Land South and East of Adastral Park, Ipswich
Technical Note : Response to Highways England (HE) 'Request for Information' on conference call dated 15th November 2017
(DC/17/1435/OUT)

28th November 2017

Introduction

Brookbanks Consulting Limited (BCL) are commissioned by Carlyle Land Ltd and Commercial Estates Group (herein referred to as the Applicant) to provide technical advice on delivery of the proposed residential development on land south and east of Adastral Park.

A conference call was arranged for 15th November 2017 for Highways England to provide a request for further technical information in order to provide the Planning Authority, Suffolk Coastal District Council (SCDC), with their formal and final consultation response. The call was attended by representatives of Highways England, SCDC, AECOM, Suffolk County Council, WSP, Vectos and Brookbanks.

The purpose of this technical note is to provide a response to the requests for information made by Highways England. It is noted that this comprises three separate requests, presented below:

1. Updated Link Flow Diagrams for the A14 road corridor between Junctions 55 and 60.
2. Updated Merge/Diverge Assessment for the A14, Junction 58 'Seven Hills' slip roads.
3. Alternative Traffic Modelling Results for a HE defined 2027 Year Sensitivity Test.

1 Highways England Requests for Information

UPDATED LINK FLOW DIAGRAMS FOR THE A14 ROAD CORRIDOR (J55 to J60)

1.1 The updated link flow diagrams are appended to this note. Please note that the link flows adhere to the traffic modelling scenario contained within Brookbanks Transport Assessment rev 6, though with a sensitivity test applied for 0% internalisation and 10% travel plan. For further details of this sensitivity test, please refer to Brookbanks Technical Note 44.

UPDATED MERGE/DIVERGE ASSESSMENT FOR THE A14 J58 SLIP ROADS

1.2 The updated assessment is appended to this note, and the following commentary is made in support of the conclusions:

- The turning flows have been extracted from the latest Do Something network (from TA rev 6, as above) inclusive of the 0% Internalisation, 10% Travel Plan demands (as per Technical Note 44 above). The mainline flows are from both the Highways England TRADS database and the 2nd November 2016 flows as this was the day the survey of the A12/A14 junction was conducted. These flows were also the highest figures experienced. These baseline figures were factored by the External TEMPRO factor used in the creation of the 2027 DS demands i.e. AM: 1.1061 and PM: 1.1076 to get the future year reference flows on the mainline.

- The flows including the development have been assessed, but as a sensitivity analysis, the development only flows have been provided separately and is concluded that they are so low as to have no impact on the junction form.

- Both the Eastbound and Westbound merges denote a requirement for a Type E Lane Gain junction. The Westbound On-slip does require a two-lane slip road. This is required with or without the additional flows from the development (max. 61VPH).

- Both the Eastbound and Westbound Diverges denote a requirement for a Lane Drop junction form with a two-lane slip road on the Eastbound off slip.

- In conclusion, the updated merge/diverge assessment demonstrates that the proposed improvement at the A14 J58 Roundabout, proposed in Brookbanks TA rev 5, remains current and correct. The improvement plan is therefore provided, unaltered, in Brookbanks TA rev 6.

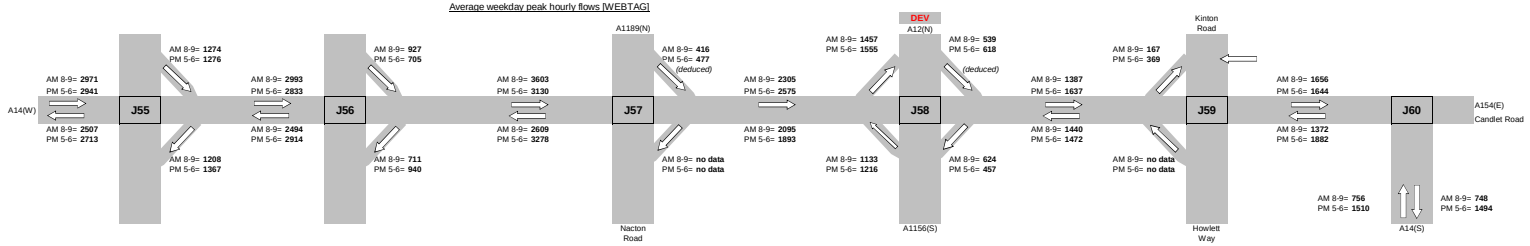
ALTERNATIVE TRAFFIC MODELLING RESULTS FOR A HE DEFINED 2027 YEAR SENSITIVITY TEST

1.3 Highways England have requested that the applicant provides a future year traffic modelling scenario. HE seek to review a model which zeros out the proposed development demands from the demand matrices in the Development forecast scenario (the scenario presented in Brookbanks TA rev 6). In doing so, the HE Test would benefit from significantly reduced background demand (as the local plan assumptions have been discounted to remove this developments dwellings/jobs opportunities) but it wouldn't be matched by the inclusion of the development demands. In summary, it is a test that would exist if the development was granted permission, fully built by 2027, but generated zero demands. It assumes that the growth will come from the development (so not from elsewhere, or not in the general unallocated background growth). This test would also not include the mitigation measures proposed by this development on the A12/A14 road corridors.

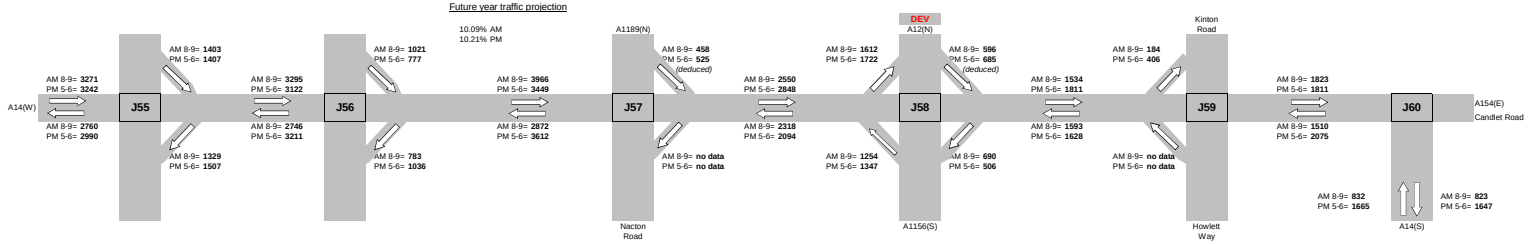
1.4 The request for this model test has been accepted, and is provided to Highways England under separate cover, being an electronic submission of the traffic modelling spreadsheets.

1.5 The results of the spreadsheet for this model test have been reviewed by Brookbanks. It has been judged that despite the significantly lower demands than in the TA rev 6 2027 Reference and Do Something scenarios, it clearly highlights that the proposed development highway improvement schemes significantly improve the network operation and generously mitigate the development traffic (even once development traffic is simply added on top).

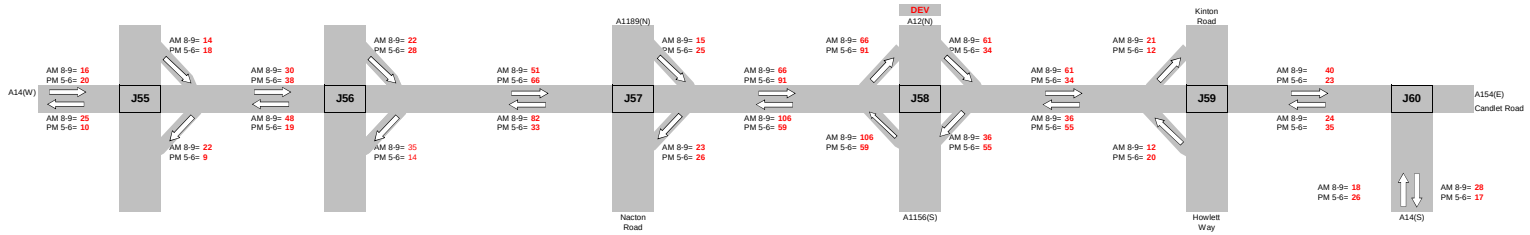
Average weekday peak hourly flows [WEBTAG]



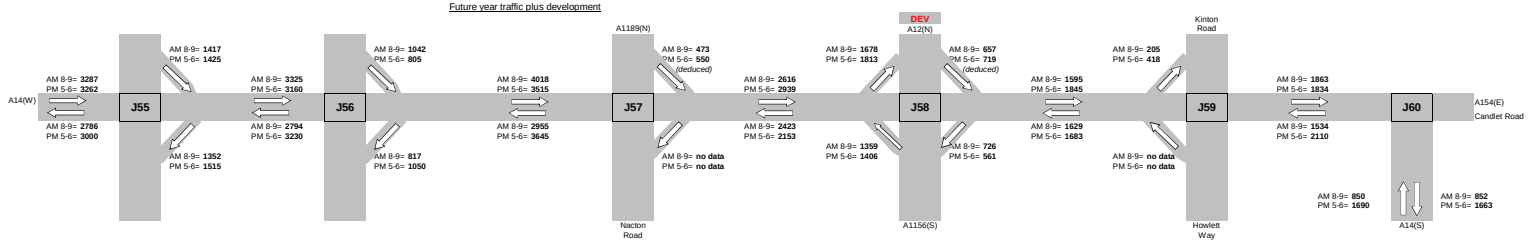
Future year traffic projection



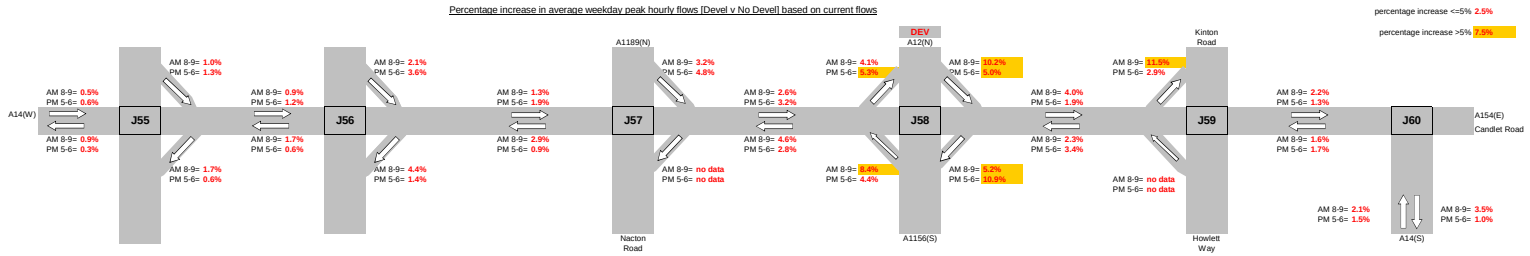
Forecast Development average weekday peak hourly flows [TA Table 8l & 2011 Census Distribution]



Future year traffic plus development



Percentage increase in average weekday peak hourly flows [Devel v No Devel] based on current flows



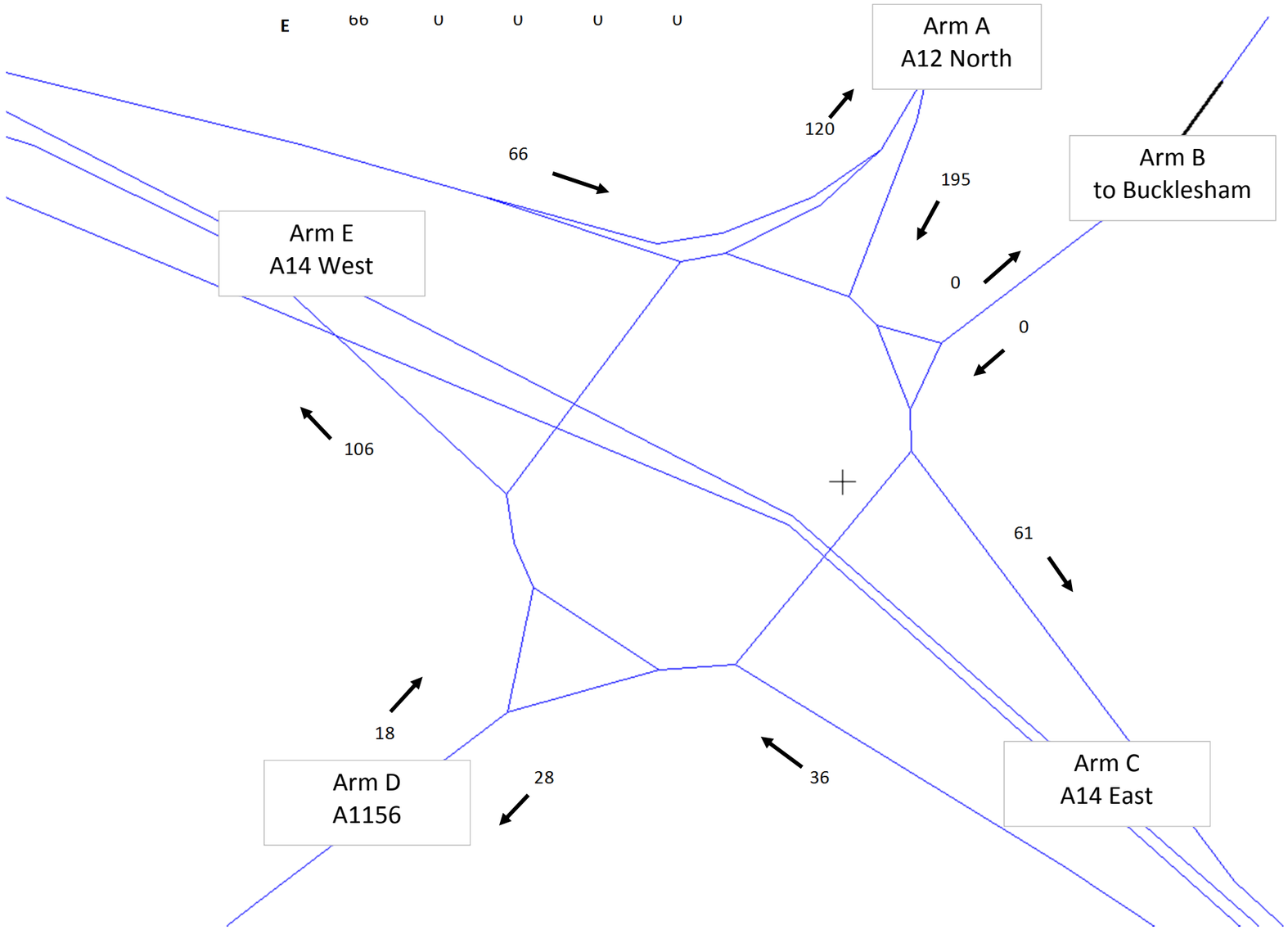
2027 A12/A14 Modelled Flows (veh nos)

Select:

Vehicle Class: Dev Only Dev

Period: 08-09:00 0.333333 AM

	A	B	C	D	E
A	0	0	61	28	106
B	0	0	0	0	0
C	36	0	0	0	0
D	18	0	0	0	0
E	66	0	0	0	0



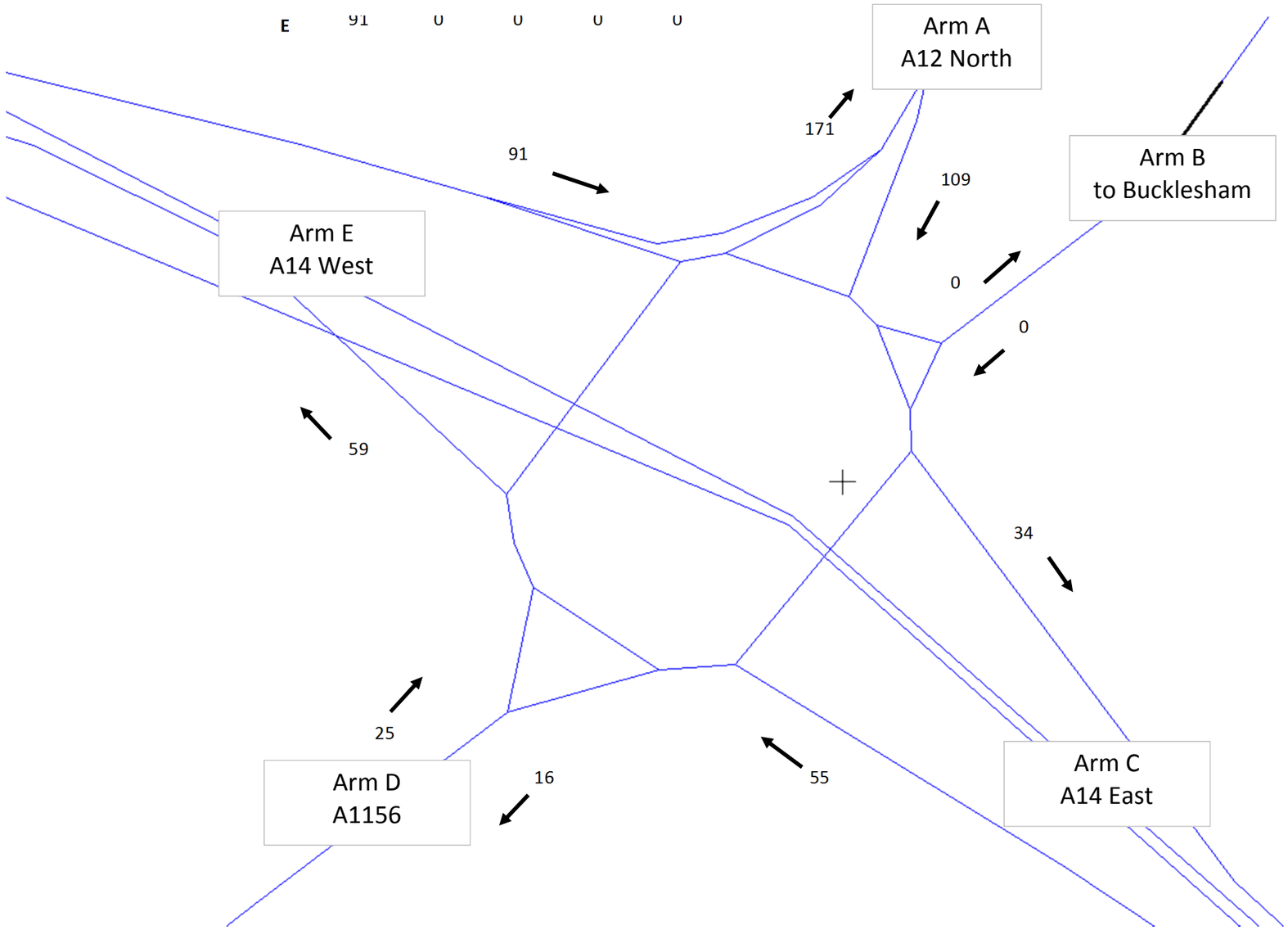
2027 A12/A14 Modelled Flows (veh nos)

Select:

Vehicle Class: Dev Only Dev

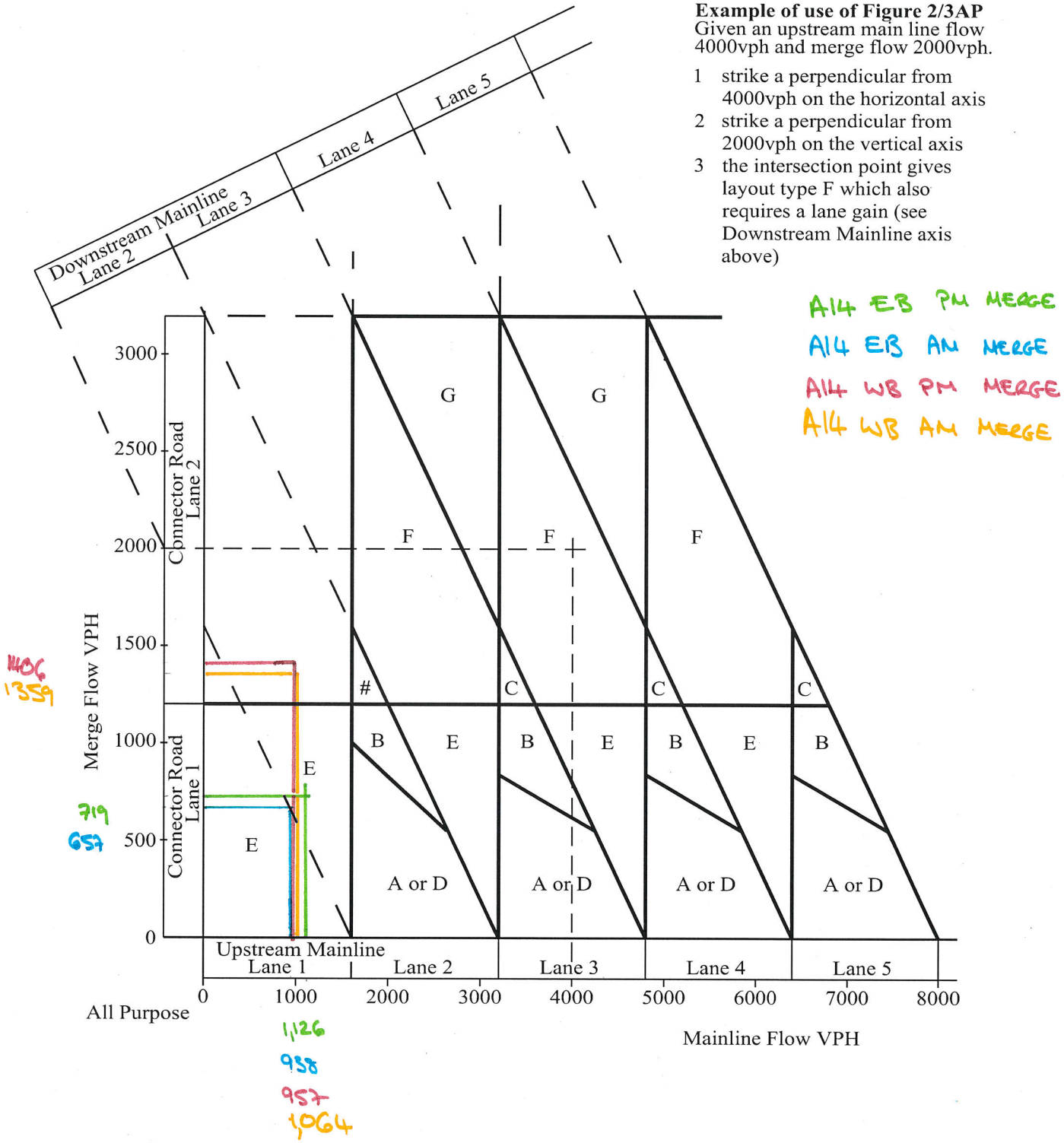
Period: 17-18:00 0.708333 PM

	A	B	C	D	E
A	0	0	34	16	59
B	0	0	0	0	0
C	55	0	0	0	0
D	25	0	0	0	0
E	91	0	0	0	0



Example of use of Figure 2/3AP
Given an upstream main line flow 4000vph and merge flow 2000vph.

1 strike a perpendicular from 4000vph on the horizontal axis
2 strike a perpendicular from 2000vph on the vertical axis
3 the intersection point gives layout type F which also requires a lane gain (see Downstream Mainline axis above)



Notes:

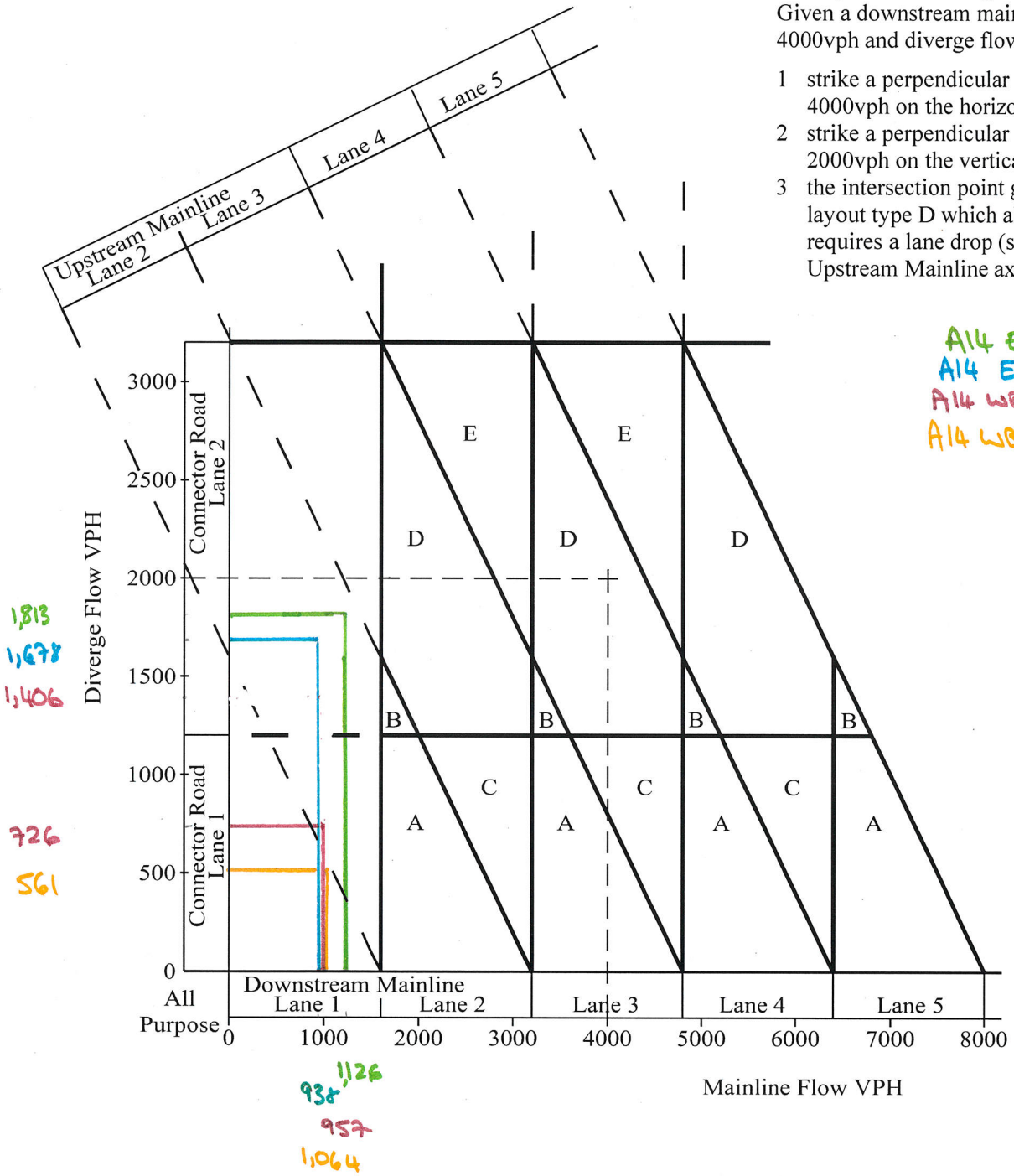
\# Area of uncertainty – In this area the choice will depend on the downstream provision. If there is a lane gain then use Layout E or F.

See paragraph 2.29 and the example above, for explanation of the usage of this diagram.

Figure 2/3 AP All-Purpose Road Merging Diagram

Example of use of Figure 2/5AP
Given a downstream main line flow 4000vph and diverge flow 2000vph.

1 strike a perpendicular from 4000vph on the horizontal axis
2 strike a perpendicular from 2000vph on the vertical axis
3 the intersection point gives layout type D which also requires a lane drop (see Upstream Mainline axis above)



A14 EB PM DIVERGE
A14 EB AM DIVERGE
A14 WB PM DIVERGE
A14 WB AM DIVERGE

1,813
1,678
1,406
726
561
1,126
938
957
1,064

Notes:

See paragraph 2.43 and the example above, for explanation of the usage of this diagram.

Figure 2/5 AP All-Purpose Road Diverging Diagram