Stephen Reid Consulting
Traffic and Transportation

Proposed Warehouse Development

Brownsbarn Drive, Citywest, Dublin 24
Traffic Impact Assessment

Client: Exeter Ireland Property IV B Limited

JUNE 2021

Stephen Reid Consulting
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Contents

Appendices

Rev	Date	Purpose of Issue	Approved
0	20.04.2021	Draft	SR
1	02.06.2021	Final Draft for Planning Submission	SR

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1 INTRODUCTION

1.1 BACKGROUND

Stephen Reid Consulting Traffic and Transportation Limited (SRC) have prepared this report on behalf of Exeter Ireland Property IV B Limited in support of a planning application to be submitted to South Dublin County Council (SDCC) for development of 2no. commercial warehouse buildings on lands extending to 4.04Ha on the northern side of the N7 Junction 3, adjacent to the Brownsbarn building at Brownsbarn Drive, Citywest, Dublin 24.

The application will comprise of the construction of 2 warehouse buildings with ancillary office and staff facilities totalling 14,146 sq. m GFA, with the following floor areas and key elements:

Unit 1 (on the northern part of the development site)

- warehouse area (7,397 sq. m)
- ancillary office areas on first and second floors (362 sq. m)
- staff facilities on three floors (397 sq. m)
- 59 staff/visitor car parking spaces and 24 staff cycle parking spaces
- Separate access for staff car parking and HGV yard

Unit 2 (on the southern part of the development site)

- warehouse area (5,031 sq. m)
- ancillary office areas on first and second floors (536 sq. m)
- staff facilities on three floors (423 sq. m)
- 50 staff/visitor car parking spaces and 24 staff cycle parking spaces
- Separate access for staff car parking and HGV yard

In addition, the development includes for the removal of the existing small diameter roundabout to the west of Roundabout 2 at the Citywest Interchange and revised access arrangements to service both sites and the existing Brownsbarn (Specialized) site, to improve traffic management and road safety for the expected development flows including HGV traffic.

The application site location is indicated in Figure 1.1.

1.2 METHODOLOGY

Peak Hour traffic counts for the N7 Junction 3 Interchange were obtained for Thursday 27th February 2020 (prior to the start of the first National Lockdown) and these were checked against the N7 Mainline flows from the TII permanent traffic counter site located between Junction 3 and Junction 2.

The 2020 counts were taken to be baseline flows, and these were factored up to opening year and design year flows using TII growth factors.

Development vehicle trip generation rates have been applied for the proposed land use areas and assigned to the network using existing turning proportions for the existing Junction 3 Interchange Roundabouts 2 and 3 on either side of the Citywest Road overbridge.

From this the percentage impact on the key road network can be determined, due to proposed development traffic, in the opening and future years.

If the impact is greater than defined thresholds, modelling of the junctions can be undertaken to confirm adequate capacity to accommodate the development.

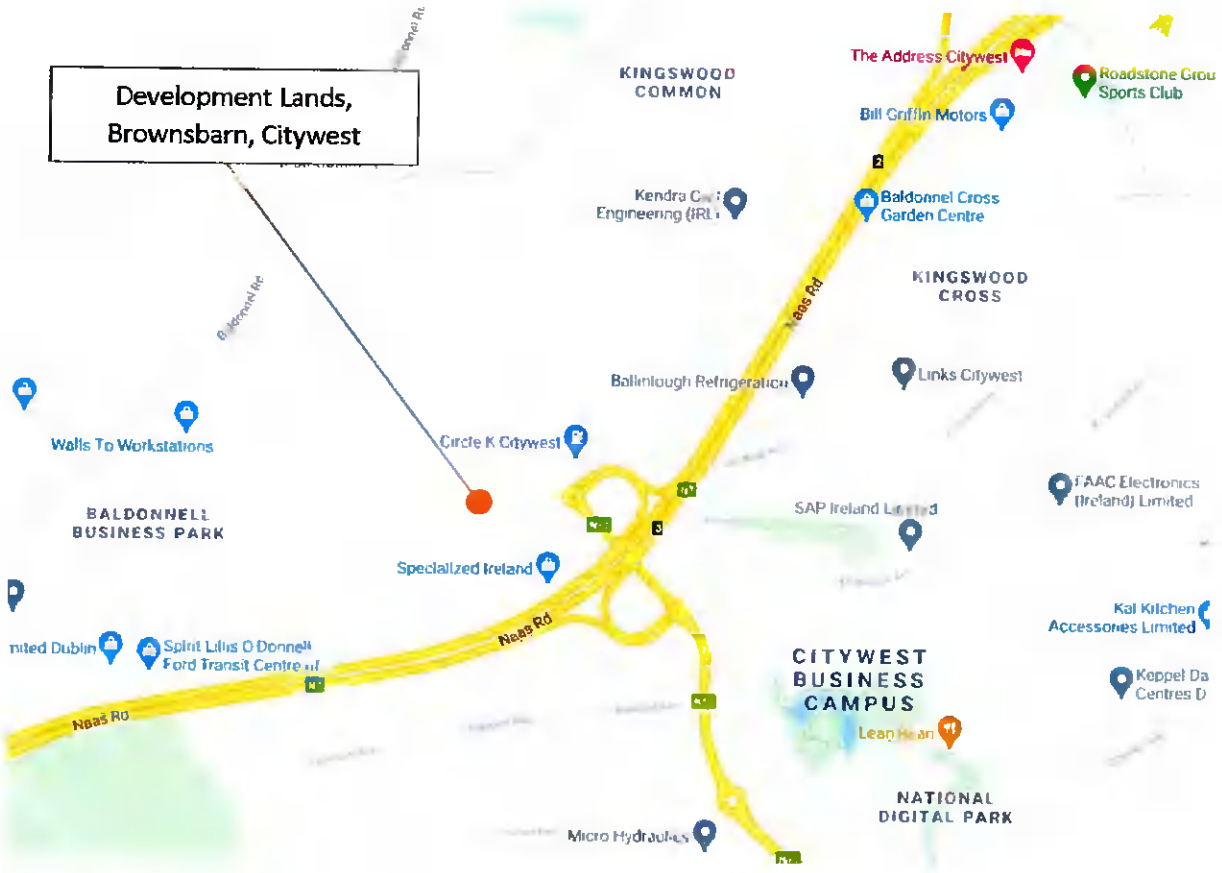


Figure 1.1: Site Location, Brownsbarn, Citywest, Dublin 24 (source: www.google.ie/maps)

2 SITE LOCATION & EXISTING CONDITIONS

2.1 GENERAL

The site is identified in Figures 1.1 and 2.1 and is formed by currently undeveloped lands accessed from the roads serving Brownsbarn, a cul-de-sac area to the northwest of the N7 Junction 3 Citywest.

The Specialized development is to the southeast of the site, and the NVD compound which is accessed from Baldonnell Road is located behind a landscaping buffer which forms the western and northern boundaries of the site.

Figure 2.1: Site Location and Surrounding Brownsbarn Lands (source: www.google.ie/maps)

2.2 ROAD NETWORK

The key junction on the interchange which will service the development site is the N82 Citywest Road/N7 Naas Road eastbound/Brownsbarn Drive roundabout (signposted as Roundabout 2), which forms the northwestern side of the half-cloverleaf interchange.

Roundabout 2 has a 15m diameter central island and 33m outer diameter, and is a four-arm arrangement, with single-lane entries and exits and slight flaring into the yield line on each arm.

Figure 2.2: Roundabout 2 looking north (source: SRC, May 2021)

The southeastern arm is the N82 Citywest Road, a two-lane single carriageway on an overbridge which connects to Roundabout 3 on the south east side of the N7 (the two roundabout centres are 268m apart).

The northeastern arm is formed by the two eastbound off/on slip roads from the N7.

The northwestern arm is formed by the Brownsbarn Drive roadway, a two-lane single carriageway which connects to roundabout 1 (the roundabout centres are 85m apart). Roundabout 1 only has two arms with the northeastern arm serving the Circle K service station and the Honda site only.

The fourth arm extends southwest from Roundabout 2 and into a small roundabout with a 7.5m diameter central island and a 27.5m outer diameter. It has been constructed as a four-arm roundabout but only 2 of the arms are operational with the other two arms blocked off/incomplete beyond the bellmouths.

The arm extending southwards off this roundabout serves the Brownsbarn building (which was historically in use as a restaurant but more recently has operated as Specialized (a cycling retail outlet). There are two accesses into the car park serving Specialized off this roadway the one closest to the roundabout is blocked off by concrete barrier and planters (see Fig 2.3), and the roadway extends for 95m from the roundabout before terminating jus after the Brownsbarn building at the southeast boundary of the subject lands.

Figure 2.3: Roundabout on Brownsbarn access looking towards Roundabout 2 (source: SRC, May 2021)

Figure 2.4: Looking from roundabout on Brownsbarn access towards Specialized (source: SRC, May 2021)

SRC reviewed the layout and geometry of this small roundabout in light of issues raised by the Road Safety Auditor during design development and it was considered that the roundabout would not be a suitable arrangement for the future proposed uses, considering the geometrical issues and proximity to the existing Roundabout 2 at the N7 Junction 3 Interchange.

In addition to the sensitivity of the nearby National Road junction, it was considered that the composition of vehicles which would have to negotiate it include a significant number of HGVs and it would be difficult for these to brake and turn safely at this point on the downgrade approaching from Roundabout 2. Therefore, a revised layout is set out in the following chapter and on the planning application drawings.

The section of the N7 passing Junction 3 is 100kph, while the N82 Citywest Road and the top of the slip N7 roads are signed as 60kph where they join the roundabouts. There is no speed limit signage on Brownsbarn Drive entering the site area, but the existing geometry would suggest that a speed limit of 50kph or lower would be most appropriate entering these cul-de-sac areas from Roundabout 2.

2.3 Existing Traffic Flows

SRC have utilised data which was collected on Thursday 27th February 2020 for the two roundabouts on N7 Junction 3 for a previous project in the area. This data was obtained prior to the first National Lockdown and would therefore be higher than traffic flows in the early part of 2021 and more robust. In addition, the TII permanent traffic counter site located between Junction 2 and Junction 3 on the N7 was reviewed and the peak hour flows obtained.

Key baseline flows at Roundabout 2 were as follows (please reference Diagrams 1(a) and 1(b) appended to this report for full directional movements at the interchange junctions and slip roads:

- 08.00-09.00 AM peak hour (total inflow volume 1,328 pcu):
    - 757 pcu exiting the N7 eastbound and 673 pcu joining the N7 eastbound;
    - 463 pcu northbound and 719 pcu southbound on the N82 crossing the bridge between Roundabout 2 and Roundabout 3;
    - 157 pcu northbound and 108 pcu southbound on Brownsbarn Drive between Roundabout 2 and Roundabout 1;
    - 6 pcu into and 4 pcu out of the access arm (to/from Specialized)
- 16.30-17.30 PM peak hour (total inflow volume 1,335 pcu):
    - 367 pcu exiting the N7 eastbound and 804 pcu joining the N7 eastbound;
    - 803 pcu northbound and 380 pcu southbound on the N82 crossing the bridge between Roundabout 2 and Roundabout 3;
    - 118 pcu northbound and 134 pcu southbound on Brownsbarn Drive between Roundabout 2 and Roundabout 1;
    - 33 pcu into and 31 pcu out of the access arm (to/from Specialized)

The baseline flows for the N7 mainline were as follows:

- 08.00-09.00 AM peak hour:
    - 5,252 pcu before the N7 eastbound diverge and 5168 pcu after the N7 eastbound merge
    - 3,855 pcu before the N7 westbound diverge and 3,518 pcu after the N7 westbound merge
- 16.30-17.30 PM peak hour:
    - 3,841 pcu before the N7 eastbound diverge and 4,278 pcu after the N7 eastbound merge
    - 4,565 pcu before the N7 westbound diverge and 4,952 pcu after the N7 westbound merge

In finalising this report SRC reviewed the traffic volumes collected at the TII permanent counter site for 02.06.2021 and compared this with the data from 27.02.2020. It was noted that the easing of lockdown measures has resulted in traffic flows almost back to pre-lockdown levels, with the daily volume on the N7 as follows:

- 27.02.2020 120,342 vehicles
- 02.06.2021 116,536 vehicles

The difference between the two is only -3.2%, and it was noted that the figures for the AM peak hour were similarly matched with a difference of approximately -5% in the eastbound and westbound flows.

Therefore, it is considered appropriate to factor the February 2020 baseline data to opening and design years using standard TII growth factors to create a proxy for robust opening year traffic volumes.

2.4 Pedestrian and Cyclist Accessibility

There is footpath provision on the N82 Citywest Road and at Roundabout 2, and along the east side of the roadway leading to Roundabout 1 and Circle K, and on the southern side of the Brownsbarn access road leading to the Specialized site.

It is noted that the concrete footpaths are dished at the crossing points, but these do not line up correctly with the dropped kerbs on the roundabout splitter islands and there is no tactile provision.

There is street lighting along the N82 and within the Brownsbarn area.

There are no dedicated cyclist provisions in this area.

2.5 Public Transport Accessibility

There is an eastbound stop on the N7 between the L2006 Baldonnell junction and Junction 3. There is a footpath along the northern side of the N7, but this terminates under the overbridge at Junction 3. There is also a Bus Eireann stop located to the east of Junction 3 on the eastbound mainline with no footpath access. At the time of preparing this report no services appear to be operating at these stops (from TFI data).

On the south side of the Interchange several services stop at the junction of Citywest Road and Bianconi Avenue (approximately 500m walk from the site), and on Kingswood Avenue in the Citywest Business Campus (approximately 700m walk from the site). These are frequent services across the daytime period.

The Citywest Campus Luas Stop (on the Red Line Saggart Spur) is a 1.28km walk from the site via Citywest Road.

3 PROPOSED DEVELOPMENT

3.1 GENERAL

As set out in the introduction section of this report, the development comprises 2no. commercial warehouse buildings on lands at Brownsbarn, to the northwest of the N7 Junction 3 interchange, accessed from Brownsbarn Drive off Roundabout 2, Citywest, Dublin 24.

The application will comprise of the construction of 2 warehouse buildings with ancillary office and staff facilities totalling 14,146 sq. m GFA, with the following floor areas and key elements:

Unit 1 (on the northern part of the development site) has a GFA of 8,156 sq m, including the following:

- warehouse area (7,397 sq. m)
- ancillary office areas on first and second floors (362 sq. m)
- staff facilities on three floors (397 sq. m)
- 59 staff/visitor car parking spaces and 24 staff cycle parking spaces
- Separate access for staff car parking and HGV yard

Unit 2 (on the southern part of the development site) has a GFA of 5,990 sq m, including the following:

- warehouse area (5,031 sq. m)
- ancillary office areas on first and second floors (536 sq. m)
- staff facilities on three floors (423 sq. m)
- 50 staff/visitor car parking spaces and 24 staff cycle parking spaces
- Separate access for staff car parking and HGV yard

In addition, the development includes for the removal of the existing small diameter roundabout to the west of Roundabout 2 at the Citywest Interchange and revised access arrangements to service both sites and the existing Brownsbarn (Specialized) site, to improve traffic management and road safety for the expected development flows including HGV traffic.

It should be noted that the office space is less than 10% of the overall gross floor area, confirming that it is ancillary to the primary function of development as commercial warehousing use.

3.2 ROAD ACCESS

The overall site layout including AutoTracking is presented in the Kavanagh Burke site layout plan D1678-D3-1 submitted with the application.

As set out in Section 2, during design development the existing small roundabout which is constructed on a slope was considered inappropriate for the future use of the access roadway following development and therefore a revised arrangement has been agreed with Citywest

The revised arrangement will remove the small roundabout with the roadway carried straight through, and the arm serving the Brownsbarn building will form a priority T-junction, with a separate priority T-junction serving the car park for Unit 1. A central ghost island hatching is provided with a right turn storage to ensure that staff cars arriving in to the site do not block following traffic including HGVs entering the area from Roundabout 2.

The car park access barriers will be kept open at peak times when staff are arriving to ensure there is not a back-up of cars onto the access road.

The continuation of the new roadway alignment will provide separate access to the HGV yards serving Units 1 and 2, wit a set back sliding gate on each yard access to ensure only authorised HGVs can enter the yard areas.

The roadway serving Specialized which terminates at the end of the Brownsbarn building will be extended into the Unit 2 car park.

A 2m footpath behind a 1.8m grass service verge is proposed to connect the staff accesses beside each car park entrance to the existing footpaths linking to Roundabout 2.

The car park access roadways are 6m wide between kerbs and runs southwards from the access road along the western boundary of the site. A 2m footpath is proposed to connect from the external footpaths to the Unit access/reception in each site and to the cycle parking.

A fire path will also be provided around the perimeter of the building.

Stop road markings and signage at the exits from the car park and HGV yard will be installed as part of the site development works, in accordance with the Traffic Signs Manual (TSM).

3.3 Pedestrian Access

A 2m footpath behind a 1.8m grass service verge is proposed to connect the staff accesses beside each car park entrance to the existing footpaths linking to Roundabout 2.

A 2m footpath is proposed to connect from the external footpaths to the Unit access/reception in each site and to the cycle parking.

3.4 Car Parking Standards and Provision

Car parking for the development is to be provided with reference to the South Dublin Development Plan 2016-2022 parking standards for development, which set out at Table 11.23 the maximum permissible for different land uses.

Car parking for the development is to be provided having regard for the SDCC Development Plan standards, which set out maximum requirements of 1/100 sq.m for commercial warehousing (employment), which would equate to a maximum of 82 spaces for Unit 1 and 60 spaces for Unit 2.

It is proposed to provide 59 spaces (including 4 wheelchair accessible spaces) for Unit 1, and 50 spaces (including 3 wheelchair accessible spaces) for Unit 2. This provision is within the requirements of the Development Plan.

There is provision for 10% of the total spaces in each car park to be for EV use and installed with EV charging points, with ducting to facilitate future expansion of the EV charging equipment, if demands arise.

3.5 Cycle Parking Standards and Provision

The SDCC Development Plan standards out minimum requirements at Table 11.22 for Enterprise and Employment (manufacturing and offices) of 1 space/200 square metres GFA (long-term).

Having regard for the nature of the development and the lack of dedicated cycle provision generally in the area, it is considered that the Development Plan level of provision would be excessive.

Therefore, it is proposed to provide 12 Sheffield stands at each Unit (which will be double-sided to accommodate up to 24 cycles for each Unit).

These will be located close to the admin/staff entrance of the building and accessible from the pedestrian access and car park access of each unit.

The cycle parking will be covered as required in the Development Plan for long stay (staff) use.

Lockers, showers and changing rooms are provided within the staff welfare area.

This will ensure that the staff who are based locally have cycle parking and facilities available to them, should they choose to travel by bike to/from work. Additional cycle parking facilities can easily be provided within the site if there is an increased demand in the future.

4 DEVELOPMENT TRAFFIC GENERATION

4.1 Trip Generation

The predicted development traffic generation is based on TRICS data of existing surveyed sites for distribution warehouse uses in Dublin and Leinster Regions.

The data in the TRICS site is for the overall floor area, and an element of office space (10% or less) would be inherent in these.

Land Use	Rate per	Weekday AM Peak (08:00-09:00)		Weekday PM Peak (16:30-17:30)		Daily total (07.00-19.00)	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Distribution Warehousing	100 sq. m	0.177	0.051	0.061	0.318	1.799	1.799

Table 4.1 – TRICS Vehicle Trip Rates for Proposed Development

When the above trip rates are used in conjunction with the schedule of accommodation of the proposed development, the total trips generated can be found. These can be seen in Table 4.2 below.

Land Use	GFA	Weekday AM Peak (08:00-09:00)		Weekday PM Peak (16:30-17:30)		Daily total (07.00-19.00)	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Unit 1	8,156 sq. m	14	4	5	26	147	147
Unit 2	5,990 sq. m	11	3	4	19	108	108
Development Total	14,146 sq. m	25	7	9	45	255	255

Table 4.2 – Vehicle Trips for Proposed Development

Clearly the levels of traffic generation during the network AM peak hour are not significant having regard for the scale and capacity of the road network serving the site. This is expected as the arrival profile for staff working at commercial distribution warehousing is typically greater during the 07.00-08.00 hour preceding the network peak, when the background flows will be lower on the N7 interchange junctions (To qualify this, SRC note the TRICS data provides an arrival vehicle trip rate of 0.662 during the 07.00-08.00 hour, which would equate to 54 vehicle arrivals to Unit 1 and 40 vehicle arrivals to Unit 2 during that hour).

The impact in the PM peak hour of 16.30-17.30 is slightly greater when there is a large proportion of staff departing (who had arrived pre-08.00 in the morning) and would be finishing their working shift at that time, which is similar to the pattern of peak traffic in the area.

4.2 Trip Distribution

The distribution of development traffic volumes has been based on a review of the turning proportions the Roundabout 2 Junction serving the N82 and N7 movements, and the turning proportions at Roundabout 3 on the south side of the N7.

Roundabout 2:

- AM peak hour turning proportions:
  - Arrivals 49.0% from N82 overbridge, 51.0% from N7 eastbound exit slip;
  - Departures 49.5% to N82 overbridge, 50.5% to N7 eastbound entry slip.
- PM peak hour turning proportions:
  - Arrivals 60.6% from N82 overbridge, 39.4% from N7 eastbound exit slip;
  - Departures 56.3% to N82 overbridge, 43.7% to N7 eastbound entry slip.

Roundabout 3:

- AM peak hour turning proportions:
  - Arrivals 37.5% from N7 westbound exit slip, 10.0% from N82 Citywest Road, 1.5% from Kingswood Avenue;
  - Departures 34.4% to N7 westbound entry slip, 11.0% to N82 Citywest Road, 4.0% to Kingswood Avenue;
- PM peak hour turning proportions:
  - Arrivals 46.8% from N7 westbound exit slip, 8.9% from N82 Citywest Road, 4.9% from Kingswood Avenue;
  - Departures 50.6% to N7 westbound entry slip, 5.0% to N82 Citywest Road, 0.6% to Kingswood Avenue.

When these proportions are applied against the proposed development trips from Table 4.2 the following development trips are generated for each link:

Link and Direction	AM Arrivals	AM Departures	PM Arrivals	PM Departures
N7 Eastbound exit slip	13	n/a	4	n/a
N7 Eastbound entry slip	n/a	4	n/a	20
N82 Overbridge	12	3	5	25
	25	7	9	45
N7 Westbound exit slip	9	n/a	4	n/a
N7 Westbound entry slip	n/a	2	n/a	23
N82 Citywest Road	3	1	1	2
Kingswood Avenue	0	0	0	0

Table 4.3 – Development Trips AM and PM Peak Hours

The above table identifies the greater proportion is accessing the site using the N7 and slip roads with the balance (a minor number of vehicle trips) using the N82 Citywest Road, to the south of Roundabout 3. See also Diagram 5(a) and 5(b) illustrating the development peak hour vehicle trips through N7 Junction 3 (Roundabouts 2 and 3 and the N7 slips).

The percentage impact of the development traffic on the links at Roundabouts 2 and 3 and on the N7 upstream and downstream of Junction 3 is set out in the following section.

5 DEVELOPMENT IMPACT

5.1 ASSESSMENT YEARS

The earliest opening year for the proposed development allowing for planning and construction would be 2023, and a '+5' design year (2028) and '+15' (2038) has also been considered.

In addition to the traffic generated by the proposed development there is also an expected increase in traffic flows due to general development and an increase in car ownership that needs to be taken into consideration when assessing future year junction capacity.

Traffic growth to 2023, 2028 and 2038 has been developed using the Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections PE-PAG-02017 (May 2019).

Figure 6.1 confirms that the site and road network are in the Dublin Metropolitan Area, and therefore Table 6.1. Central Growth Rates for LVs (as the traffic flows are in pcus) are utilised. The appropriate annual rates used are as highlighted in the Table below which is reproduced from the TII document.

Table 6.1: Link-Based Growth Rates: Metropolitan Area Annual Growth Rates

Metropolitan Area	Low Sensitivity Growth Rates						Central Growth Rates						High Sensitivity Growth Rates					
	2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0146	1.0280	1.0034	1.0116	1.0028	1.0144	1.0162	1.0295	1.0051	1.0136	1.0044	1.0162	1.0191	1.0328	1.0087	1.0172	1.0093	1.0256
Cork	1.0153	1.0279	1.0072	1.0128	1.0065	1.0164	1.0169	1.0294	1.0090	1.0149	1.0083	1.0182	1.0202	1.0328	1.0125	1.0185	1.0166	1.0276
Galway	1.0154	1.0201	1.0077	1.0164	1.0079	1.0203	1.0169	1.0217	1.0097	1.0182	1.0095	1.0220	1.0203	1.0250	1.0131	1.0217	1.0178	1.0313
Limerick	1.0158	1.0313	1.0052	1.0113	1.0050	1.0158	1.0174	1.0329	1.0070	1.0134	1.0069	1.0177	1.0218	1.0364	1.0106	1.0171	1.0146	1.0273
Waterford	1.0123	1.0301	1.0031	1.0131	1.0028	1.0175	1.0140	1.0317	1.0052	1.0153	1.0050	1.0194	1.0173	1.0352	1.0091	1.0194	1.0122	1.0300

Figure 5.1: Table 6.1. of PE-PAG-02017 (TII)

The annual rate for each period is used to develop a compound factor for the required years.

Therefore, the February 2020 surveyed base year flows were factored up as follows:

- by 4.94% from 2020 to an opening year of 2023 (see Diagram 2(a) and 2(b) appended)
- by 8.373% from 2023 to a '+5' Design Year of 2028 (see Diagram 3(a) and 3(b) appended)
- by 7.42% from 2028 to a '+15' Design Year of 2038 (see Diagram 4(a) and 4(b) appended)

5.2 PERCENTAGE IMPACT ON KEY JUNCTIONS

The TII Guidelines for Transport Assessments state that the thresholds for junction analysis in Transport Assessments are as follows:

- *"Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the adjoining highway."*

- *"Traffic to and from the development exceeds 5% of the existing two-way traffic flow on the adjoining highway, where traffic congestion exists or will exist within the assessment period or in other sensitive locations".*

As noted in the previous section, most of the development traffic will arrive and depart on the N7 slip roads at Junction 3 and due to the cul-de-sac arrangement of the Brownsbarn area this will all have to pass through Roundabout 2. (i.e. in the AM peak hour there is a total of 32 pcu and in the PM peak hour there is a total of 54 pcu). Approximately half of the development trips also pass through Roundabout 3 to the south of the N7.

Therefore, the impact on the links at Roundabout 2 and 3, comparing the Do nothing flows in Diagrams 2(a) to 4(b) with the additional traffic generated by the development from Diagrams 5(a) and 5(b) is as follows:

Link and Direction	2023		2028		2038	
Roundabout 2	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
N7 Eastbound exit slip	+1.64%	+1.04%	+1.51%	+0.96%	+1.41%	+0.89%
N7 Eastbound entry slip	+0.57%	+2.37%	+0.52%	+2.19%	+0.49%	+2.03%
N82 Overbridge	+1.21%	+2.35%	+1.10%	+2.23%	+1.04%	+2.08%
Roundabout 3	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
N7 Westbound exit slip	+1.27%	+1.54%	+1.18%	+1.42%	+1.09%	+1.32%
N7 Westbound entry slip	+0.57%	+3.46%	+0.52%	+3.19%	+0.49%	+2.97%
N82 Citywest Road	+0.18%	+0.21%	+0.16%	+0.19%	+0.15%	+0.18%
Kingswood Avenue	0%	0%	0%	0%	0%	0%

Table 5.1 – Development Impact - AM and PM Peak Hours

It should be noted that the percentage impact at each junction in the 2023 opening year will diminish slightly in the 2028 and 2038 design years as the background traffic growth increases the Do-Nothing total flow, while the development trips remain constant for each assessment year.

From the foregoing, it is clear that the proposed development will not have any significant traffic impacts on the road network during the AM or PM peak period, and the volume of off-peak movements are also at a level which will not result in operational issues for the road network or impact on road user safety.

5.3 Operational Traffic Mitigation Measures

It is submitted that there are no specific traffic mitigation measures required to accommodate the proposed development other than the proposed revisions to the Brownsbarn access road to the southwest of Roundabout 2 to prove improved traffic management and geometry to accommodate the future flows and vehicle types using the access roadway.

6 SUMMARY

6.1 GENERAL

Stephen Reid Consulting Traffic and Transportation Limited (SRC) have prepared this report on behalf of Exeter Ireland Property IV B Limited in support of a planning application to be submitted to South Dublin County Council (SDCC) for development of lands adjacent to N7 Junction 3 at Brownsbarn, Citywest, Dublin 24.

The development comprises construction of 2no. commercial warehouses with ancillary office accommodation and staff welfare totalling 14,146sq. m GFA.

A revised access roadway is proposed with the removal of the small diameter roundabout to the southeast of Citywest Roundabout 2. The access road will have new priority junctions serving the car park accesses to each unit and the existing Brownsbarn building (occupied by Specialized cycle retail outlet) and separate priority junctions serving the HGV yard for each Unit.

Extension to the existing footpaths will link the pedestrian access of each unit to the existing footpaths.

The car park for staff and visitors is accessed separately from the HGV access to the marshalling yards and loading dock areas, to mitigate potential for conflict between HGVs maneuvering and staff parking and walking/cycling int/out of each Unit. Unit 1 will be served by 59 car parking spaces (including 4 disabled spaces and 10% EV charging spaces), and 24 cycle parking spaces, while Unit 2 will be served by 50 car parking spaces (including 3 disabled spaces and 10% EV charging spaces), and 24 cycle parking spaces. The parking provision is within the Maximum standards required in the Development Plan and is therefore appropriate for the site location and the proposed end users.

Pedestrians will not be permitted to walk through the vehicle access gates, limiting interaction with cars within the car park areas. Within the car park area, pedestrian routes link to the reception/main entrance of each Unit.

No pedestrians, cyclists or staff/visitor cars will be permitted to use the HGV accesses to enter/exit the development.

Traffic count data from pre-Covid surveys in February 2020 was used to create baseline robust flows and factored using TII rates for the predicted opening and design years.

Traffic generation has been based on TRICS data for similar land uses.

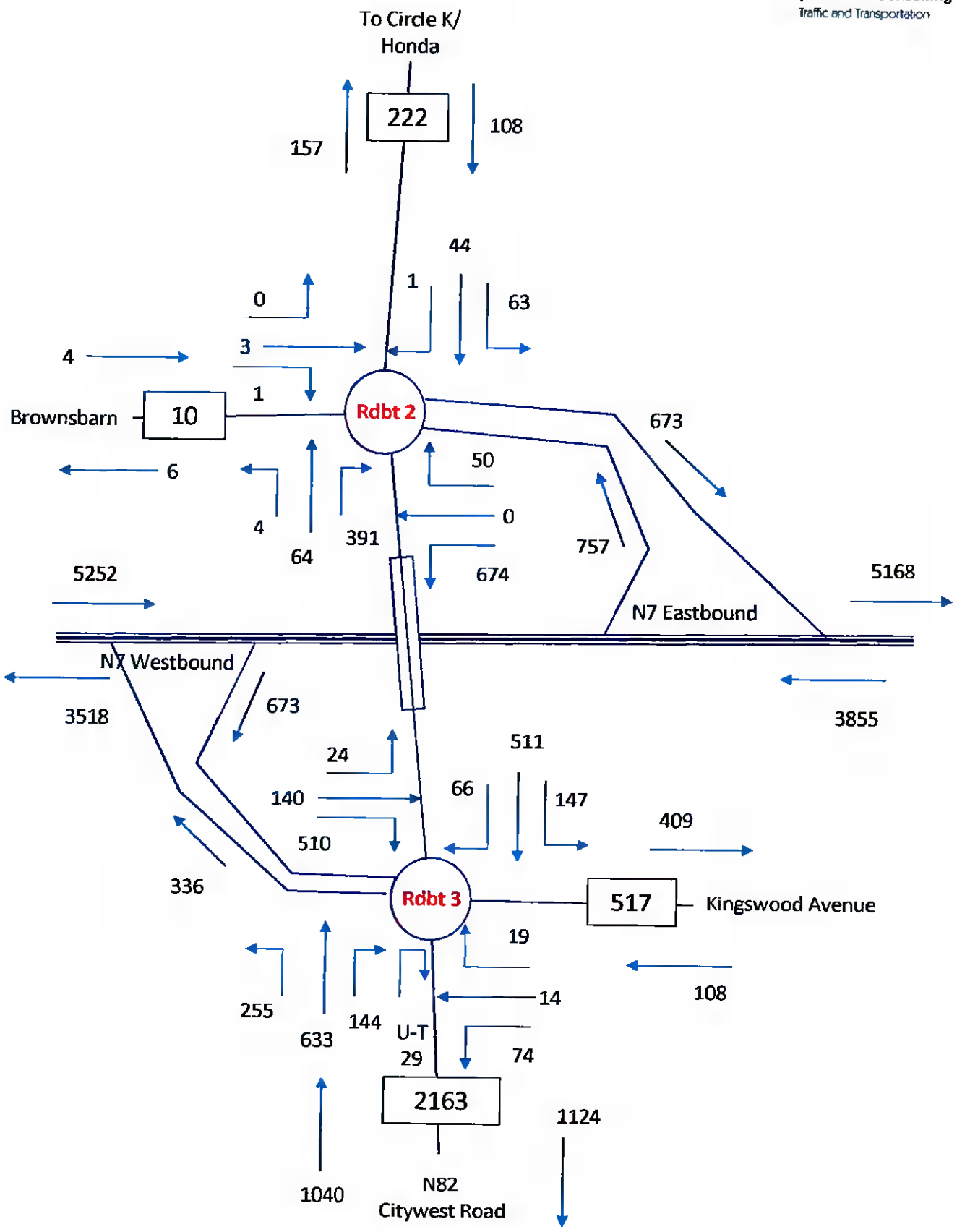
It can be seen from the commentary in this TIA that the volumes of traffic generated by the proposed development will not be significant during the network peak hours, and this can be accommodated by the proposed access arrangements and internal layout measures without excessive queuing or delays.

Therefore, it is submitted that the development as proposed is in accordance with the proper planning and sustainable development of the area.

Stephen Reid Consulting Traffic and Transportation
02.06.2021

Appendices

Stephen Reid Consulting
Traffic and Transportation



Traffic Counts Thursday 27th February 2020
flows in pcu/hr

Diagram 1(a) : 2020 Weekday AM Peak Hour 08.00-09.00

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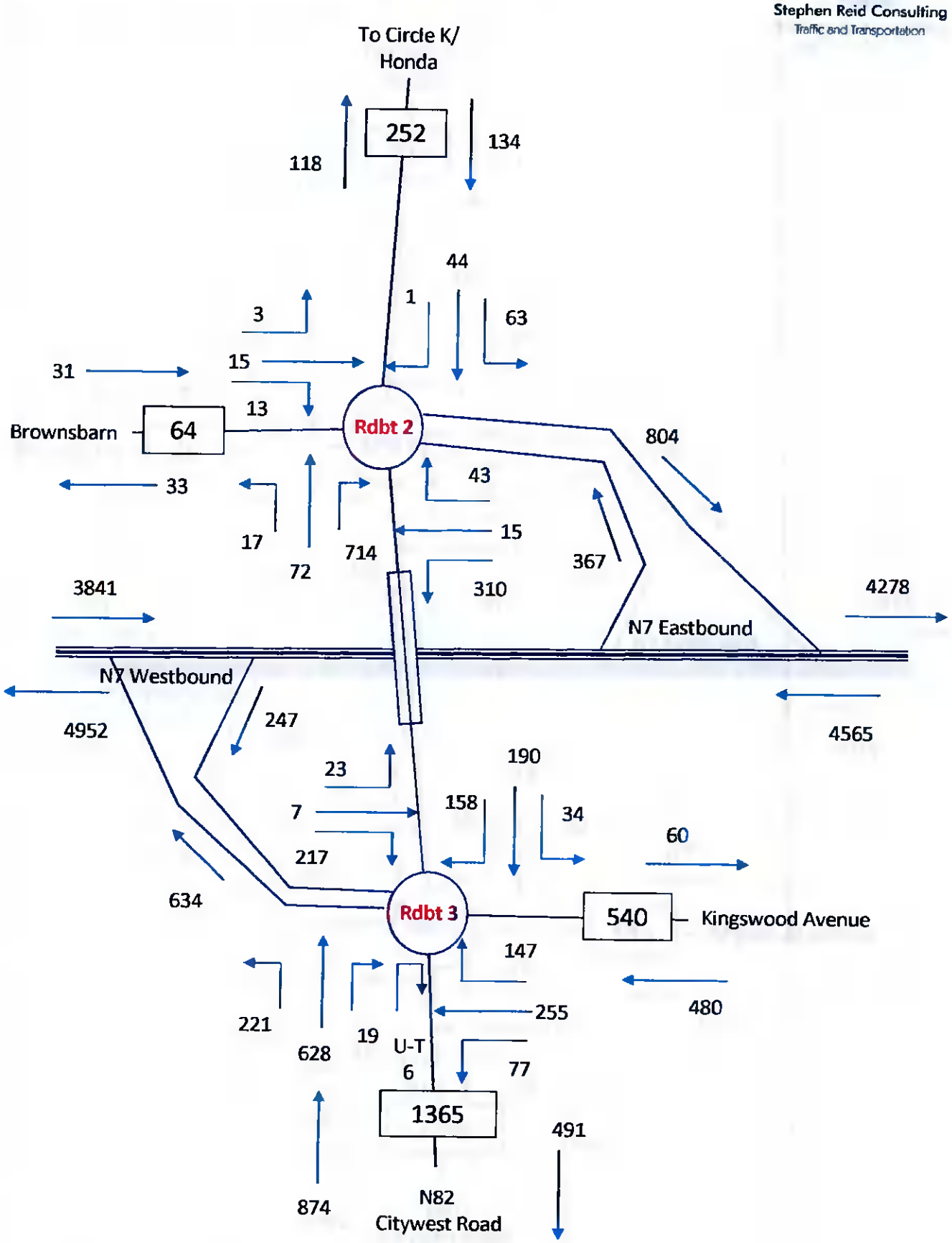

Traffic Counts Thursday 27th February 2020
flows in pcu/hr

Diagram 1(b) : 2020 Weekday PM Peak Hour 16.30-17.30

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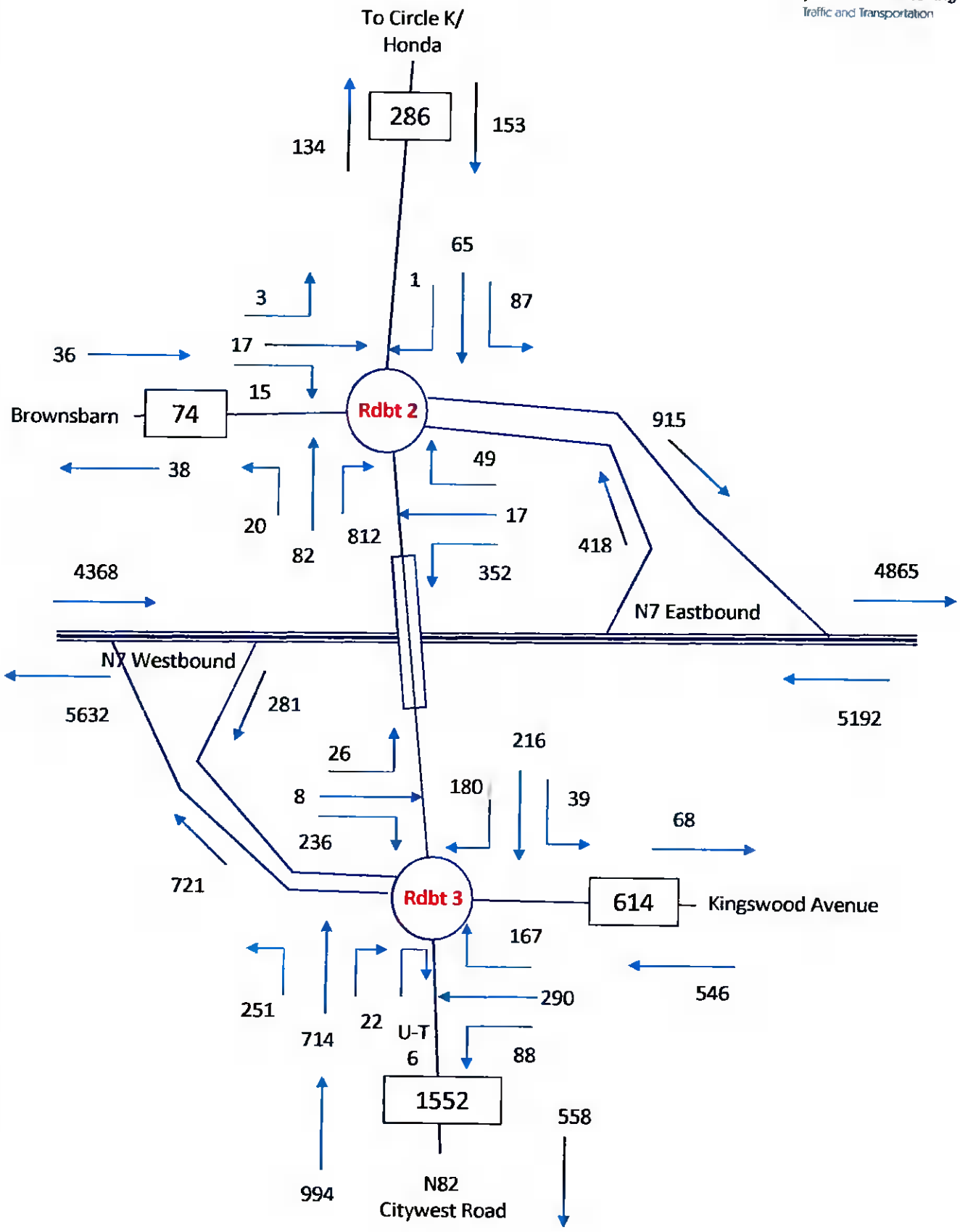

Diagram 1(b) Flows x TII PAG Growth Factor
Flows in pcu/hr

Diagram 3(b) : 2028 Weekday PM Peak Hour 16.30-17.30 – Do Nothing

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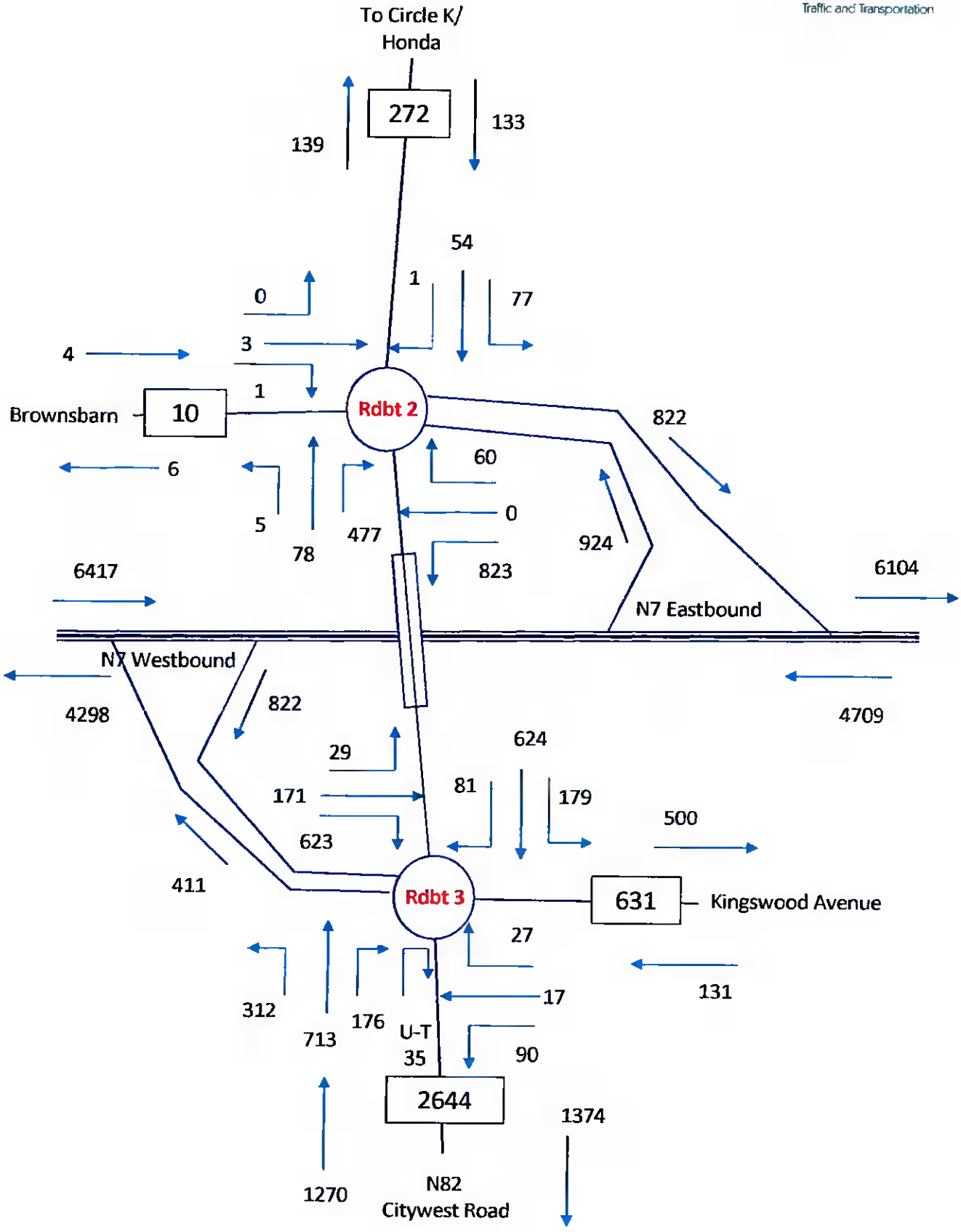

Diagram 1(a) Flows x TII PAG Growth Factor
Flows in pcu/hr

Diagram 4(a) : 2038 Weekday AM Peak Hour 08.00-09.00 - Do Nothing

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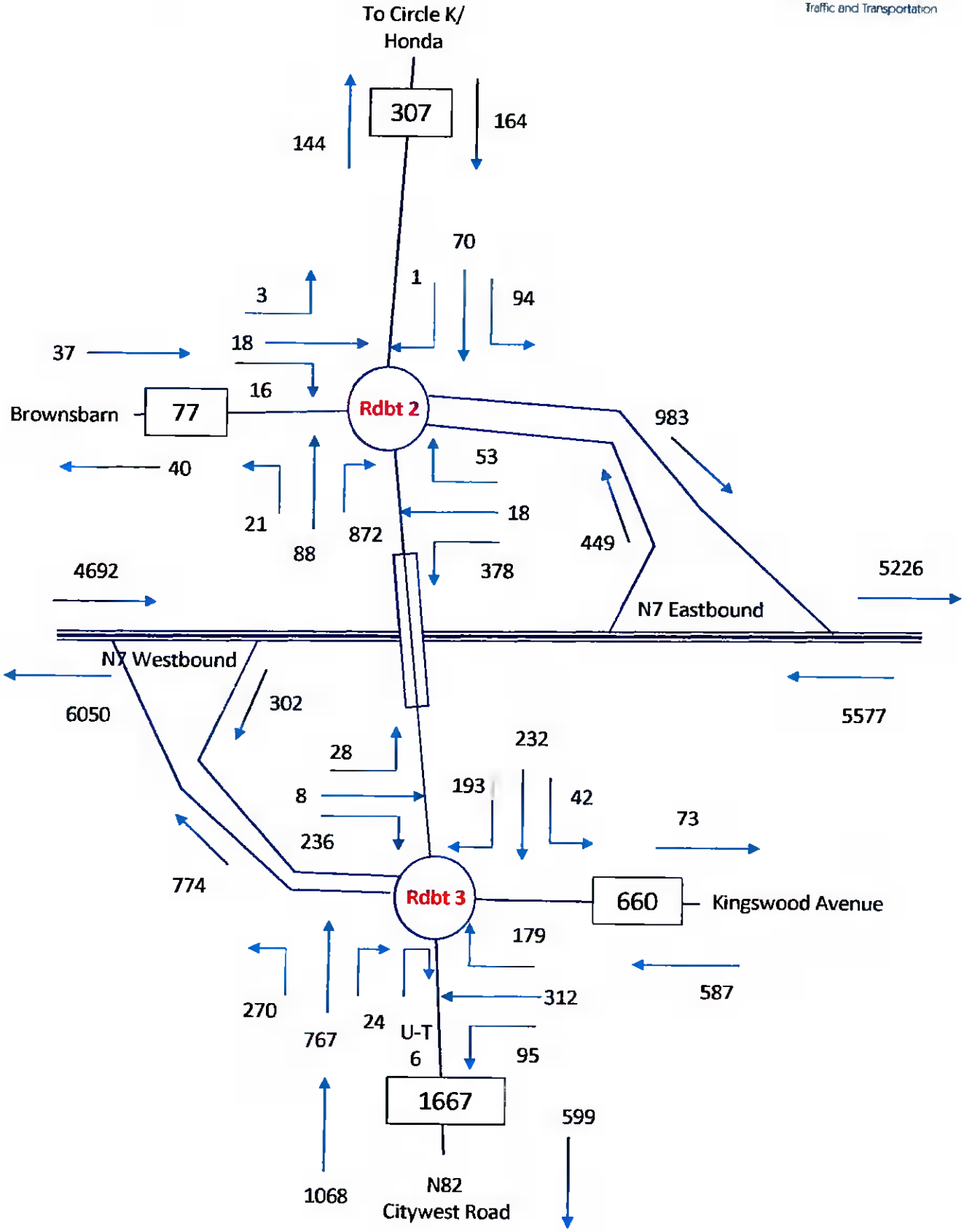

Diagram 1(b) Flows x TII PAG Growth Factor
Flows in pcu/hr

Diagram 4(b) : 2038 Weekday PM Peak Hour 16.30-17.30 – Do Nothing

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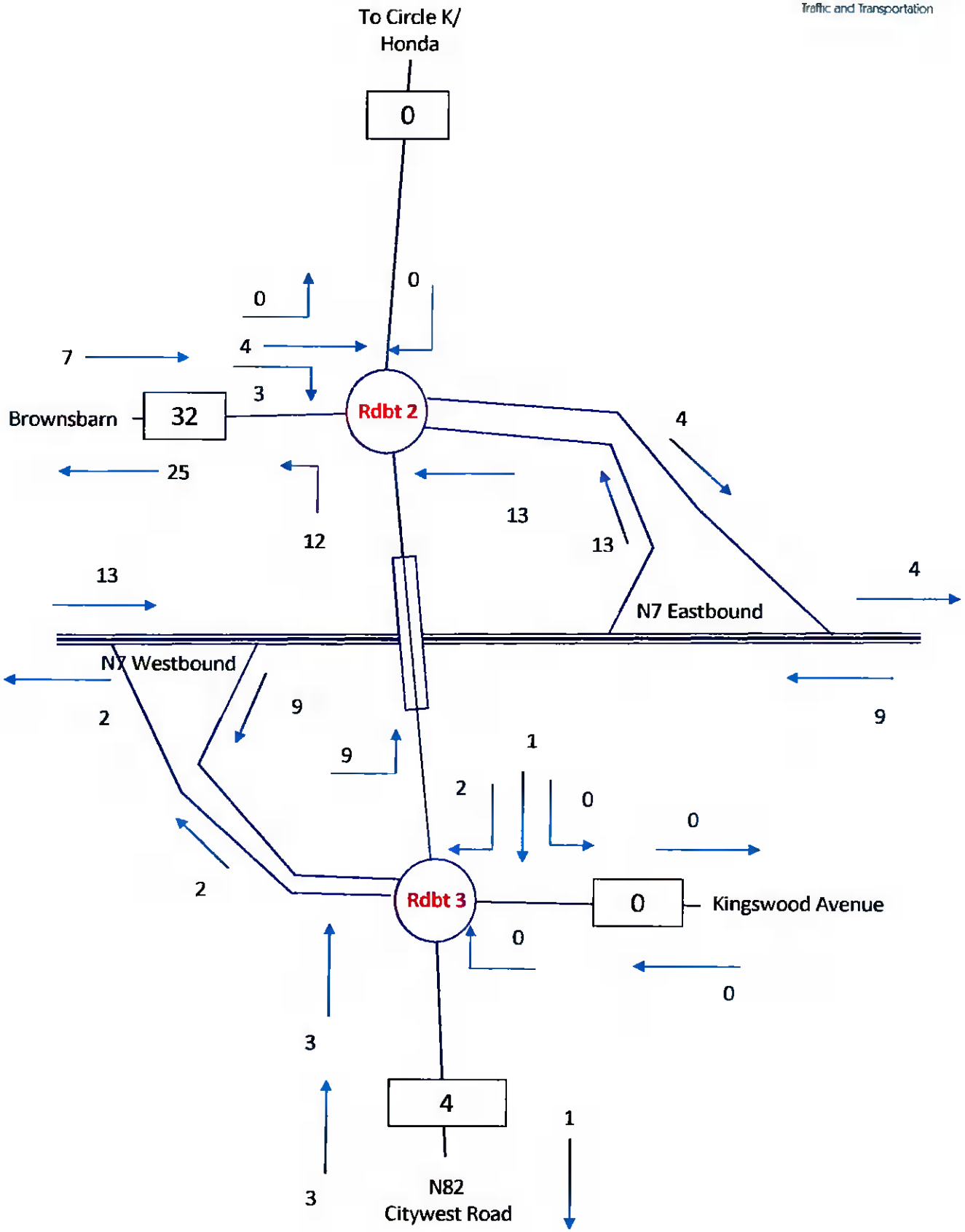

See Chapter 4 of TIA for Trip Rates and Vehicle Trips
Flows in pcu/hr

Diagram 5(a) : Development Vehicle Trips Weekday AM Peak Hour 08.00-09.00

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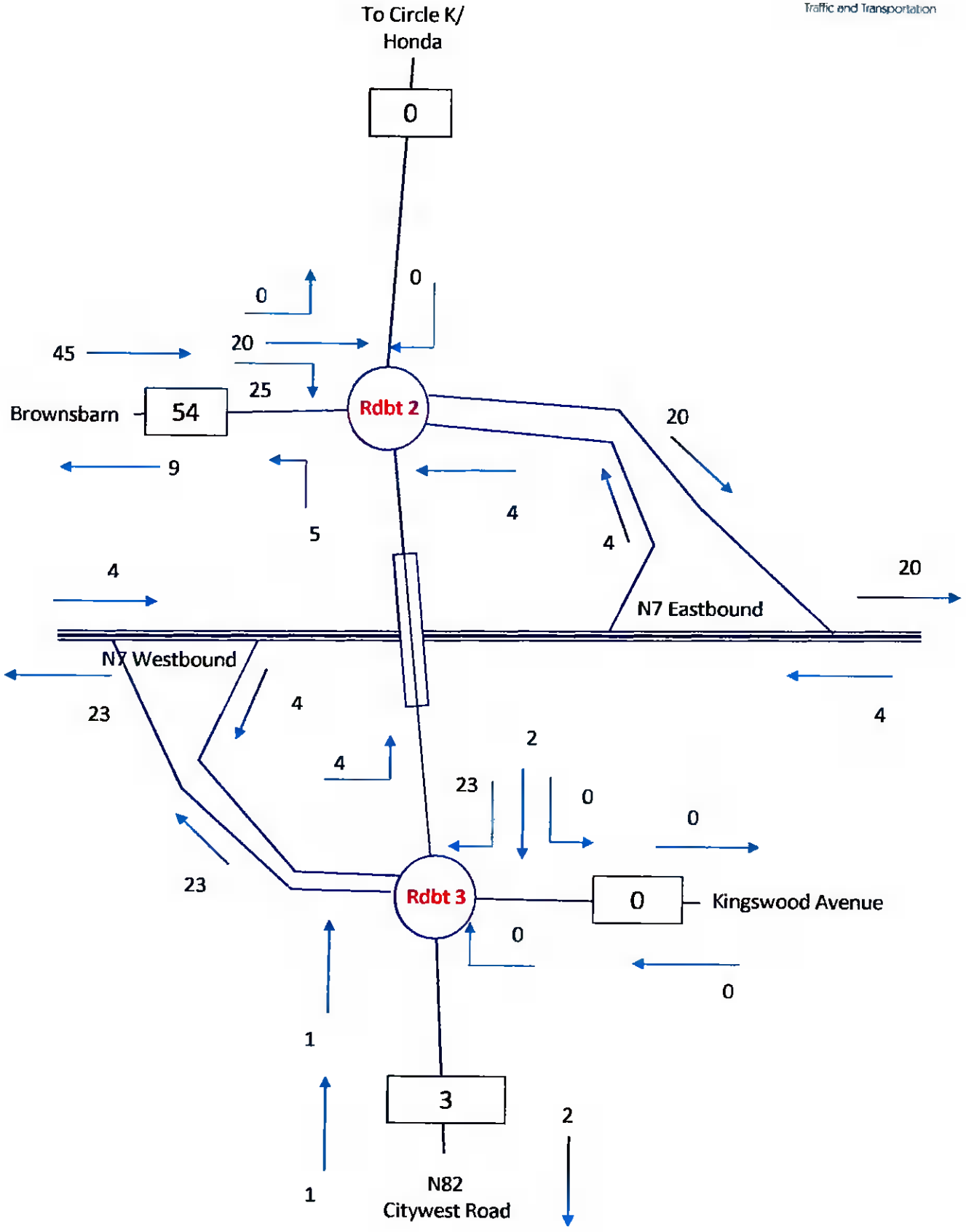

See Chapter 4 of TIA for Trip Rates and Vehicle Trips
Flows in pcu/hr

Diagram 5(B) : Development Vehicle Trips Weekday PM Peak Hour 16.30-17.30

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	**3**	**6600**	**0.662**	3	6600	0.045	**3**	**6600**	**0.707**
08:00 - 09:00	3	6600	0.177	3	6600	0.051	3	6600	0.228
09:00 - 10:00	3	6600	0.091	3	6600	0.071	3	6600	0.162
10:00 - 11:00	3	6600	0.071	3	6600	0.091	3	6600	0.162
11:00 - 12:00	3	6600	0.066	3	6600	0.076	3	6600	0.142
12:00 - 13:00	3	6600	0.066	3	6600	0.126	3	6600	0.192
13:00 - 14:00	3	6600	0.197	3	6600	0.136	3	6600	0.333
14:00 - 15:00	3	6600	0.207	3	6600	0.136	3	6600	0.343
15:00 - 16:00	3	6600	0.106	3	6600	0.152	3	6600	0.258
16:00 - 17:00	3	6600	0.101	**3**	**6600**	**0.520**	3	6600	0.621
17:00 - 18:00	3	6600	0.020	3	6600	0.116	3	6600	0.136
18:00 - 19:00	3	6600	0.035	3	6600	0.232	3	6600	0.267
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.799			1.752			3.551

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*