

BTF2018049H Huntlee Mod 8 RMS Response 040817 L01.docx

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Dear Glenn,

**RE: WINE COUNTRY DRIVE (B82): NOTIFICATION OF MOD8 TO STAGE 1 PROJECT APPROVAL FOR HUNTLEE NEW TOWN, WINE COUNTRY DRIVE, BRANXTON (MP 10\_0137 MOD 8)**

Further to your instructions we have reviewed the correspondence issued to the NSW Department of Planning & Environment by NSW Roads and Maritime Services (RMS) on 21 June 2017. Our response and supporting material are attached to this letter, and included in additional electronic files. Below is a summary of the response issues.

**A. Summary of Issues:**

1. Distribution and Assignment of Trips – the RMS queries presented the opportunity to review the April 2017 threshold analysis for intersection [A-1] Wine Country Drive / HEX Link Rd / Bridge Street. This highlighted the following:
  - a. A review from 1<sup>st</sup> principles utilising the same assignment and distribution functions documented in the BTF April Design Note confirmed that the 900 residential lots and town centre trips combined were at lower flows than those applied in the accompanying SIDRA model files.
  - b. The electronic SIDRA files presented with the April Threshold Analysis included traffic flows in excess of the combined 900 residential lots and town centre trips under consideration. The additional trips were assigned primarily to the westbound (PM) Hex Link Road approach to the roundabout, as an added test on the capacity limit on this critical approach to the runabout at PM peak times.
  - c. Additional SIDRA runs reflecting the flow levels representing the 900 residential lots and town centre trips have been completed. These confirm (as would be expected) an even higher level of service (B) than previously noted.
2. Diagrammatic representation of forecast traffic flows – the sequence of diagrams (hand drawn) that represent the distributions and assignments at the intersections are attached. The basis of determining the town centre distribution of traffic flows was documented in the April 2017 Design Note.
3. All access points noted by the RMS will be completed prior to any opening of activity in the Town Centre. The works covered by the Wine Country Drive Stage 2 WAD are already under construction and expected to be completed prior to Christmas 2017.
4. The roundabout diameter assumed in the April 2017 calculations was 40 metres. A subsequent review confirmed a diameter of around 47 metres. The RMS premise that this will improve the modelling results is correct, but immaterial in terms of the recommendation for a 900 lot threshold for the upgrade to a two (2) lane roundabout.

**B. Conclusion:**

Our conclusion on this matter remains unchanged – that a 900 residential lot threshold is more appropriate than the current requirement for immediate construction of the upgrade to a two (2) lane roundabout. In fact the review indicates that the April 2017 analysis by BTF was conservative in that it applied additional traffic flows beyond the combined 900 residential lots and town centre trips under consideration.

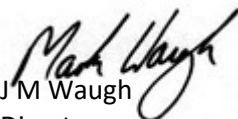
The added conclusion from these review observations is that one of either additional residential lots or additional town centre activity could also be accommodated before the two lane upgrade for the roundabout would be required.

It is BTF's understanding at this time that Huntlee Pty Ltd is seeking only to gain approval for the 900 lot threshold as originally sought.

**C. Further Information**

We hope this information assists in clarifying the issues raised by NSW RMS. If further information or clarification is required, I would recommend meeting with an RMS technical officer to run through the full array of assumptions, analysis, and testing, in order to avoid further delay. Please let me know if this will be of assistance to you in the approval process.

Yours sincerely

  
J M Waugh  
Director

Attachments:

A - Technical Response to NSW RMS Correspondence to NSW Department of Planning & Environment Dated - 21 June 2017

B - Flow Diagrams (Hand Drawn 26 Jul 17)

C - Updated SIDRA Modelling (Separate Electronic File)

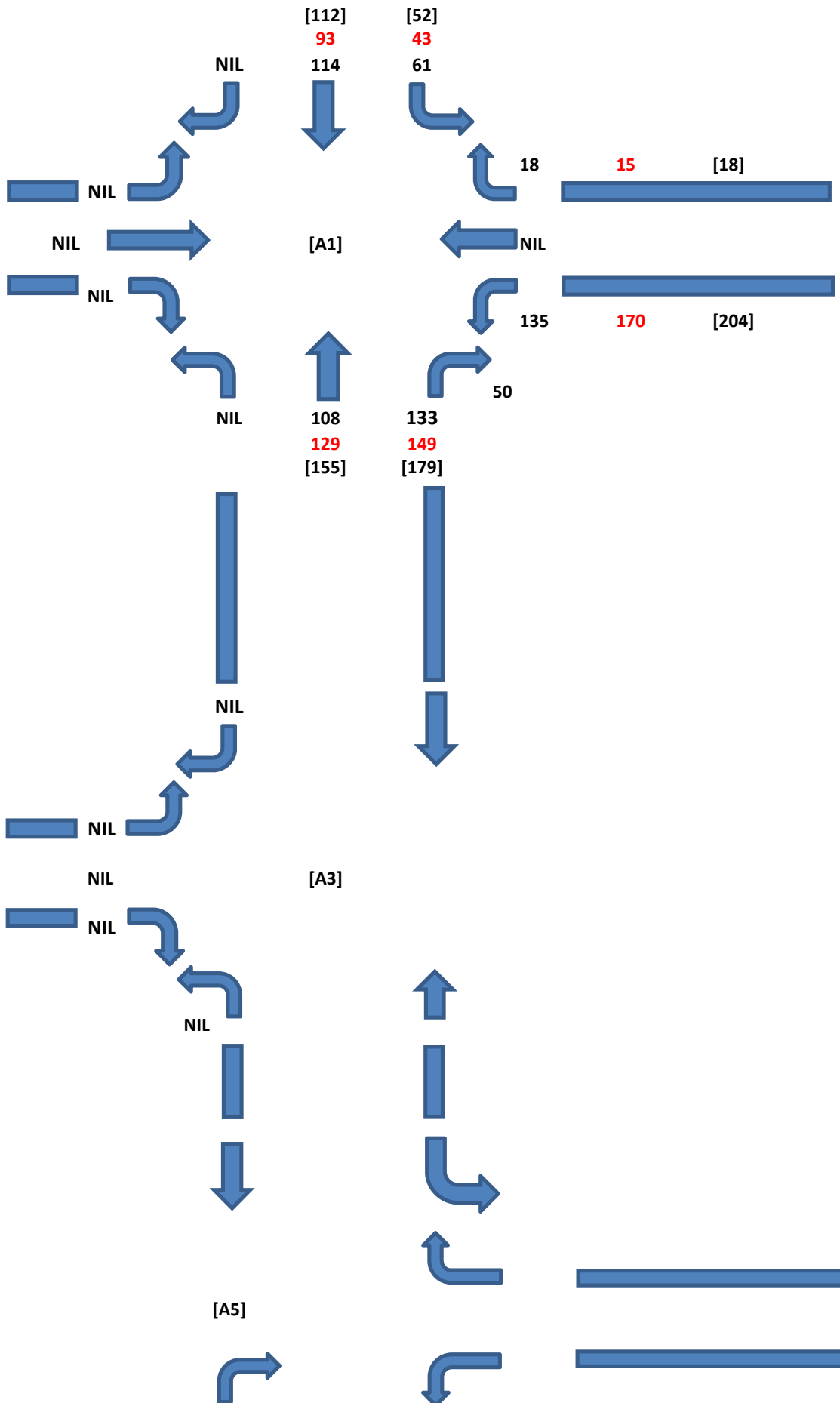
Attachment A – Technical Response to NSW RMS Correspondence to NSW Department of Planning & Environment Dated - 21 June 2017

#	Description	Who:	RESULT	Date
	<p><b>Source: RMS Correspondence:</b> CR2017/002036 SF2016/062114 MJD</p> <p><b>WINE COUNTRY DRIVE (B82): NOTIFICATION OF MOD8 TO STAGE 1 PROJECT APPROVAL FOR HUNTLEE NEW TOWN, WINE COUNTRY DRIVE, BRANXTON (MP 10_0137 MOD 8)</b></p> <p><b>Date: 21 June 2017</b></p>		<p>The modification seeks to amend the upgrade threshold for the [A-1] roundabout controlled intersection from one lane to two lane operation. Intersection of Wine Country Drive / Bridge Street / HEX Link Road / Huntlee Town Centre Northern Access.</p> <p>Modification sought is for an increase in the threshold level from 500 lots to 900 residential lots.</p> <p>Noting the recent approved modification of the [A-5] intersection from 500 lots to 725 lots has been approved.</p> <p><b>CONCLUSION: REMAINS that 1 lane roundabout will operate at satisfactory Level of Service for 900 lots + initial Town centre activity, and beyond.</b></p>	26/07/17
1	<p><i>Provide the distribution of trips associated with the developments (plus existing traffic utilising the network), shown diagrammatically to determine what traffic will be utilising the roundabout at Wine Country Drive and Hunter Express Link Road, and what traffic will be distributed through the network to other intersections (if they are operational prior to reaching the 900 lot threshold requested).</i></p>	- BTF	<p>See Attached diagrams. The higher flows on HEX Link Rd appear to represent a test of the PM capacity threshold beyond the 900 lot and Town Centre trip generation.</p> <p>Given the time elapsed, a full 1<sup>st</sup> principles review was conducted of the distribution and assignments nominated in the BTF Design Note. This has assumed the nominated distributions, noting that the PM Town Centre assignment should be 90% IN, 10% OUT for the PM peak analysis. The flows derived from this distribution and assignment are LOWER than either of the previously nominated SIDRA files, particularly on the HEX link Rd approach. An additional run has been completed, and confirms the roundabout will operate at better than LoS D nominated. The SIDRA Files and there resultant Worst Movement LoS for the HEX Link Road approach are:</p> <p><u><b>A-1 PM 900 - 4 leg – 270417 (900 Lots +~400 trips Hex Link PM)</b></u>  <u><b>A-1 PM 900 + TC Mod D&amp;A- 4 leg – 280417 (900 Lots +~200 trips)</b></u>  <u><b>A-1 PM 900 + TC Mod D&amp;A- 4 leg - 280417 - 50m Rbt</b></u>  <u><b>A-1 PM 900 + TC Mod 8 1st Principles - 4 leg – 270717 (900 Lots)</b></u>  <u><b>A-1 PM 900 + TC Mod 8 1st Principles - 4 leg 50m Rbt - 270717</b></u></p>	<p>26/07/17</p> <p>Los F Los D Los C Los B Los B</p>
2	<p><i>It is noted that there are several accesses proposed into the Huntlee Town Centre area for trips to be distributed over. It is required that the estimated operational timing of each intersection be provided relative to the operation of businesses within the town centre and the 900 residential lot threshold requested.</i></p>	- LWP	<p>The Wine Country Drive Stage 2 WAD is currently under construction. This will include the intersection (signalised) of Main Street with Wine Country Drive, and an intermediate left in left out town centre access to the north of Main Street and south of the Hex Link Rd Roundabout, and the 4<sup>th</sup> leg to the same one lane circulating roundabout. <b>All will be open later this year.</b> All works for these access points will be completed prior to any occupation of the town centre.</p>	26/07/17
3	<p><i>It is not obvious from the traffic report and submitted electronic Sidra files how the trips are distributed. The two Sidra models submitted electronically demonstrating the fourth leg show very different Levels of Service for the roundabout, based on differing trip projections. It is noted that the better performing scenario was used within the traffic report.</i></p>	- BTF	<ul style="list-style-type: none"> <li>See commentary on our 1<sup>st</sup> principles review using the Design Note N distribution and assignment assumptions. The flow profiles presented in April 2017 are in excess of the 900 lot plus Town centre trip generation and so are conservative outcomes. They represent tests of capacity limit at +~200 and +~400 trips added to the HEX Link road approach beyond the 900+TC flow profile.</li> <li>See above for commentary on the additional and revised SIDRA tests.</li> </ul>	26/07/17
4	<p><i>RMS Note: The roundabout being analysed has a larger diameter than modelled. Amending this may improve the results.</i></p>	- BTF	<ul style="list-style-type: none"> <li>Modifying the roundabout diameter to 47 metres improves some of the SIDRA modelling results. See above results summary.</li> <li>SIDRA files attached.</li> </ul>	26/07/17

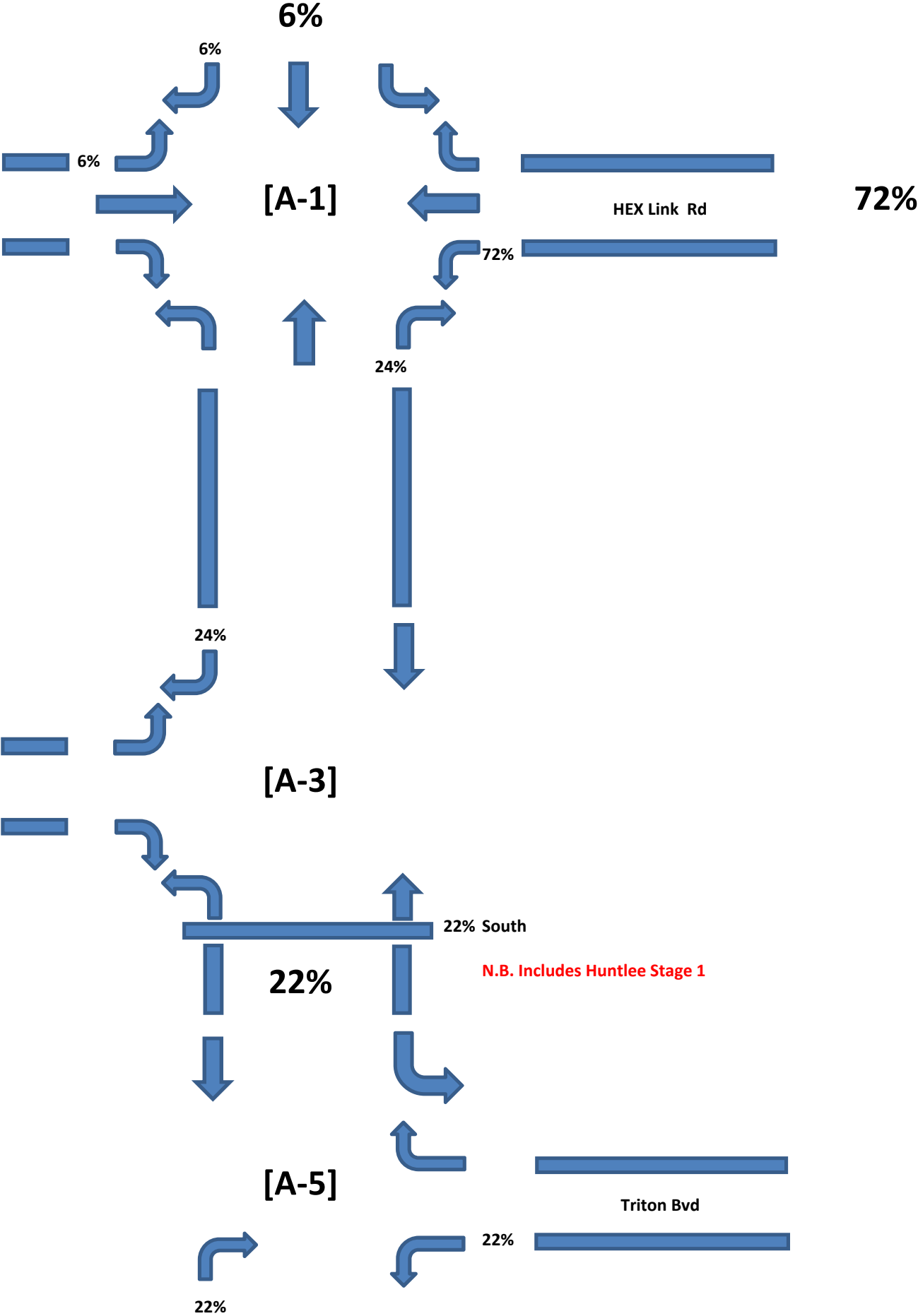


## Attachment B – Distribution and Flow Diagrams (UPDATED 4 August 2017)

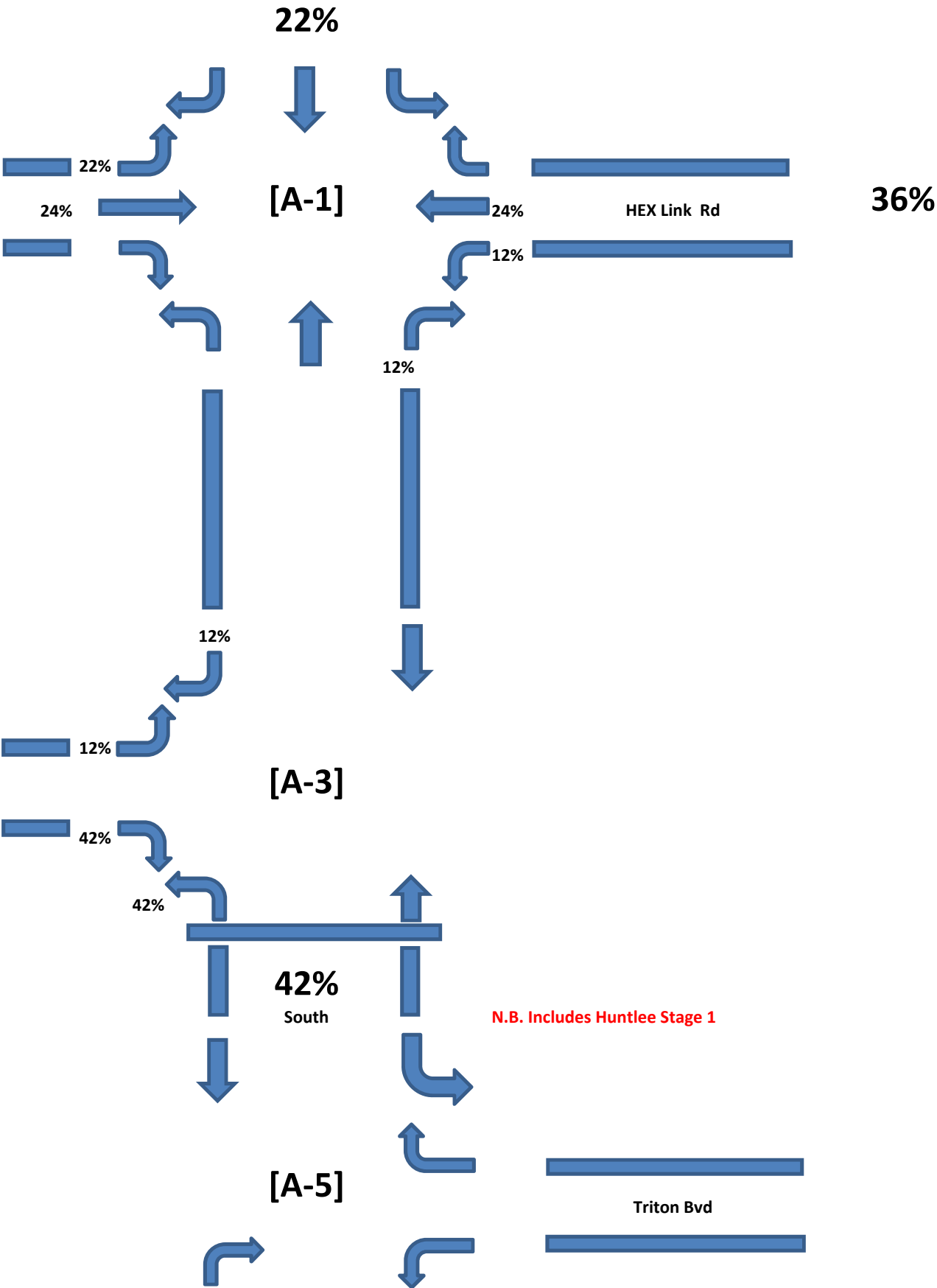
## Base Traffic Flows



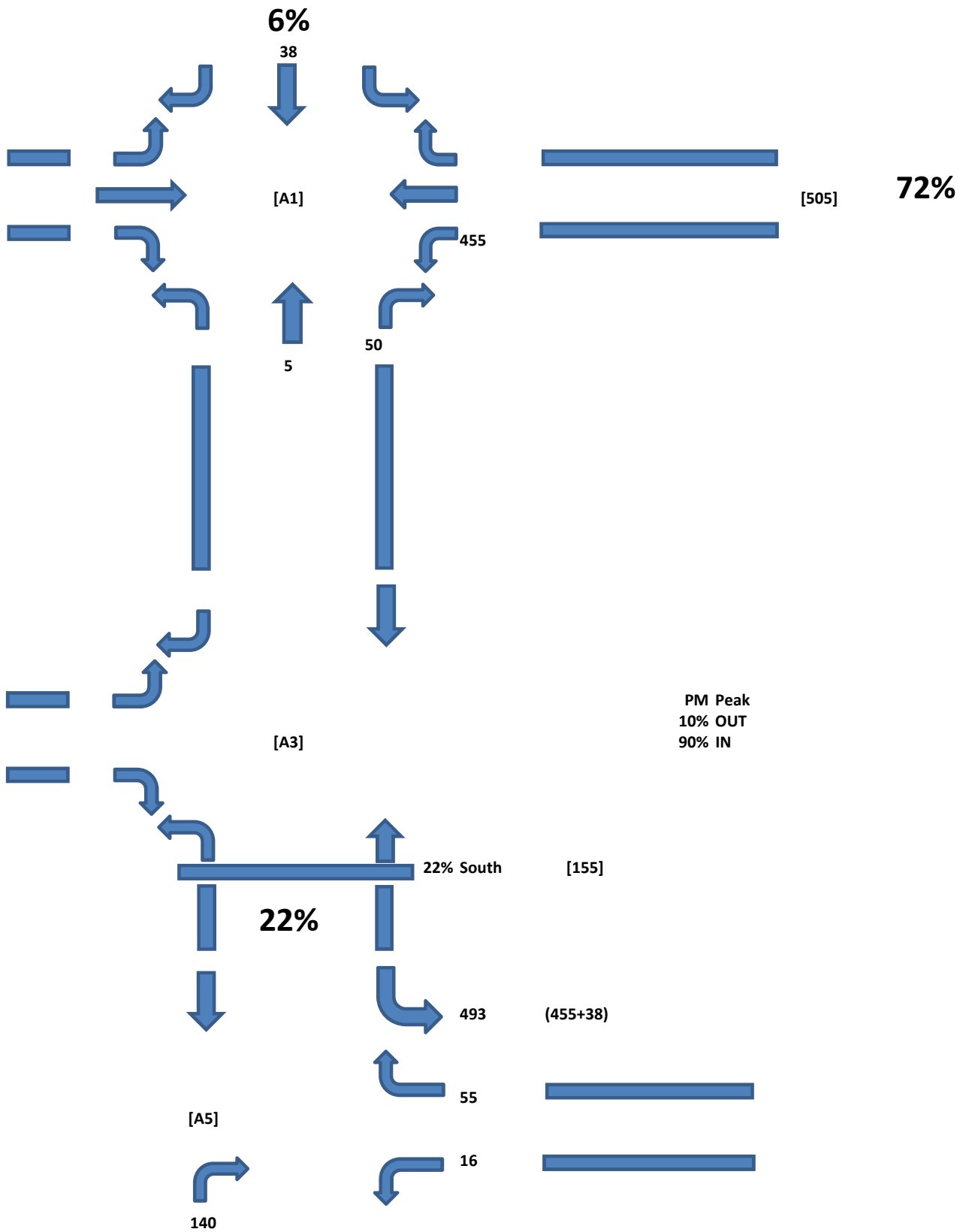
Residential Trip Distribution



Town Centre Trip Distribution

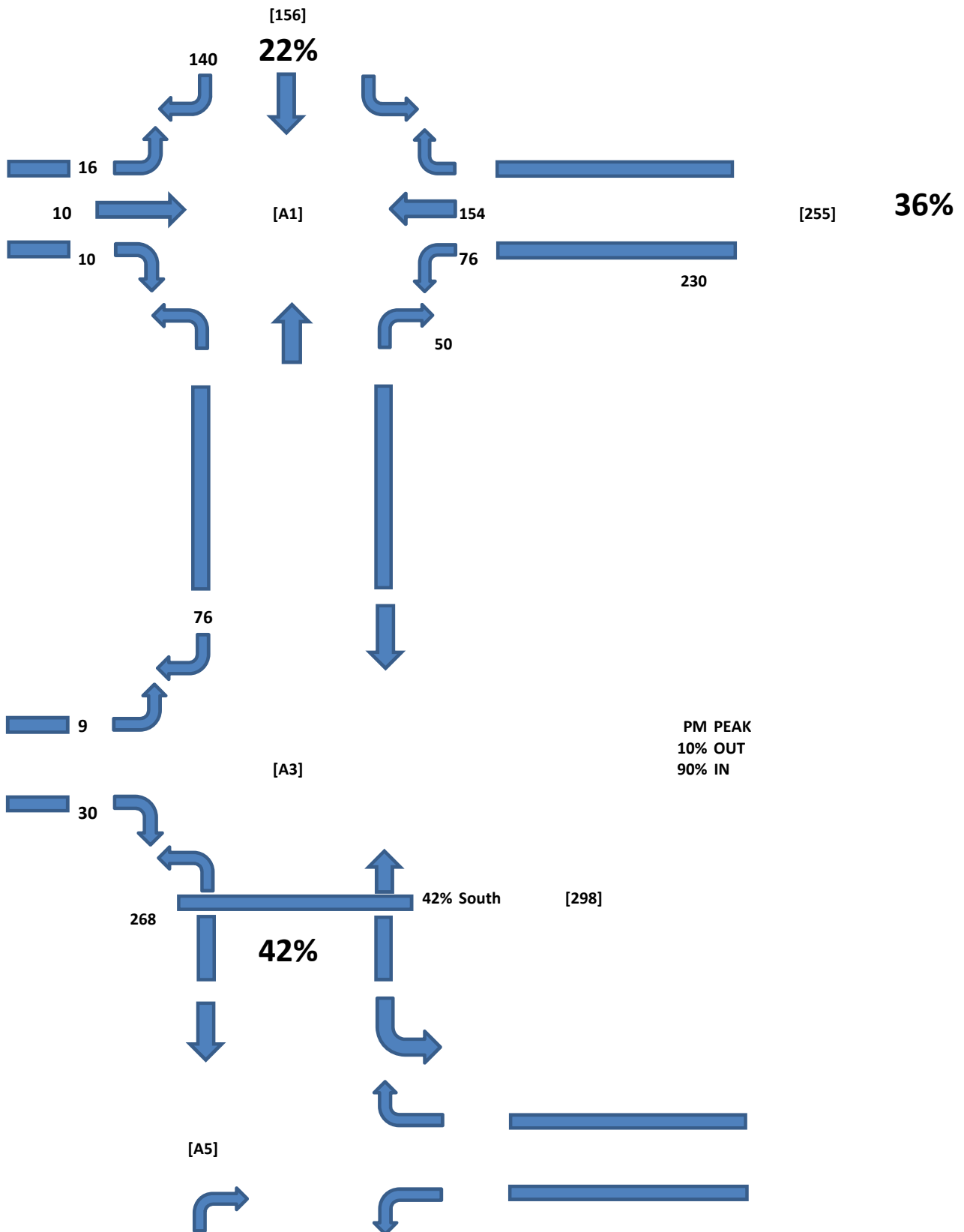


# PM Residential Traffic

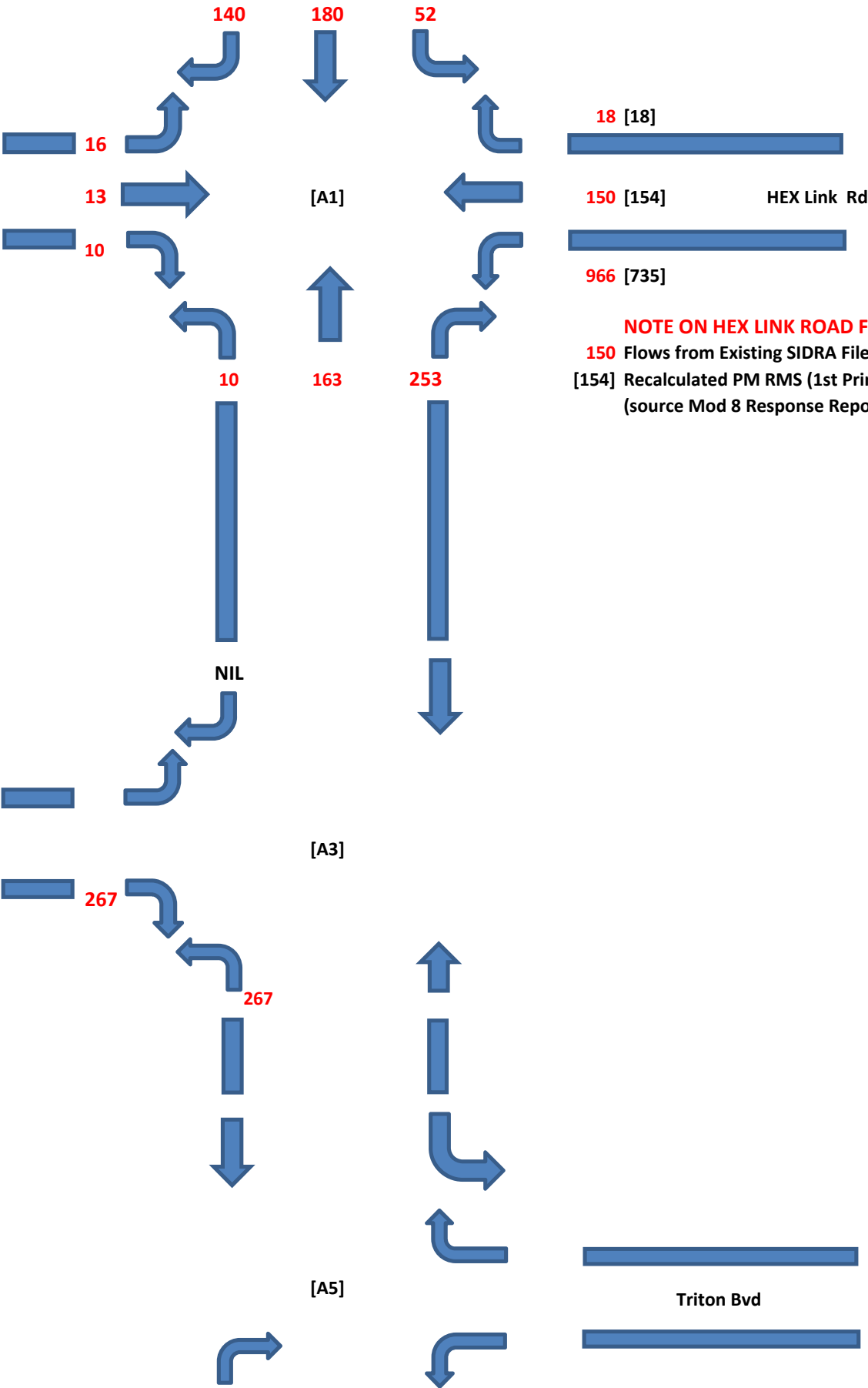




# PM Town Centre Traffic



Mod 8 (PM) BASE (RMS20) + With Development Flows



**NOTE ON HEX LINK ROAD FLOWS**  
150 Flows from Existing SIDRA File PM (Apr17)  
[154] Recalculated PM RMS (1st Principles)  
(source Mod 8 Response Report Jul17)