in the future Central Barangaroo precinct.

The Concept Plan modification does not propose any changes to the existing or planned transport environment which would impact site access and circulation.

In the above context the proposed modification is not considered to result in any impacts on the transport network supporting the Barangaroo precinct.