

MIRVAC PROJECTS PTY LTD

TRAFFIC ASSESSMENT FOR  
NORTHERN ACCESS TO  
HOXTON PARK DEVELOPMENT

AUGUST 2010

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## I. INTRODUCTION

I.1 Colston Budd Hunt & Kafes Pty Ltd has been commissioned by Mirvac Projects Pty Ltd to address consent condition 8, Clause (b), point 2 of the Concept Plan Approval IO\_007 (as issued by the Department of Planning) for the Hoxton Park Development. The site location is shown on Figure I. We previously prepared a transport report <sup>(1)</sup> in support of the Part 3A application.

I.2 The condition being addressed by this report is as follows:-

- “8. *The Proponent shall provide detailed plans for a second access to the site off Cowpasture Road, to the satisfaction of the Director-General. The plans must be submitted within 4 months of the date of concept plan approval and include:*
- (a) details of consultation with RTA, Council, DECCW, NOW and other relevant government agencies, and RTA’s and Council’s in principle support of the design of the access;*
  - (b) detailed description and design of the access, demonstrating that:*
    - the design is compliant with relevant RTA and Council standards and specifications including the RTA Road Design Guide, AUSTRROADS Pavement Design Guide, and the latest version of the Australian Standard AS5100; and*
    - the existing and the new intersection with Cowpasture Road will operate at an appropriate level of service once the Lens Water Industrial Estate and Elizabeth Hills residential area is fully developed:*
  - (c) .....*
  - (i) .....”*

I.3 The following chapter sets down the findings of our traffic assessment of the operation of the development access intersections.

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<sup>(1)</sup> “Transport Report for Proposed Distribution Centre and Warehouse Development at Hoxton Park” February 2010.

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## **2. OPERATION OF DEVELOPMENT ACCESS INTERSECTIONS**

2.1 The approved Hoxton Park development will be accessed from Cowpasture Road by southern and northern access roads. The southern access has an approved signalised intersection layout and is currently under construction.

2.2 The concept layout of the northern access intersection with Cowpasture Road is shown on Figure 2. The layout of the intersection includes:

- Cowpasture Road
  - southern approach, two through lanes and right turn lane;
  - northern approach, two through lanes plus left turn lane.
- Northern Access Road
  - eastern approach, two right turn lanes plus left turn lane.

2.3 The operation of the proposed northern access intersection has been assessed using the SIDRA program for future traffic flows in the year 2026. Flows along Cowpasture Road have been based on EMME forecast morning and afternoon traffic flows provided by the RTA.

2.4 These flows included traffic generated by the Hoxton Park development and other development including full development of the Lens Water Industrial Estate and Elizabeth Hills residential area.

2.5 Our previous February 2010 transport report estimated the traffic generation of the Hoxton Park development. The traffic flows through the two access intersections for the year 2026 are shown on Figure 3. We have been

conservative and have added the Hoxton Park generation on top of the RTA flows along Copwasture Road.

2.6 Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):

- For traffic signals, the average delay per vehicle in seconds is calculated as  $\text{delay}/(\text{all vehicles})$ , for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode.
>70	=	"F"	Unsatisfactory and requires additional capacity

- For roundabouts, give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required

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57 to 70	=	"E"	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

- 2.7 It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.
- 2.8 The SIDRA analysis found that the northern access intersection would operate in the year 2026 with average delays of less than 20 seconds per vehicle during both the morning and afternoon peak periods. This represents level of service B, which is a good level of service with minimum delays and spare capacity.
- 2.9 With regard to queue lengths, the 95 percentile back of queue along Cowpasture Road would be some 140 to 220 metres in both directions. Adjacent signalised intersections are more than 500 metres from the northern access road. The 95 percentile queue along the northern access road would be some 35 metres. The bridge is some 70 metres from the intersection. Traffic queues would therefore not extend back into adjacent signalised intersections or the bridge.
- 2.10 The SIDRA analysis found that the southern access would operate in the year 2026 with average delays of less than 20 seconds per vehicle during both the morning and afternoon peak periods. This represents level of service B, which is a good level of service with minimum delays and spare capacity.
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- 2.11 With regards to queue lengths, the 95 percentile back of queue along Cowpasture Road will be some 110 to 150 metres in both directions. Adjacent signalised intersections are more than 160 metres from the southern access road. The 95 percentile queue along the southern access road would be some 140 metres. Therefore queuing would not extend back into adjacent signalised intersections.

Consultation with Authorities

- 2.12 Meetings have been held with RTA and Council regarding the layout and operation of the access intersections. We understand that the RTA and Council agree in principle to the proposed layout of the signalised northern access intersection with Cowpasture Road. In an email dated 30 July 2010, the RTA has advised the following:

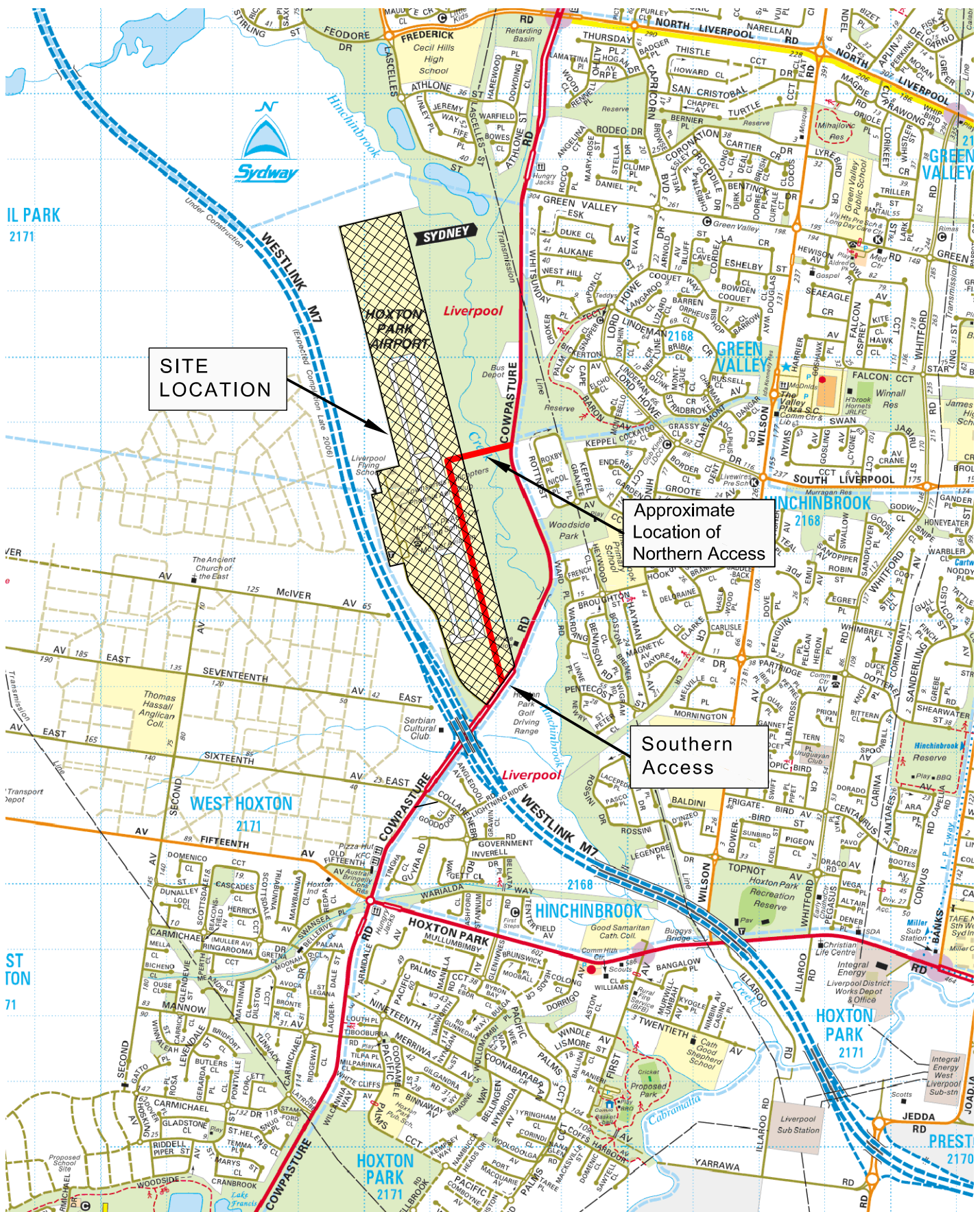
*"I have checked the preliminary plans (150133 SK 010 B) showing a concept layout of a proposed new intersection with Cowpasture Rd from the Hoxton Park Airport redevelopment & agreement in principle is given to the plans. Once detailed plans have been developed including the signalisation of the intersection with Cowpasture Rd they will need to be forwarded to the RTA marked to the attention of James Hall who will arrange for their approval subject to you entering into a Works Authorisation Deed with the RTA & meeting all costs associated with their installation."*

Summary

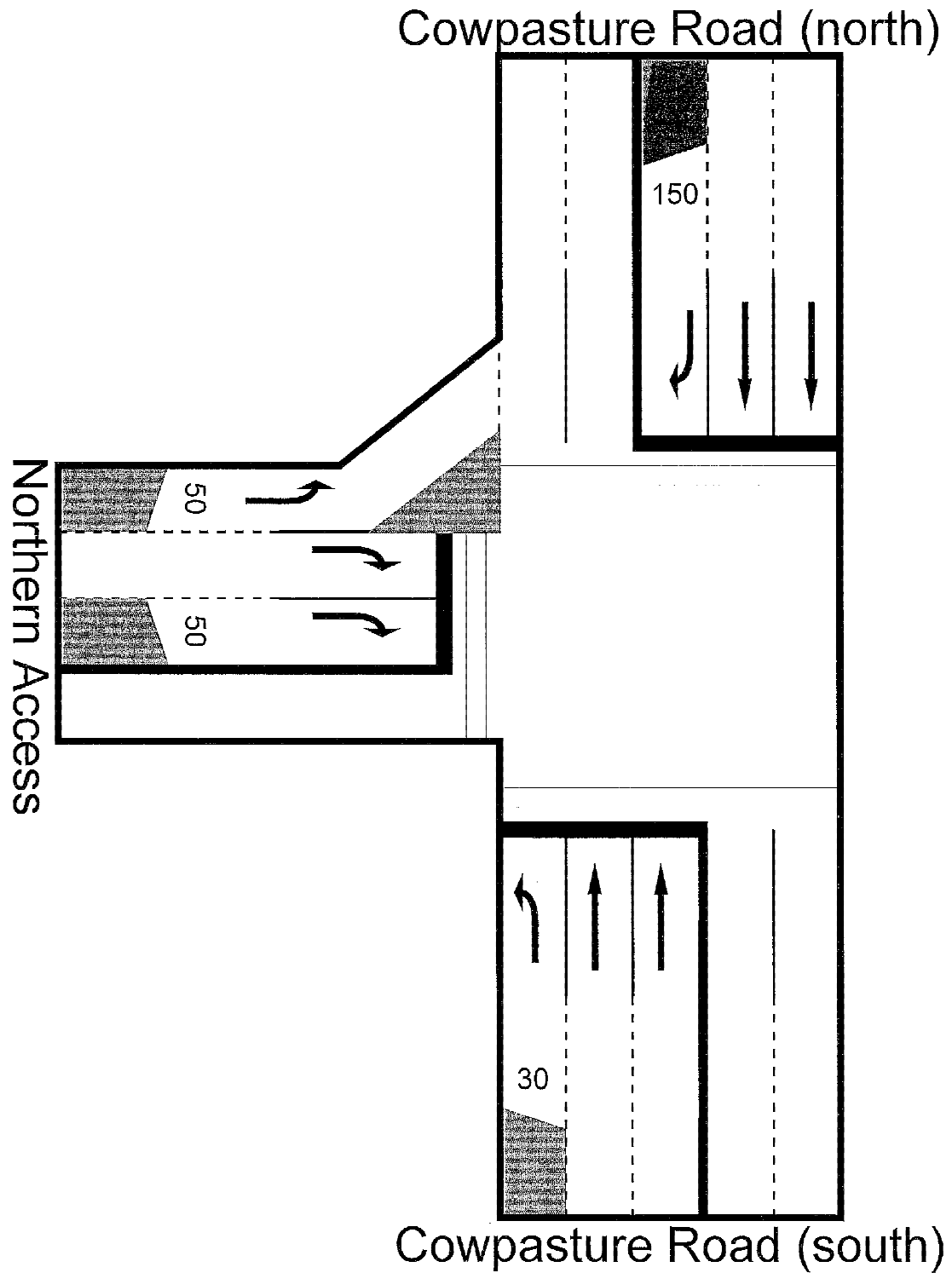
- 2.13 This report has addressed Condition 8, Clause (b), point 2, as follows:-
- i) with regards to point (a), consultation has been held with RTA and Council. We understand that they agree in principle to the proposed layout of the northern access intersection;
  - ii) other team members have held consultation with the other authorities;
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- iii) with regards to point (b), first dot point, ADW Johnson are addressing design standards and specifications;
- iv) with regards to point (b), second dot point, the two access intersections with Cowpasture Road will operate at satisfactory levels of service, including full development of the Len Waters Industrial Estate and Elizabeth Hills residential area;
- v) as qualified traffic engineers we are in support of the Mirvac Proposal.

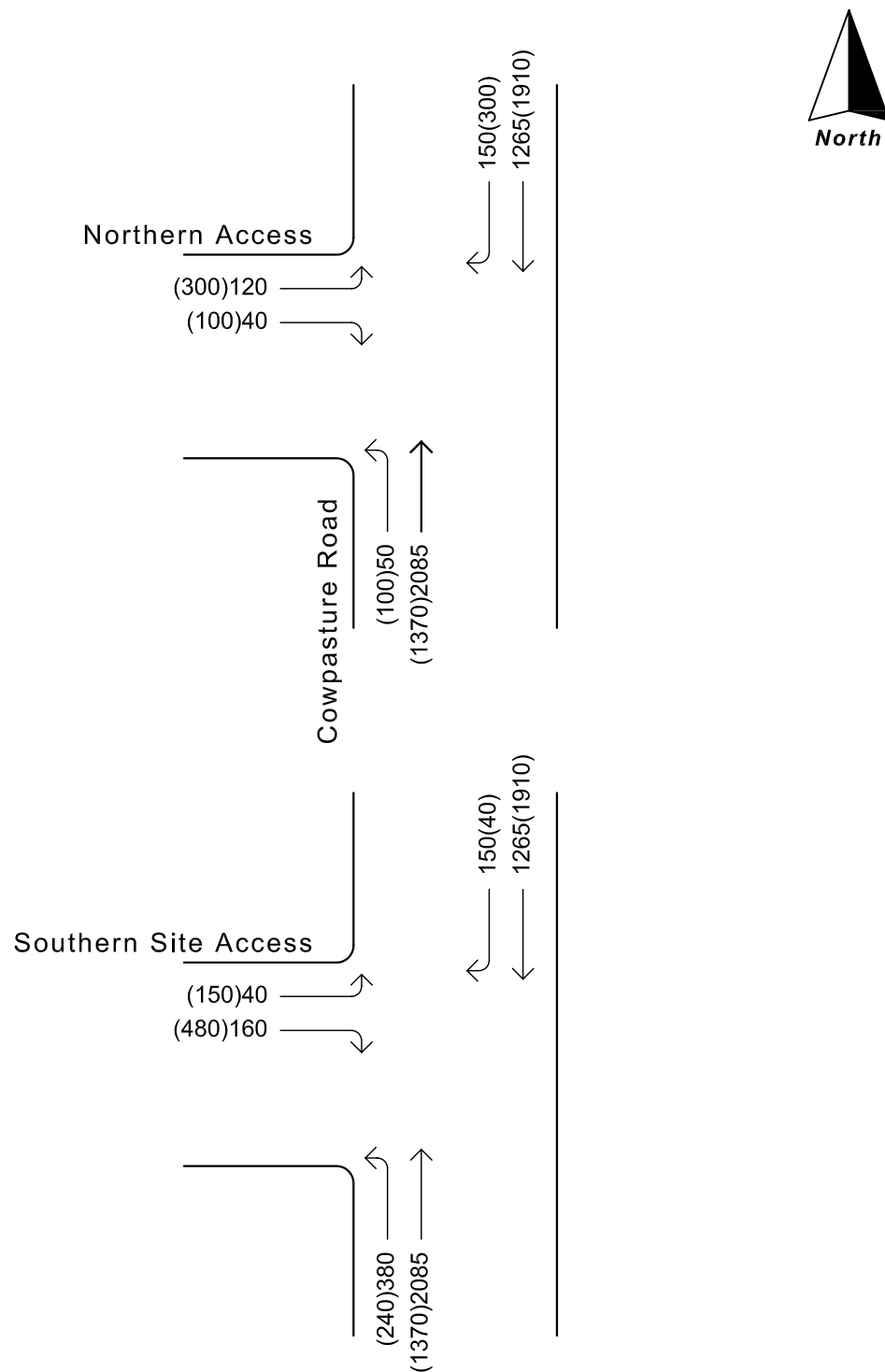




## Location Plan



Intersection Layout



**Morning and afternoon 2026  
development peak hour traffic flows**