BREAKFAST POINT PTY LTD

SUPPLEMENTARY TRAFFIC INFORMATION IN RELATION TO TRAFFIC ASPECTS OF PROPOSED SECTION 75 MODIFICATIONS TO APPROVED CONCEPT PLAN AT BREAKFAST POINT

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1. INTRODUCTION

1.1. Colston Budd Hunt & Kafes Pty Ltd has been retained by Breakfast Point Pty Ltd to prepare supplementary traffic information in relation to the proposed Section 75W modifications to the approved concept plan at Breakfast Point. Breakfast Point is located on the southern side of the Parramatta River, as shown on Figure 1.

1.2. Breakfast Point is a residential development with some ancillary uses. There is an approved concept plan for this part of the site. The overall current approvals for the site, including the approved concept plan, provide for some 2,296 dwellings on the site, including 227 seniors living dwellings.

1.3. The proposed modifications to the approved concept plan include:

- increasing the number of dwellings to 2,469 (including replacing the 227 seniors living dwellings with conventional residential dwellings); and

- changing the mix of dwellings to provide a greater number of smaller apartments and a lesser number of larger apartments.

1.4. We prepared a report[1] which was submitted with the Section 75W application.

[1] Review of Traffic Aspects of Proposed Section 75 Modifications to Approved Concept Plan at Breakfast Point, June 2013.

1.5. In a letter dated 9 September, Department of Planning and Infrastructure has raised the following matters:

Traffic

The traffic impact assessment fails to consider:

- *The cumulative impacts of the proposed modifications along with other approved developments in the Mortlake/Breakfast Point Peninsula including the approved Mortlake Concept Plan for residential development MP010_0154).*
- *The impact of the additional traffic generated by the proposed modification on the wider local road network beyond that considered by the traffic assessment.*

In this regard, a revised traffic impact assessment is required to be submitted addressing these points and shall use Council's submission as a point of reference with regards to assessment of key roads and intersections in wider road network.

1.6. Council's submission dated August 2013 (prepared by GLN Planning) includes the following:

The applicant should submit a revised traffic impact report which takes into consideration the cumulative impact of the proposed modifications along with other approved developments in the Breakfast Point Peninsula.

The report should assess the traffic impacts of the proposed development on the surrounding area and road network, in particular the impacts on the intersections of Gale Street and Brays Road, Burwood Road with Crane and Gipps Streets and Broughton Street with Crane and Gipps Street. Consideration shall also be given to the likelihood of vehicles utilising local streets including Zoeller Street and Tripod Street as a means to avoid traffic congestion at the intersection of Broughton Street and Crane Street.

The Modification 4 development will generate additional vehicle trips beyond the 1,140 limit identified in the original and modified Concept Plans. Like the recent development approved at Hilly Street Mortlake, the Modification 4 development should be required to mitigate the impacts of the extra traffic in the wider locality.

1.7. The approved concept plan for the Hilly Street development includes some 390 residential apartments. A development application for this development is currently being prepared for submission to Council.

1.8. Our responses to the above matters are set out in the following chapter.

2. SUPPLEMENTARY TRAFFIC INFORMATION

2.1. The supplementary traffic information responding to the matters raised by the DoPI and Council is set down through the following sections:

- proposed developments;
- traffic flows at intersections identified by Council;
- existing intersection operations;
- traffic generation of proposed developments and its effects; and
- summary.

Proposed Developments

2.2. As noted in Chapter 1, the proposed Section 75 modifications to the Breakfast Point concept plan would result in a provision of 2,469 dwellings on the site, compared to some 2,296 dwellings (including 227 seniors living dwellings). No changes to the existing commercial or retail uses are proposed.

2.3. At the time of writing this report, some 1,691 dwellings in Breakfast Point were occupied, and all of the commercial and retail components were operating.

2.4. The approved concept plan for the Hilly Street development includes some 390 residential apartments. The development application being prepared for the Hilly Street development envisages a change in the apartment numbers and mix to provide a total of some 430 apartments.

Traffic Flows at Intersections Identified by Council

2.5. As noted in Chapter 1, Council has requested that the effects of the additional development traffic be assessed for the following intersections:

- Gale Street/Brays Road;
- Burwood Road/Crane Street;
- Burwood Road/Gipps Street;
- Broughton Street/Crane Street;
- Broughton Street/Gipps Street

2.6. In order to gauge traffic conditions, we have undertaken traffic counts at these intersections during weekday morning and afternoon peak periods, when development traffic would have its greatest effects and combine with other traffic on the surrounding road network. We have also undertaken traffic counts at the intersection of Zoeller Street with Tripod Street during the same peak periods.

2.7. The results of the surveys are shown in Figures 2 and 3, and summarised in Table 2.1. Gipps Street carried some 1,750 to 2,100 vehicles per hour two-way during the surveyed morning and afternoon peak hours. Crane Street, during the same peak periods, carried lower flows of some 1,000 to 1,900 vehicles per hour two-way.

2.8. Broughton Street and Burwood Road carried some 400 to 1,000 vehicles per hour two-way during the surveyed peak hours. Flows on Brays Road, Gale Street and Mortlake Street were some 200 to 700 vehicles per hour two-way. Tripod Street and Zoeller Street carried flows of some 50 to 300 vehicles per hour two-way.

Table 2.1: Existing two-way (sum of both directions) peak hour traffic flows			
Road	**Location**	**AM peak hour**	**PM peak hour**
Gale Street	North of Brays Road	635	695
Mortlake Street	South of Brays Road	305	440
Brays Road	East of Gale Street	265	200
	West of Gale Street	590	495
Broughton Street	North of Crane Street	975	945
	North of Gipps Street	810	825
	South of Gipps Street	525	650
Burwood Road	North of Crane Street	605	395
	North of Gipps Street	850	640
	South of Gipps Street	905	770
Crane Street	East of Burwood Road	1,920	1,530
	East of Broughton Street	1,705	1,430
	West of Broughton Street	1,140	970
Gipps Street	East of Burwood Road	1,945	2,095
	East of Broughton Street	1,960	2,095
	West of Broughton Street	1,735	1,800
Zoeller Street	East of Tripod Street	140	155
	West of Tripod Street	305	260
Tripod Street	North of Zoeller Street	45	45
	South of Zoeller Street	210	160

2.9. As noted above, existing development in Breakfast Point includes some 1,691 occupied dwellings and the commercial and retail development. The surveyed traffic flows therefore include traffic from this development.

2.10. At the time of writing, further stages of Breakfast Point were under construction, with a significant construction work force of some 200 employees on the site. The surveyed traffic flows therefore include traffic from construction employees travelling to and from the site.

Existing Intersection Operations

2.11. The capacity of the road network is generally determined by the ability of its intersections to cater for peak period traffic flows. The operations of the surveyed intersections have been analysed using SIDRA for the traffic flows shown in Figures 2 and 3.

2.12. SIDRA simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. 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 delay/(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 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
57 to 70	=	"E"	At capacity and requires other control mode
>70	=	"F"	Unsatisfactory and requires other control mode

2.13. 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.

2.14. The analysis found that the signalised intersection of Crane Street with Burwood Road is operating with average delays of less than 42 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

2.15. The signalised intersections of Crane Street with Broughton Street, and of Gipps Street with Burwood Road and Broughton Street, are operating with average delays of less than 25 seconds per vehicle during peak periods. This represents level of service B, a good level of service.

2.16. The roundabout controlled intersection of Gale Street with Brays Road and Mortlake Street is operating with average delays for the highest delayed

movement of less than 20 seconds per vehicle during peak periods. This represents level of service B, a good level of service.

2.17. The sign controlled intersection of Zoeller Street with Tripod Street is operating with average delays of less than 15 seconds per vehicle during peak periods. This represents level of service A/B, a good level of service.

Traffic Generation of Proposed Developments and its Effects

2.18. As previously noted, traffic generated by the proposed development will have its greatest effects during morning and afternoon peak periods when it combines with commuter and other traffic on the surrounding road network. Surveys undertaken of the traffic generation within several of the apartment buildings in the Breakfast Point development, as described in the traffic report[2] submitted in association with the approved Hilly Street development, found the following two-way traffic generations:

- weekday morning peak hour: 0.3 vehicles per hour per apartment; and
- weekday afternoon peak hour: 0.27 vehicles per hour per apartment.

2.19. These generations are effectively the same as the RMS' recommended design traffic generation rate of 0.29 vehicles per hour per apartment for higher density residential apartments in sub-regional locations. The RMS rate of 0.29 vehicles per hour per apartment is therefore considered appropriate to adopt for the assessment of traffic implications of the proposed Breakfast Point development.

[2] "Proposed Residential Apartment Development Hilly Street Precinct, Mortlake Assessment of Traffic and Parking Implications". Prepared by Transport and Traffic Planning Associates, June 2012.

2.20. As previously noted some 1,691 dwellings are currently occupied in Breakfast Point. The difference between the number of currently occupied dwellings and the proposed number of dwellings (2,469) is therefore 778 dwellings.

2.21. Based on 0.29 vehicles per hour per apartment, the additional traffic generation from development in Breakfast Point, including approved but not yet constructed/occupied development, and the changes proposed in the Section 75 W application, is some 230 vehicles per hour two-way.

2.22. It should be noted that the difference, in traffic terms, between the approved and proposed developments in Breakfast Point, would be some 80 vehicles per hour two-way at peak times, based on 0.29 vehicles per hour per conventional apartment and 0.17 vehicles per hour per apartment for seniors living dwellings. This is a relatively minor increase.

2.23. The Hilly Street development, which will comprise some 430 apartments, would generate some 130 vehicles per hour two-way, based on 0.29 vehicles per hour per apartment.

2.24. Total additional traffic generation of the two developments (Breakfast Point and Hilly Street) would therefore be some 360 vehicles per hour two-way at peak times.

2.25. The additional traffic generation of the approved (yet to be constructed/occupied) and proposed development in Breakfast Point of 230 vehicles per hour has been assigned to the road network. Existing traffic flows plus the additional traffic from the Breakfast Point development is shown in Figures 2 and 3, and summarised in Table 2.2.

Table 2.2: Existing two-way peak hour traffic flows plus Breakfast Point development traffic					
Road	**Location**	**AM peak hour**		**PM peak hour**	
		Existing	Plus development	Existing	Plus development
Gale Street	North of Brays Road	635	+230	695	+230
Mortlake Street	South of Brays Road	305	+135	440	+135
Brays Road	East of Gale Street	265	-	200	-
	West of Gale Street	590	+95	495	+95
Broughton Street	North of Crane Street	975	+110	945	+110
	North of Gipps Street	810	+55	825	+55
	South of Gipps Street	525	+35	650	+35
Burwood Road	North of Crane Street	605	-	395	-
	North of Gipps Street	850	+35	640	+35
	South of Gipps Street	905	+35	770	+35
Crane Street	East of Burwood Road	1,920	+20	1,530	+20
	East of Broughton Street	1,705	+55	1,430	+55
	West of Broughton Street	1,140	-	970	-
Gipps Street	East of Burwood Road	1,945	+20	2,095	+20
	East of Broughton Street	1,960	+20	2,095	+20
	West of Broughton Street	1,735	-	1,800	-
Zoeller Street	East of Tripod Street	140	-	155	-
	West of Tripod Street	305	-	260	-
Tripod Street	North of Zoeller Street	45	-	45	-
	South of Zoeller Street	210	-	160	-

2.18 Table 2.2 shows that traffic increases from the Breakfast Point development would be some 230 vehicles per hour on Gale Street. Increases on Brays Road, Mortlake Street and Broughton Street would be lower at some 35 to 135 vehicles per hour two-way.

2.19 Traffic increases on Crane Street, Burwood Road and Gipps Street would be some 20 to 35 vehicles per hour two-way.

2.20 The intersections previously analysed have been re-analysed with SIDRA for the additional Breakfast Point traffic flows shown in Figures 2 and 3. The analysis found that the intersection of Crane Street with Burwood Road would operate with average delays of less than 42 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

2.21 The intersections of Crane Street with Broughton Street, and of Gipps Street with Burwood Road and Broughton Street, would operate with average delays of less than 28 seconds per vehicle during peak periods. This represents level of service B, a good level of service.

2.22 The intersection of Gale Street with Brays Road and Mortlake Street would operate with average delays for the highest delayed movement of less than 20 seconds per vehicle during peak periods. This represents level of service B, a good level of service.

2.23 The intersection of Zoeller Street with Tripod Street would operate with average delays of less than 15 seconds per vehicle during peak periods. This represents level of service A/B, a good level of service.

2.24 Therefore, the wider road network will be able to cater for the additional traffic from the proposed Breakfast Point development.

2.25 As previously noted, the existing traffic flows counted by ourselves include traffic from some 200 construction employees on the Breakfast Point site. Once construction of Breakfast Point is completed, this traffic will no longer use roads and intersections in the area. The analysis is therefore conservative as it makes no allowance for the reduction in traffic once construction activities are completed.

2.26 Additional traffic from both the Breakfast Point and Hilly Street developments is shown in Figures 4 and 5. We have assessed the operations of the intersections for the additional traffic from both developments, using SIDRA, for the traffic flows shown in Figures 4 and 5.

2.27 The analysis found that the intersection of Crane Street with Burwood Road would operate with average delays of less than 42 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

2.28 During the afternoon peak period, the intersection of Broughton Street with Gipps Street would operate with average delays of less than 35 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service. During the morning peak period, the intersection would continue to operate with average delays of less than 28 seconds per vehicle. This represents level of service B, a good level of service.

2.29 The intersections of Crane Street with Broughton Street, and of Gipps Street with Burwood Road, would operate with average delays of less than 28 seconds per vehicle during peak periods. This represents level of service B, a good level of service.

2.30 The intersection of Gale Street with Brays Road and Mortlake Street would operate with average delays for the highest delayed movement of less than 20 seconds per vehicle during peak periods. This represents level of service B, a good level of service.

2.31 The intersection of Zoeller Street with Tripod Street would operate with average delays of less than 15 seconds per vehicle during peak periods. This represents level of service A/B, a good level of service.

2.32 Therefore, the wider road network will be able to cater for the additional traffic from both the Breakfast Point and Hilly Street developments.

2.33 In relation to Council's request that consideration be given to the potential for traffic to use Zoeller Street and Tripod Street to avoid Broughton Street/Crane Street, we note that the intersection of Broughton Street with Crane currently operates, and would continue to operate at a good level of service with traffic from the Breakfast Point and Hilly Street developments. The intersection is also some distance from the proposed developments. Existing traffic flows do not suggest that significant through traffic is currently using these streets.

2.34 We therefore consider it unlikely that a significant increase in traffic would occur in Zoeller Street and Tripod Street as a result of the two developments.

Summary

2.35 In summary, the main points relating to the supplementary traffic information requested by DoPI and Council in relation to the proposed Breakfast Point development are as follows:

i) the additional traffic as a result of the proposed Section 75 W amendments would be some 80 vehicles per hour two-way at peak times, compared to the approved development;

ii) intersections in the wider road network would operate at satisfactory or better levels of service with traffic from the Breakfast Point and Hilly Street developments; and

iii) there is unlikely to be a significant increase in traffic in Zoeller Street or Tripod Street as a result of the two developments.

Location Plan

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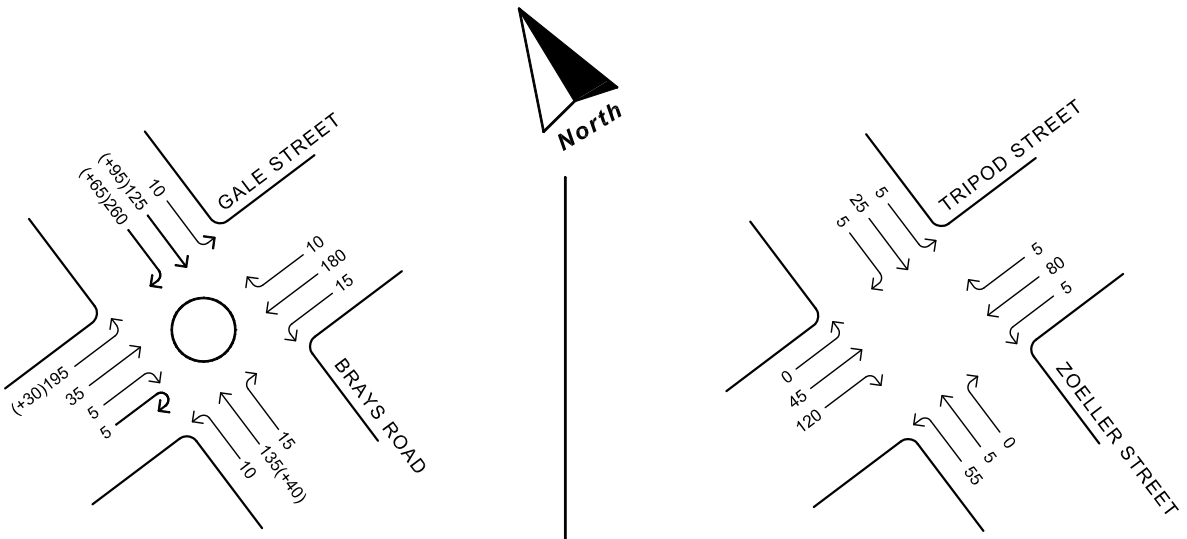
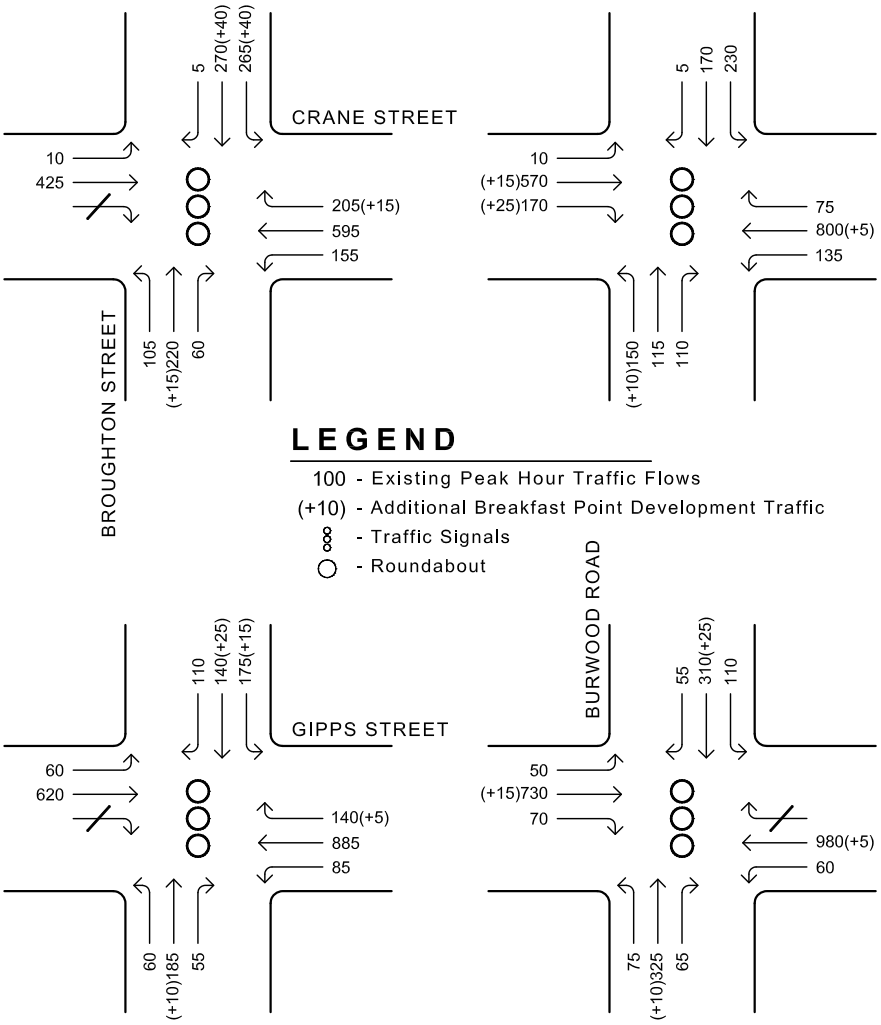
Figure 1





Existing weekday morning peak hour traffic flows plus Breakfast Point development traffic

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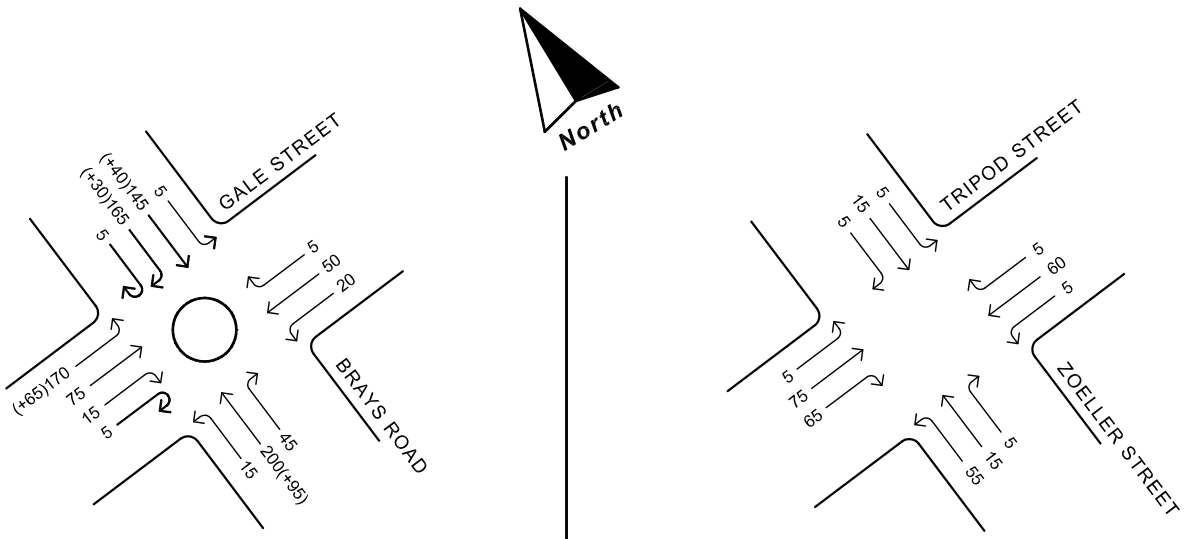
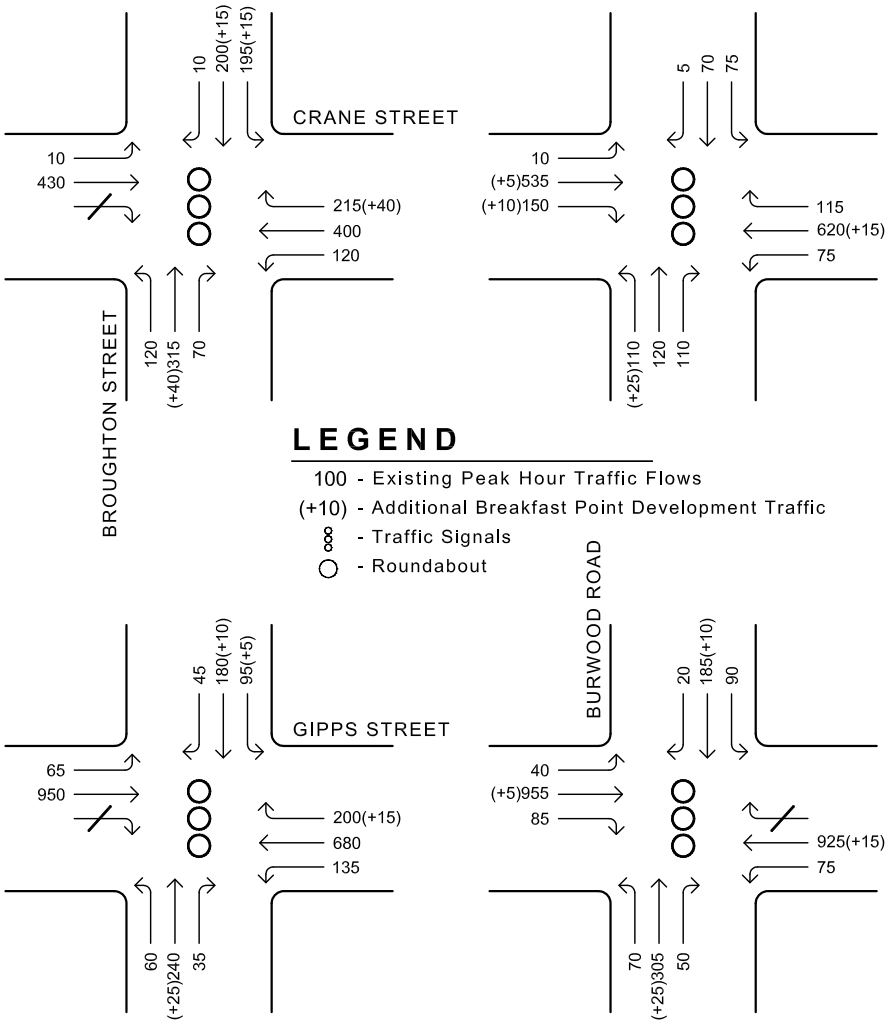
Figure 2





Existing weekday afternoon peak hour traffic flows plus Breakfast Point development traffic

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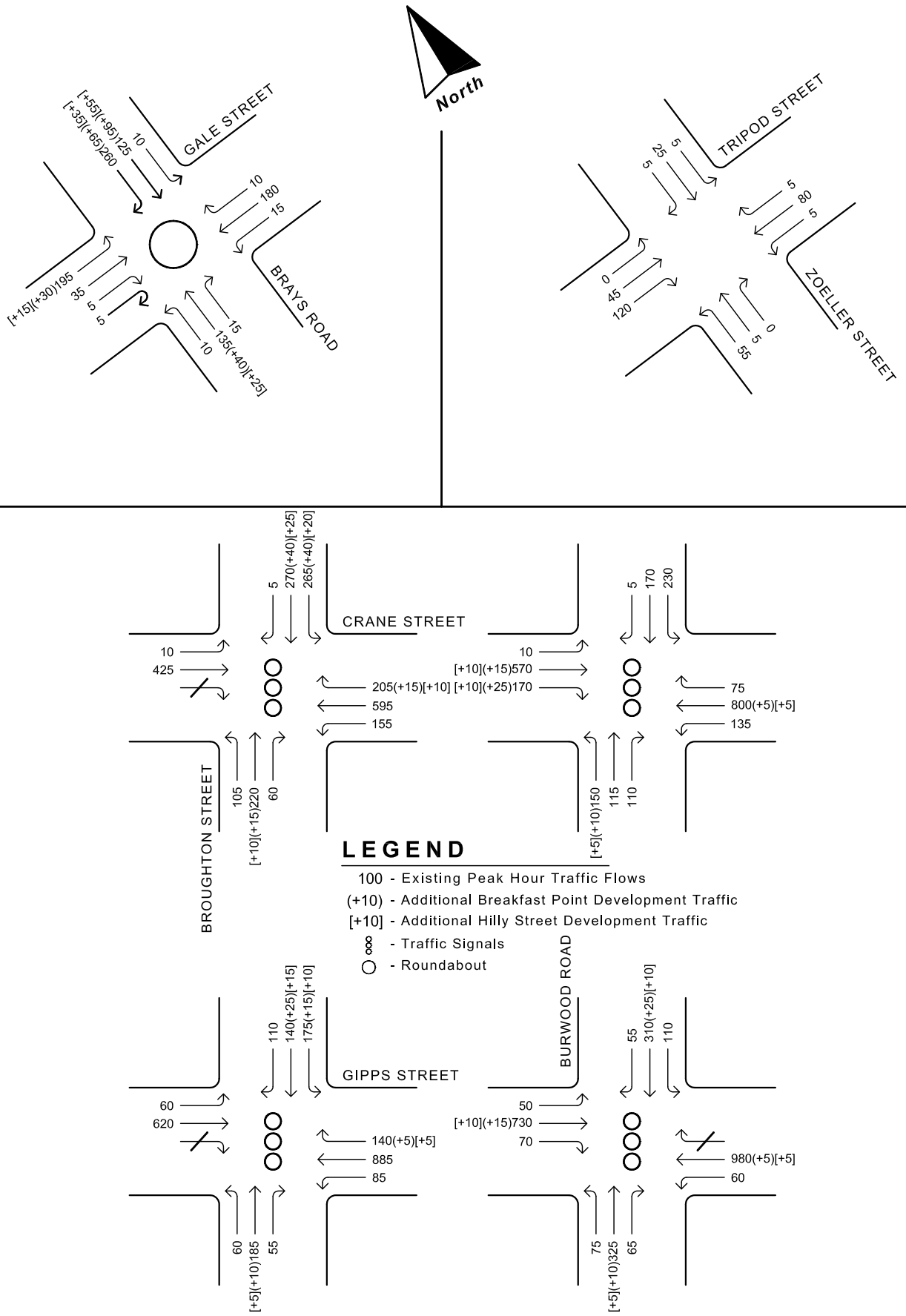
Figure 3



Existing weekday morning peak hour traffic flows plus Breakfast Point and Hilly Street developments traffic

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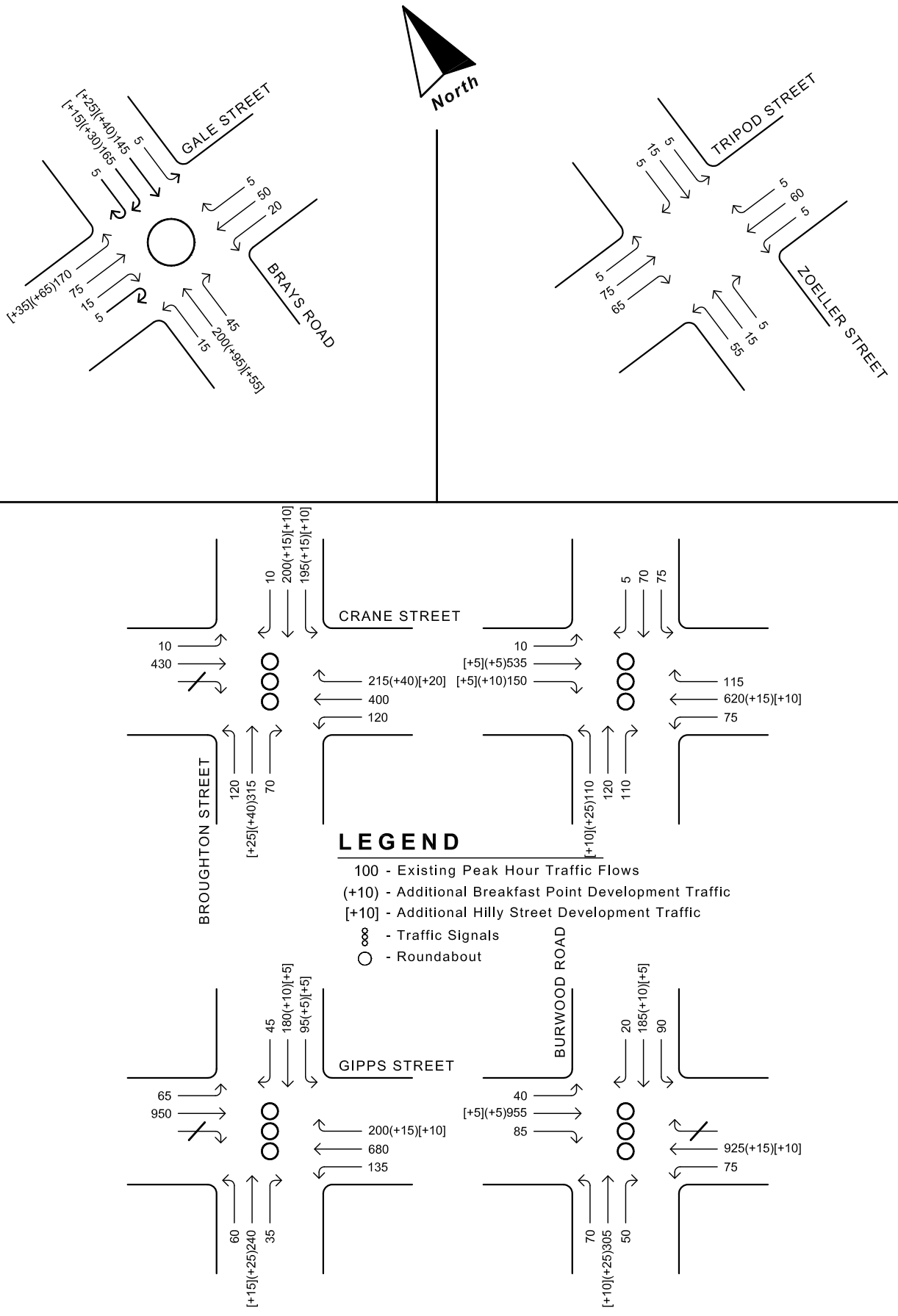
Figure 4



Existing weekday afternoon peak hour traffic flows plus Breakfast Point and Hilly Street developments traffic

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Figure 5