

**LAND OFF SPEKE BOULEVARD,
SPEKE**

PEEL DEVELOPMENTS (UK) LTD

TRANSPORT ASSESSMENT

TTHC

St James Building
79 Oxford Street
Manchester
M1 6EJ
Telephone (0161) 235 8600
Facsimile (0161) 235 8601
www.tthc.co.uk

TTHC Ref: M10037-03 TA
Date: June 2011

CONTENTS	PAGE NO
INTRODUCTION	1
SITE LOCATION AND ACCESSIBILITY	2
DEVELOPMENT PROPOSALS AND TRIP GENERATION	7
TRANSPORT IMPLICATIONS	11
PERSONAL INJURY ACCIDENT ANALYSIS	17
CONCLUSION	18

TABLES

Table 1	Suggested Acceptable Walk Distances
Table 2	Train Service Frequency
Table 3	TRICS Trip Rates
Table 4	TRICS Trip Generation
Table 5	Site Trip Generation by Trip Type
Table 6	Site Access / Speke Boulevard Junction LINSIG Results
Table 7	Speke Boulevard / Speke Hall Avenue LINSIG Results: AM Peak Hour
Table 8	Speke Boulevard / Speke Hall Avenue LINSIG Results: PM Peak Hour
Table 9	Site Access / Speke Boulevard Junction LINSIG Results: Sensitivity Test
Table 10	Speke Boulevard / Speke Hall Avenue LINSIG Results: Sensitivity Test
Table 11	Comparison of Actual and Predicted Average Junction Accident Rates

FIGURES

Figure 1	Site Location Plan
Figure 2	Local Area Plan
Figure 3	LCC Cycle Map
Figure 4	2km Walk and 5km Cycle Catchments
Figure 5	Bus Stop Location Plan

APPENDICES

Appendix A	Site Layout Plan
Appendix B	Bus Service Data
Appendix C	TRICS Output
Appendix D	Flow Diagrams
Appendix E	Traffic Count Data
Appendix F	LINSIG Outputs
Appendix G	Swept Path Analysis
Appendix H	Personal Injury Accident Data

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

1.0 INTRODUCTION

- 1.1 This Transport Statement has been prepared by TTHC Ltd on behalf of Peel Developments UK Ltd. to support a planning application for a site off Speke Boulevard, Speke, Liverpool.
- 1.2 The proposed development will contain 5 units; 3 restaurant / public house units and 2 drive through / fast food units. 2 of the restaurant / public house units are joined together, with a resultant gross floor area (GFA) of 825 sqm, the remaining units have GFAs of 405 sqm 208 sqm and 297 sqm respectively. Associated parking and delivery facilities will also be provided. This development is proposed, in response to demand from the surrounding hotels commuters and business's identifying a need for food retail in the area.
- 1.3 The location of the application site (the 'Site') is shown in **Figure 1**, and in its local area in **Figure 2**.
- 1.4 This Statement provides information under the following headings:
- Site Location and Accessibility;
 - Development Proposals and Trip Generation;
 - Transport Implications;
 - Personal Injury Accident Analysis.

LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT

2.0 SITE LOCATION AND ACCESSIBILITY

- 2.1 The Site is located immediately south of Speke Boulevard, the A561, close to its junction with Speke Hall Avenue. To the south east of the site lies Speke residential estate and Liverpool John Lennon Airport.
- 2.2 To the west of the Site is the location of a new garden centre, currently under construction for Dobbies, which is scheduled to open in September 2011. A plan of the Site layout, which also shows the adjacent garden centre site, can be seen in **Appendix A**.
- 2.3 As shown in **Appendix A**, the Site is accessed off Speke Boulevard via a signalised junction. The Site access adds a fourth arm to the existing 3-arm junction with Speke Boulevard and Evans Road. This access also serves the garden centre service yard.
- 2.4 The A561, Speke Boulevard, connects with Liverpool City Centre to the west, approximately 12km from the Site. To the east, the A561 connects with Widnes and, via the A5300, the M62. The A561 is a dual carriageway road with a central reservation and, in the vicinity of the Site, is subject to a 40mph speed limit.
- 2.5 As shown in **Appendix A**, once the garden centre is open, its car park will be linked to the Site car park close to Unit A. This will facilitate linked trips between the two sites. The garden centre's main access is off Speke Hall Avenue. Although the link between the two sites would mean that it would be technically possible for vehicles to access the Site from Speke Hall Avenue, by driving through the garden centre site, it is not expected that this would occur frequently, if at all. Furthermore, customer signage will direct garden centre customers to the Speke Hall Avenue entrance. The garden centre access on Speke Hall Avenue is also shown in **Appendix A**.
- 2.6 In addition to the obvious relationships with nearby hotels, the area surrounding the Site comprise of employment and retail uses including

LAND OFF SPEKE BOULEVARD, SPEKE TRANSPORT ASSESSMENT

Venture Point West, Estuary Park, Morrisons Supermarket, New Mersey Shopping Park, Liverpool International Business Park, Jaguar Land Rover and Liverpool John Lennon Airport. The Site's location maximises the potential for pass-by and linked trips, allowing shoppers to combine with other journey purposes (such as the work to home trip), and without any significant diversion from their normal route. This is a key benefit of the Site's location as many of its customers will be making the journey past the Site in any event, which will help to meet Government objectives of minimising vehicle mileage. There is also a pressing need in an area with so many business' for informal meeting places and locations for staff to get food and drinks during lunch times and on the way to and from work.

Walking and Cycling

- 2.7 The Site access road has a 2 metre wide footway running along its west side. This joins with the footway / cycleway that runs along Speke Boulevard, and so provides safe pedestrian access to the Site. Pedestrian and cycle access can also be gained directly from the Speke Boulevard footway / cycleway at two locations, either side of Unit C, as shown in **Appendix A**. The Site access junction also contains pedestrian and cycle crossing facilities. This enables safe crossing for pedestrians and cyclists, and also maintains the safe pedestrian / cycle route that runs along Speke Boulevard.
- 2.8 The Site would also be accessible via Speke Hall Avenue and the garden centre access. Speke Hall Avenue has wide footways and cycle lanes in both directions, which link to the pedestrian cycle provision running along Speke Boulevard.
- 2.9 Pedestrian and cycle crossing facilities are also located on Speke Boulevard, immediately east of the Site access junction. This provides safe crossing and access to the Venture Point West employment area and also the footway and cycleway that runs along the north side of Speke Boulevard.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

2.10 With consideration to walking distances, the Institute of Highways and Transportation (IHT) produced their 'Guidelines for Journeys on Foot' in 2000 which suggests that around 80% of walk journeys and walk stages in urban areas are less than 1 mile with the average length of a walk journey being just 1km. Planning Policy Guidance Note 13 'Transport' (PPG13) recognises that walking is the most important mode of travel at the local level, and has the greatest potential to replace car trips for distances up to 2 kilometres.

2.11 The distance that people are prepared to walk depends somewhat on the journey purpose. The IHT guidance also provides 'suggested acceptable walking distances', which are shown in **Table 1** below.

	Commuting, school & sightseeing	Elsewhere
Desirable	500	400
Acceptable	1000	800
Preferred Maximum	2000	1200

Table 1: Suggested Acceptable Walking Distances

2.12 The application of the 1.2km Preferred Maximum walk distance to the Site for customers, and 2km for staff, provides a substantial walk in catchment for the Site. Given the nature of the proposed development, it is not expected that a large proportion of customer trips will be by foot. However, the Site's proximity to high density housing and employment provides the potential for access by foot, particularly for staff. Trips from the nearby Holiday Inn Express hotel are also likely to be by foot. As such, pedestrian accessibility of the Site remains important for those who choose to walk.

2.13 PPG13 states that cycling can substitute car trips, particularly for journeys under 5km. The Site's cycle catchment extends to cover the entire Speke residential estate, and also reaches out to Halewood, Garston, Allerton and Woolton. There are numerous on-road cycle routes and traffic free cycle paths surrounding the Site. These routes are shown on a cycle map

LAND OFF SPEKE BOULEVARD, SPEKE TRANSPORT ASSESSMENT

produced by Liverpool City Council (LCC), an extract of which is shown in **Figure 3**. These facilities, along with the surrounding quiet residential roads, provide suitable routes for cyclists to access the Site. The Site's 2km walk and 5km cycle catchments are shown in **Figure 4**.

Bus

- 2.14 The Site is highly accessible by public transport, with the closest bus stop located on Speke Boulevard, immediately east of the Site access. This stop is served by 11 bus services, many of which are high frequency services. As such, this bus stop is served by approximately 18 buses per hour during weekdays. Destinations of buses calling at this stop include Liverpool City Centre, Liverpool John Lennon Airport, Bootle and Runcorn.
- 2.15 There are an additional 6 bus services stopping close to the Site on Speke Hall Avenue / Speke Road. In addition to the destinations discussed above, these services give access to Halewood and Liverpool South Parkway / Belle Vale circular services. There are approximately 6 buses per hour calling at these stops during weekdays. **Figure 5** shows the location of bus stops and services in relation to the Site, with bus service and frequency data shown in **Appendix B**.

Rail

- 2.16 The two closest rail stations to the Site are Liverpool South Parkway and Hunts Cross, these are shown on **Figure 2**. Liverpool South Parkway is located approximately 3km from the Site and provides connections to Liverpool City Centre, Warrington, Manchester, Birmingham and Wolverhampton on the City Line and Bootle, Formby and Southport on the Northern Line.
- 2.17 Hunts Cross Station is located approximately 2km from the Site giving access to the Northern Line which provides links to local stops, Liverpool City Centre with Southport being the northern terminus.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

2.18 The frequency of trains serving Liverpool South Parkway and Hunts cross stations are shown in **Table 2** below.

Station	Destination	Monday to Saturday (minutes)		Sunday
		AM peak	PM peak	
Liverpool South Parkway	Southport (via Liverpool Centre, Bootle, Formby)	15	15	30
	Manchester Oxford Road (via Warrington)	30	30	60
	Birmingham New Street (via Runcorn)	30	30	60
	Wolverhampton	30	30	60
Hunts Cross	Liverpool City Centre & Southport	15	15	30

Table 2: Train Service Frequency

2.19 Regular bus links run between Liverpool South Parkway and Liverpool Airport providing a safe and efficient means of access to train services. The buses are frequent and the journey time is approximately 10 minutes. Bus services 80 and 180 link the Site with Liverpool South Parkway. Additional bus services from the Liverpool John Lennon Airport bus terminal, approximately 1.5km from the Site, travel direct to Liverpool South Parkway.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

3.0 DEVELOPMENT PROPOSALS & TRIP GENERATION

Development Proposals

- 3.1 The proposed development will contain 5 units; 3 restaurant / public house units and 2 drive through / fast food units. 2 of the restaurant / public house units are joined together, with a resultant gross floor area (GFA) of 825 sqm, the remaining units have GFAs of 405 sqm 208 sqm and 297 sqm respectively. The Site layout is shown in **Appendix A**.
- 3.2 There will be parking provision for 285 cars, 14 of which will be disabled spaces. Disabled spaces are provided at each unit, and in all cases are located close to the building entrance. Cycle parking is also provided throughout the site, close to building entrances. A total of 50 cycle spaces are provided at the Site. The above level of parking provision is in line with LCC's parking standards.

Overflow Parking

- 3.3 As discussed in Section 2, there will be a link between the Site car park and the proposed adjacent garden centre car park. An agreement has been made with the operator of the garden centre that 150 of the Site's car parking spaces will be available as overflow parking for the garden centre, should they be needed. It is anticipated that the garden centre would only have the potential need for these spaces during particular peak trading periods in the year, such as Bank Holidays and Christmas.
- 3.4 The full details of the overflow parking facility and its operation will be set out in a Car Park Management Plan, produced by the garden centre operator. Given the difference in daily peak trading hours between the Site and the garden centre, and the potential for linked trips with the garden centre which is found at other garden centres run by Dobbies where they have adjacent

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

food operators, there should be sufficient car park capacity to accommodate any overflow need.

Trip Generation

- 3.5 The Site will attract a large proportion of its clientele from the nearby hotels and the surrounding retail and employment areas, particularly given its proximity to a major road. There is a local need for public houses, restaurants and takeaway facilities in the vicinity of the Site. The Speke residential area currently has limited access to the type of facilities proposed at the Site. The surrounding employment population will also make use of the Site either before or after work or during lunch times. The Site could also be used as a venue for informal business meetings. A large proportion of pass-by trips to and from the airport are also expected.
- 3.6 Given the above, the number of 'new' trips generated by the site will be low, with the majority of trips being either linked or pass by trips already on the surrounding highway network.
- 3.7 In order to establish the likely vehicular trip generation of the Site, the TRICS trip generation database has been used to obtain trip rates from similar pub / restaurant and drive through / fast food sites. The site selection parameters used were as follows:
- Exclusion of sites in Greater London, Wales, Scotland and Ireland;
 - Exclusion of sites in a 'Town Centre' location;
 - Sites with a similar GFA to the proposed units;
 - Exclusion of surveys on Mondays, Fridays, Saturdays or Sundays (for the drive through units).
- 3.8 The only weekday data in the TRICS database for Pub / Restaurant sites is Friday data. As such, Friday data has been used to establish the trip generation for pub / restaurant units.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

- 3.9 The resulting trip trips rates for the proposed unit types are shown in **Table 3** below, with the TRICS output shown in **Appendix C**.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

	AM PEAK		PM PEAK	
	IN	OUT	IN	OUT
Pub / Restaurant	0	0	6.490	4.142
Drive Through	18.838	17.034	15.78	13.436

Table 3: TRICS Trip Rates

3.10 Based on the above trip rates, the Site units would generate the following trips.

		AM PEAK		PM PEAK	
		IN	OUT	IN	OUT
Unit A	Pub / Restaurant	0	0	28	18
Unit B	Pub / Restaurant	0	0	26	16
Unit C	Drive Through	39	35	33	28
Unit D	Drive Through	56	51	47	40
Unit E	Pub / Restaurant	0	0	26	17
Total		95	86	160	119

Table 4: TRICS Trip Generation

3.11 As discussed above, given the location of the proposed Site, it is reasonable to assume that a significant proportion of trips to the Site will be either 'pass-by trips' or 'linked trips' with surrounding employment areas, retail areas or the airport terminal. Such trips are not newly generated additional trips on the highway network.

3.12 With reference to the TRICS Research Report 95/2 on pass-by and diverted traffic, it is suggested that around 30% of trips to retail development are likely to be pass-by. Although the research conducted within this study did not specifically investigate the characteristics of fast food Pub / Diner retail uses such as those proposed, it is likely that such developments will attract a similar, if not greater, level of pass-by activity.

LAND OFF SPEKE BOULEVARD, SPEKE TRANSPORT ASSESSMENT

3.13 Similarly, a development such as the proposed, which is surrounded employment areas, retail parks and hotels, would benefit from a linkage of trips with these other activities. For the purpose of this study, it has been assumed that 30% of trips to the Site will be linked with existing uses to other uses within the surrounding area.

3.14 **Table 5** below summarises the assumed trip generation of the Site by each trip type.

	AM PEAK		PM PEAK	
	IN	OUT	IN	OUT
Pass-by	29	26	48	36
Linked	29	26	48	36
'New'	38	34	64	48
Total	95	86	160	119

Table 5: Site Trip Generation by Trip Type

3.15 The above shows the Site would produce, on average, less than two 'new' vehicle movements per minute two-way. This is not considered to be a significant increase. Flow diagrams for the Site are shown in **Appendix D**

Committed Development

3.16 The following developments will be included as committed developments:

- The Former Tea Factory;
- Blue Lands Site.

3.17 The trip generation and distribution of these developments for the AM and PM peak hours is shown in **Appendix D**.

LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT

4.0 TRANSPORT IMPLICATIONS

Operational Analysis

- 4.1 Two junctions have been assessed for this application, the proposed Site access junction with Speke Boulevard and the Speke Boulevard / Speke Hall Avenue signalised crossroads junction.
- 4.2 Both junctions have been modelled using LINSIG V2 software. LCC have supplied the LINSIG file for the Speke Boulevard / Speke Hall Avenue junction. The Site access junction has been 'added' to this file, such that LINSIG models the two junctions working together on the same network.
- 4.3 Traffic counts were undertaken at the above two junctions in May 2010. The data from these counts is shown in **Appendix E**.
- 4.4 It is estimated that the Site will be completed in 2012. As such, this has been used as the 'base' year for operational analysis. The Department for Transport's 'Guidance on Transport Assessment' document suggests that future year assessments be undertaken 5 years after registration of the Planning Application. However, at the request of LCC, a future year scenario of five years after assumed opening (2017) has been analysed.
- 4.5 Growth factors have been established following WebTAG guidance, using TEMPRO / NTM data. The resultant traffic flows for the junctions of interest are shown in **Appendix D**.
- 4.6 A summary of the LINSIG outputs is shown below, with the full LINSIG outputs shown in **Appendix F**.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

Arm	Movement	AM Peak Hour				PM Peak Hour			
		2012 Base + Development		2017 Base + Development		2012 Base + Development		2017 Base + Development	
		Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)
Speke Road	Ahead	36	0	39	1	43	1	46	1
	Ahead and Left	36	5	39	7	43	11	46	14
	Right	23	1	23	1	39	3	43	3
Site Access	All Movements	20	3	20	3	30	4	30	4
Venture Point	All Movements	35	2	38	2	45	3	47	3
Speke Boulevard	Ahead and Left	79	48	85	57	61	30	64	33
	Right	6	0	7	0	14	1	15	1

Table 6: Site Access / Speke Boulevard Junction LINSIG Results

- 4.7 As shown above, the site access junction operates within capacity during the AM and PM peak periods in both 2012 and 2017. The Degree of Saturation does not exceed 85% or 64% on any approach, in the AM and PM peak respectively and, as such, the junction would operate within capacity in all scenarios. Results for the Base scenario are not shown as the Site access does not exist in these scenarios.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

Arm	Movement	2012 Base		2012 Base + Development		2017 Base		2017 Base + Development	
		Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)
Speke Boulevard	Ahead	62	13	64	14	68	16	69	16
	Left	38	8	39	8	40	8	41	8
	Ahead	64	16	64	17	68	17	70	19
	Right	78	12	79	12	83	13	84	13
Speke Road	Ahead	72	15	78	16	78	17	84	18
	Ahead	72	19	72	18	78	21	78	21
	Left	40	6	41	6	43	6	44	7
	Right	28	2	28	2	29	2	29	2
Speke Hall Road	Ahead	77	13	74	12	81	14	78	13
	Left	39	7	39	7	42	8	41	8
	Right	79	13	77	13	85	15	82	14
Speke Hall Avenue	Ahead	70	8	70	8	74	8	74	8
	Left	17	2	17	2	18	2	18	2
	Right	54	5	55	5	57	5	57	5

Table 7: Speke Boulevard / Speke Hall Avenue Junction LINSIG Results: AM Peak Hour

4.8 **Table 7** shows that the Speke Boulevard / Speke Hall Avenue junction operates within capacity for all scenarios during the AM peak hour. In 2012 with development traffic, the Degree of Saturation does not exceed 79% on any approach, and the maximum increase in MMQ from the base scenario is 1 PCU. In 2017 with development, the Degree of Saturation does not exceed 84% at any approach and the maximum increase in MMQ over the base scenario is 1 PCU. These results show that the addition of development flows causes no significant change to the future year junction operation during the AM peak hour.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

Arm	Movement	2012 Base		2012 Base + Development		2017 Base		2017 Base + Development	
		Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)
Speke Boulevard	Ahead	63	14	64	14	67	15	69	16
	Left	25	6	26	6	27	6	27	6
	Ahead	63	19	64	19	67	20	69	21
	Right	83	10	85	10	89	12	90	12
Speke Road	Ahead	84	20	80	19	77	18	85	21
	Ahead	80	23	85	26	93	34	93	32
	Left	87	19	87	19	91	22	94	23
	Right	42	3	42	3	46	3	46	3
Speke Hall Road	Ahead	54	9	54	9	58	9	58	9
	Left	46	8	46	8	48	9	49	9
	Right	87	16	87	16	92	18	92	18
Speke Hall Avenue	Ahead	63	11	63	11	69	12	66	12
	Left	21	3	21	3	23	4	23	4
	Right	85	15	86	15	93	19	91	18

Table 8: Speke Boulevard / Speke Hall Avenue Junction LINSIG Results: PM Peak Hour

- 4.9 The above PM peak hour results also show that the addition of development flows causes no significant change to future year junction operation. The maximum increase in MMQ following the addition of development traffic is 3 PCUs for both 2012 and 2017. Whilst some arms are approaching their practical capacity during the 2017 PM peak hour, this is the case in both the base and base plus development scenarios. The addition of development flows does not significantly change the operation of these arms compared to the base scenario.

Sensitivity Test

- 4.10 As discussed, the adjacent garden centre will open in September 2011. The combined implication of this development, in addition to the Site, has been assessed by a sensitivity test.

LAND OFF SPEKE BOULEVARD, SPEKE TRANSPORT ASSESSMENT

4.11 The trip generation and distribution of the garden centre has been taken from the associated TA document, and has been included in the LINSIG junction assessment. To reflect the worst case, no adjustment has been made to the garden centre flows to account for linked trips with the Site. Clearly, given the proximity of the Site to the garden centre, linked trips will occur, particularly during the PM peak.

4.12 The results of this 2017 sensitivity test are summarised below, with the full output shown in **Appendix F**.

Arm	Movement	2017 AM Peak Hour		2017 PM Peak Hour	
		Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)
Speke Road	Ahead	39	1	47	1
	Ahead and Left	39	7	47	16
	Right	23	1	43	3
Site Access	All Movements	20	3	30	4
Venture Point	All Movements	38	2	47	3
Speke Boulevard	Ahead and Left	85	58	65	34
	Right	7	0	15	1

Table 9: Site Access / Speke Boulevard Junction LINSIG Results: Sensitivity Test

4.13 As shown above, the junction continues to operate with capacity with the addition of the garden centre flows, with little change over the results shown in **Table 6**.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

Arm	Movement	2017 AM Peak Hour		2017 PM Peak Hour	
		Degree of Sat (%)	MMQ (PCU)	Degree of Sat (%)	MMQ (PCU)
Speke Boulevard	Ahead	68	16	70	16
	Left	41	8	30	7
	Ahead	69	18	70	22
	Right	84	13	95	14
Speke Road	Ahead	81	18	84	20
	Ahead	77	20	94	34
	Left	43	6	94	23
	Right	30	2	49	4
Speke Hall Road	Ahead	83	14	64	10
	Left	42	8	52	9
	Right	85	15	96	20
Speke Hall Avenue	Ahead	75	8	68	13
	Left	18	2	23	4
	Right	58	5	94	21

Table 10: Speke Boulevard / Speke Hall Avenue Junction LINSIG Results: Sensitivity Test

- 4.14 As shown above, the junction continues operate within capacity, with little change over the 'Base + Development' results shown in **Tables 7 and 8**. Given that the sensitivity test does not take into account linked trip making, the actual impact on junction operation would be less than that shown above.

Service Vehicle Access

- 4.15 Service vehicle access to the proposed units has been assessed using AUTOTRACK software. Swept paths showing service vehicle access to each unit are shown in **Appendix G**.
- 4.16 The manoeuvres shown are for a large (16.5m) articulated vehicle, as this vehicle produces the most onerous swept paths. The actual vehicles used to service the units may be smaller than this, and as such would have a less onerous swept path. It has been assumed that some parking spaces could be 'coned off' if necessary as part of the service vehicle access strategy.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

5.0 PERSONAL INJURY ACCIDENT ANALYSIS

5.1 An analysis of the latest 5 years' personal injury accident data has been undertaken for the surrounding area, a summary of which is shown in **Appendix H**.

5.2 The analysis shows there have been 23 accidents in total, the majority of which are 'slight' accidents with 1 'serious' accident.

5.3 This accident history can be compared with the COBA accident prediction model, which predicts the accident rate expected at different junction types. This comparison is shown in **Table 11** below.

	Recorded Average Annual Accident Rate	Coba Predicted Annual Average Accident Rate
Speke Boulevard / Speke Hall Avenue Junction	2.8	8.1
Site Access Junction	0.2	1.6

Table 11: Comparison of Actual and Predicted Average Junction Accident Rates

5.4 As shown above, the accident rates predicted by COBA are significantly greater than those recorded in the vicinity of the Site.

**LAND OFF SPEKE BOULEVARD, SPEKE
TRANSPORT ASSESSMENT**

6.0 CONCLUSIONS

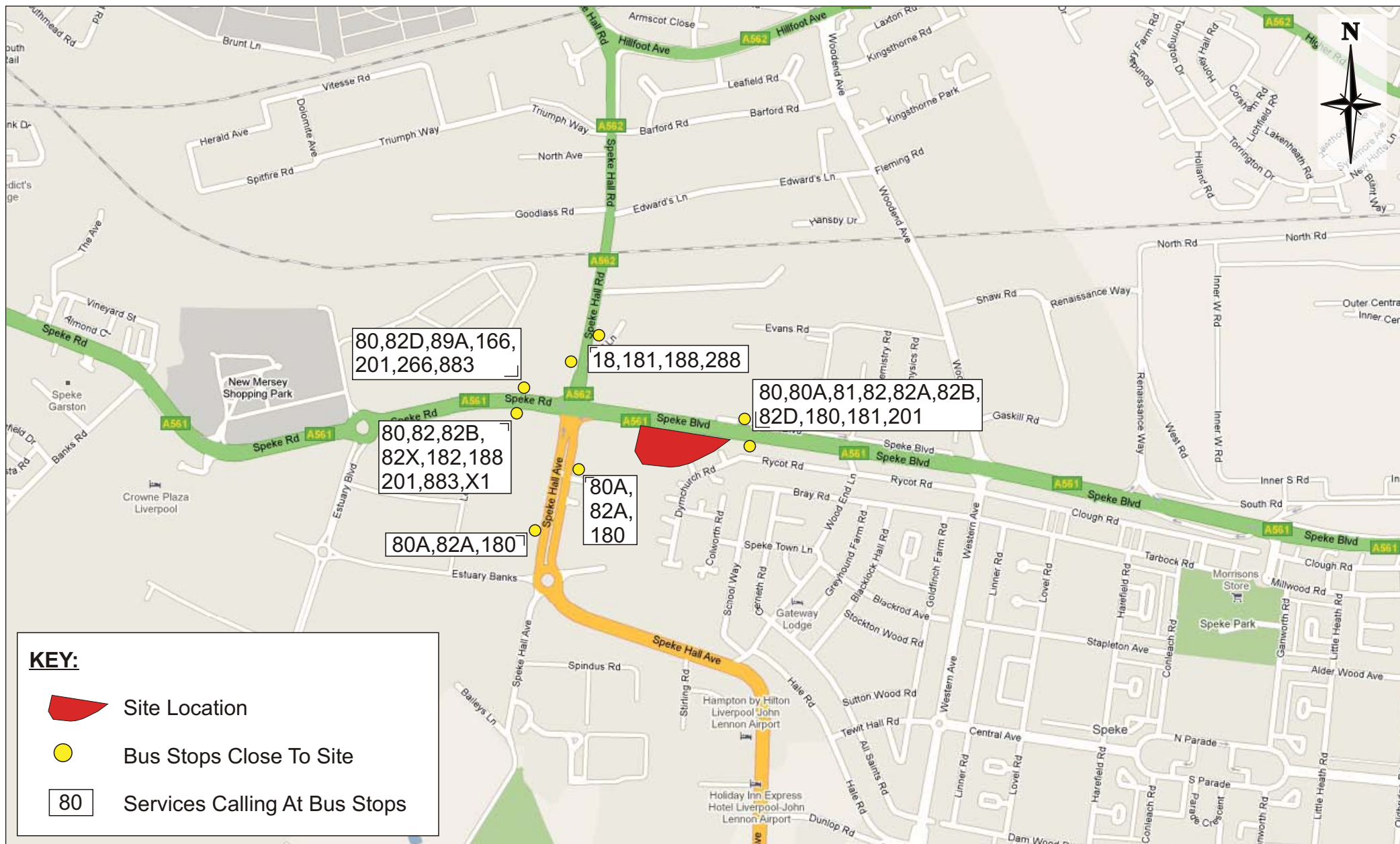
- 6.1 This Transport Assessment has been prepared to assess the transport implications of the proposed development off Speke Boulevard, Speke, Liverpool.
- 6.2 The development will consist of 5 units; 2 drive through / fast food units and 3 restaurant / public house units, with associated parking. This development is proposed, partly, in response to a local need for public houses, restaurants and takeaway facilities in this area.
- 6.3 The site is well served by segregated walk / cycle facilities, which is significant given the proximity of residential areas to the Site. The Site is also well served by public transport, with 19 bus services passing the Site, and with Liverpool South Parkway and Hunts Cross Rail stations both within easy reach.
- 6.4 The location of the Site will result in a large portion of trips being linked with trips to the surrounding retail / employment areas and 'passby' trips already on the highway network. Junction analysis has shown that the addition of development trips on the highway network does not significantly change junction operation.
- 6.5 In conclusion, there are no transport related reasons for not granting planning consent for the proposed development.

FIGURES

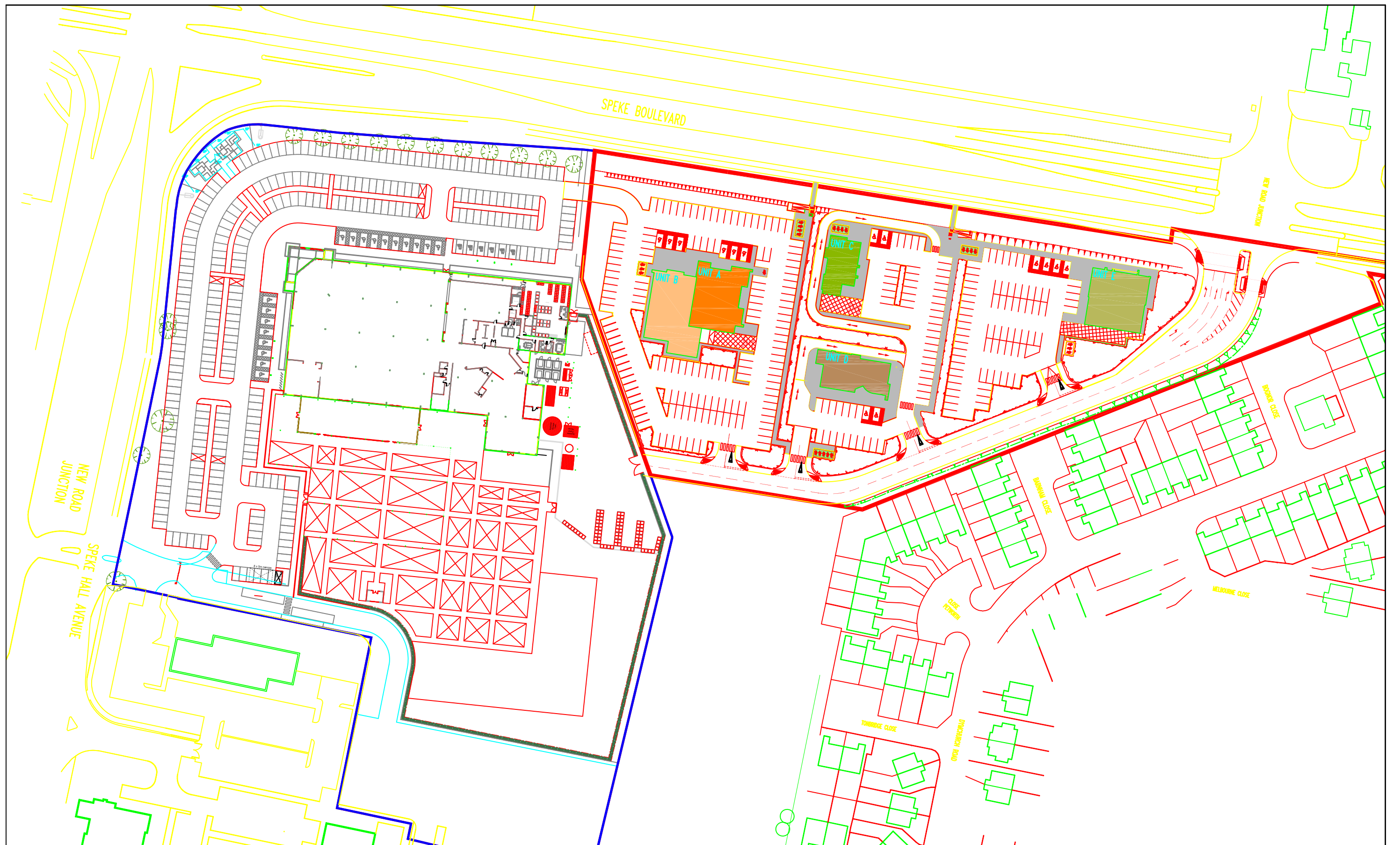




Drawing No	M10073-C-004	Rev	.	LAND OFF SPEKE BOULEVARD, SPEKE CYCLE FACILITIES LOCATION PLAN	
Date	02.08.10	Rev Date	.		
Drawn By	STH	Authorised	.	Scale	NTS @ A4
					FIGURE 3



APPENDIX A



Drawing No.	M10037-A-007	Rev	LAND OFF SPEKE BOULEVARD, SPEKE	
Date	APRIL 11	Rev Date	SITE LAYOUT PLAN	
Drawn By	JE	Authorised	Scale	APPENDIX A
			NTS	

APPENDIX B

APPENDIX B - BUS SERVICE DATA

Service	Journey	Frequency by Direction		
		Mon-Fri	Saturday	Sunday
80	Speke / Liverpool John Lennon Airport -Liverpool	Every 15 mins	Every 20 mins	No Service
80A + 180	Speke / Liverpool John Lennon Airport -Liverpool	Every 30 mins	Every 30 mins	Every 30 mins
81 + 181	Liverpool John Lennon Airport / Speke -Bootle	Every 20 mins	Every 30 mins	Every 30 mins
82 + 82D + 182	Speke -Liverpool	Every 10 mins	Every 10 mins	Every 30 mins
82A	Liverpool - Runcorn	Hourly	Hourly	Hourly
82B	Liverpool - Runcorn	Every 30 mins	No Service	No Service
89A	St Helens - Prescot -Huyton - Liverpool Airport	3 morning services	3 morning services	3 morning services
201	Speke/Springwood Cemetery -Royal Liverpool Hospital	3 services / day	3 services / day	3 services / day
166	Liverpool South Parkway -Belle Vale circulars	Hourly	Hourly	Hourly
266	Liverpool South Parkway -Belle Vale circulars	Hourly	Hourly	No Service
883	Liverpool Airport, Halewood,	Hourly	No Service	No Service
886	Liverpool City Centre-John Lennon Airport	No Service	Every 30 mins	Every 30 mins
X1	Runcorn-Liverpool	Every 30 mins	Every 30 mins	Hourly
288	Liverpool South Parkway -Belle Vale circulars	Hourly	Hourly	No Service

APPENDIX C

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK

Category : C - PUB/RESTAURANT

VEHICLESSelected regions and areas:**02 SOUTH EAST**

EX ESSEX 1 days

HC HAMPSHIRE 1 days

06 WEST MIDLANDS

SH SHROPSHIRE 1 days

WO WORCESTERSHIRE 1 days

Filtering Stage 2 selection:

Parameter: Gross floor area

Range: 450 to 892 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 18/10/08

Selected survey days:

Friday 4 days

Selected survey types:

Manual count 4 days

Directional ATC Count 0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre) 1

Edge of Town 2

Neighbourhood Centre (PPS6 Local Centre) 1

Selected Location Sub Categories:

No Sub Category 4

LIST OF SITES relevant to selection parameters

- | | | | |
|----------|--|--------------------------------|-----------------------|
| 1 | EX-06-C-01 | HARVESTER, COLCHESTER | ESSEX |
| | LONDON ROAD | | |
| | STANWAY | | |
| | COLCHESTER | | |
| | Edge of Town | | |
| | No Sub Category | | |
| | Total Gross floor area: | 450 sqm | |
| | Survey date: FRIDAY | 11/07/08 | Survey Type: MANUAL |
| 2 | HC-06-C-02 | BEEFEATER, EASTLEIGH | HAMPSHIRE |
| | BOURNEMOUTH ROAD | | |
| | AMPFIELD | | |
| | EASTLEIGH | | |
| | Suburban Area (PPS6 Out of Centre) | | |
| | No Sub Category | | |
| | Total Gross floor area: | 450 sqm | |
| | Survey date: FRIDAY | 16/11/07 | Survey Type: MANUAL |
| 3 | SH-06-C-01 | TWO FOR ONE, SHREWSBURY | SHROPSHIRE |
| | WELSHPOOL ROAD | | |
| | BICTON HEATH | | |
| | SHREWSBURY | | |
| | Edge of Town | | |
| | No Sub Category | | |
| | Total Gross floor area: | 892 sqm | |
| | Survey date: FRIDAY | 10/06/05 | Survey Type: MANUAL |
| 4 | WO-06-C-01 | VINTAGE INNS, DROITWICH | WORCESTERSHIRE |
| | WORCESTER ROAD | | |
| | RASHWOOD | | |
| | DROITWICH | | |
| | Neighbourhood Centre (PPS6 Local Centre) | | |
| | No Sub Category | | |
| | Total Gross floor area: | 550 sqm | |
| | Survey date: FRIDAY | 15/03/02 | Survey Type: MANUAL |

OFF-LINE VERSION TTHC Oxford Street Manchester

Licence No: 734101

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/C - PUB/RESTAURANT

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	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	0	0	0.000	0	0	0.000	0	0	0.000
08:00 - 09:00	0	0	0.000	0	0	0.000	0	0	0.000
09:00 - 10:00	0	0	0.000	0	0	0.000	0	0	0.000
10:00 - 11:00	3	597	0.893	3	597	0.446	3	597	1.339
11:00 - 12:00	4	586	3.288	4	586	1.238	4	586	4.526
12:00 - 13:00	4	586	6.576	4	586	3.715	4	586	10.291
13:00 - 14:00	4	586	5.124	4	586	5.594	4	586	10.718
14:00 - 15:00	4	586	3.373	4	586	5.465	4	586	8.838
15:00 - 16:00	4	586	3.074	4	586	3.245	4	586	6.319
16:00 - 17:00	4	586	3.416	4	586	2.391	4	586	5.807
17:00 - 18:00	4	586	6.490	4	586	4.142	4	586	10.632
18:00 - 19:00	4	586	5.508	4	586	5.038	4	586	10.546
19:00 - 20:00	4	586	6.319	4	586	5.209	4	586	11.528
20:00 - 21:00	4	586	4.056	4	586	4.398	4	586	8.454
21:00 - 22:00	4	586	2.946	4	586	4.868	4	586	7.814
22:00 - 23:00	4	586	1.281	4	586	3.459	4	586	4.740
23:00 - 24:00	4	586	0.640	4	586	3.288	4	586	3.928
Total Rates:			52.984				52.496	105.480	

Parameter summary

Trip rate parameter range selected: 450 - 892 (units: sqm)
 Survey date range: 01/01/02 - 18/10/08
 Number of weekdays (Monday-Friday): 4
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
 Category : D - FAST FOOD - DRIVE THROUGH

VEHICLESSelected regions and areas:

02 SOUTH EAST	
HC HAMPSHIRE	1 days
05 EAST MIDLANDS	
NR NORTHAMPTONSHIRE	1 days
06 WEST MIDLANDS	
WM WEST MIDLANDS	1 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
SY SOUTH YORKSHIRE	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
 Range: 220 to 360 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/02 to 25/11/08

Selected survey days:

Tuesday 2 days
 Thursday 2 days

Selected survey types:

Manual count 4 days
 Directional ATC Count 0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre) 2
 Edge of Town 1
 Free Standing (PPS6 Out of Town) 1

Selected Location Sub Categories:

Commercial Zone 1
 Out of Town 1
 No Sub Category 2

LIST OF SITES relevant to selection parameters

- | | | | |
|----------|------------------------------------|--------------------------------|-------------------------|
| 1 | HC-06-D-01 | MCDONALDS, NEAR ROMSEY | HAMPSHIRE |
| | ROMSEY ROAD | | |
| | OWER | | |
| | NEAR ROMSEY | | |
| | Free Standing (PPS6 Out of Town) | | |
| | Out of Town | | |
| | Total Gross floor area: | 279 sqm | |
| | Survey date: THURSDAY | 12/06/03 | Survey Type: MANUAL |
| 2 | NR-06-D-01 | MCDONALDS, NORTHAMPTON | NORTHAMPTONSHIRE |
| | MARQUEE DRIVE | | |
| | NORTHAMPTON | | |
| | Edge of Town | | |
| | Commercial Zone | | |
| | Total Gross floor area: | 220 sqm | |
| | Survey date: TUESDAY | 22/05/07 | Survey Type: MANUAL |
| 3 | SY-06-D-01 | KFC, BARNSELY | SOUTH YORKSHIRE |
| | WAKEFIELD ROAD | | |
| | BARNSELY | | |
| | Suburban Area (PPS6 Out of Centre) | | |
| | No Sub Category | | |
| | Total Gross floor area: | 360 sqm | |
| | Survey date: THURSDAY | 10/04/03 | Survey Type: MANUAL |
| 4 | WM-06-D-01 | BURGER KING, BIRMINGHAM | WEST MIDLANDS |
| | KINGSBURY ROAD | | |
| | ERDINGTON | | |
| | BIRMINGHAM | | |
| | Suburban Area (PPS6 Out of Centre) | | |
| | No Sub Category | | |
| | Total Gross floor area: | 250 sqm | |
| | Survey date: TUESDAY | 25/11/08 | Survey Type: MANUAL |

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH
VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

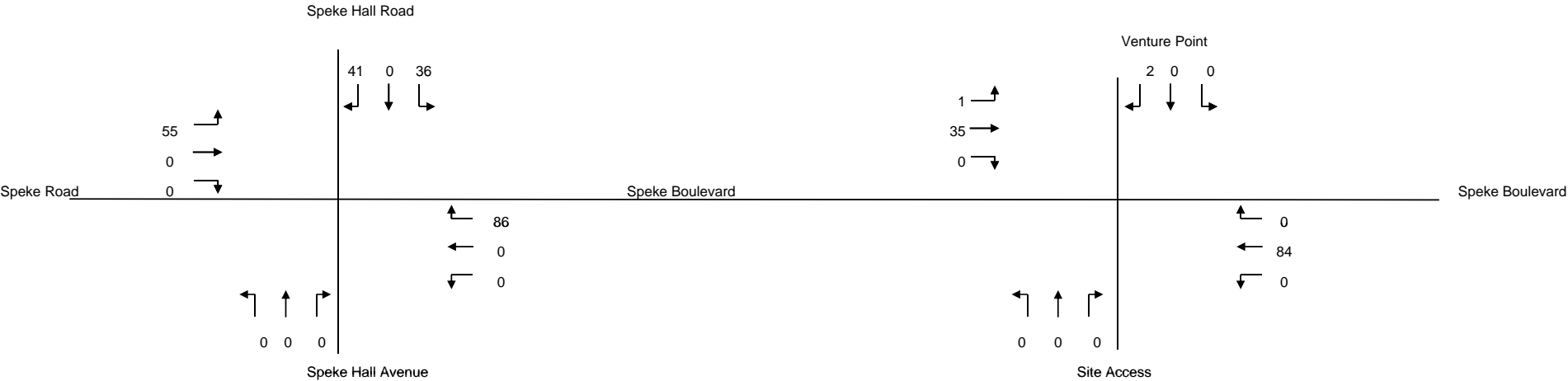
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	2	250	13.026	2	250	11.824	2	250	24.850
08:00 - 09:00	2	250	18.838	2	250	17.034	2	250	35.872
09:00 - 10:00	3	250	14.686	3	250	14.019	3	250	28.705
10:00 - 11:00	3	250	12.016	3	250	12.283	3	250	24.299
11:00 - 12:00	4	277	8.927	4	277	7.665	4	277	16.592
12:00 - 13:00	4	277	17.583	4	277	17.583	4	277	35.166
13:00 - 14:00	4	277	16.952	4	277	16.862	4	277	33.814
14:00 - 15:00	4	277	9.829	4	277	10.821	4	277	20.650
15:00 - 16:00	4	277	11.181	4	277	9.829	4	277	21.010
16:00 - 17:00	4	277	12.353	4	277	13.345	4	277	25.698
17:00 - 18:00	4	277	15.780	4	277	13.436	4	277	29.216
18:00 - 19:00	4	277	17.764	4	277	18.936	4	277	36.700
19:00 - 20:00	3	277	13.735	3	277	14.819	3	277	28.554
20:00 - 21:00	3	277	10.723	3	277	11.807	3	277	22.530
21:00 - 22:00	3	277	5.904	3	277	7.108	3	277	13.012
22:00 - 23:00	2	290	3.793	2	290	4.310	2	290	8.103
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			203.090				201.681		
							404.771		

Parameter summary

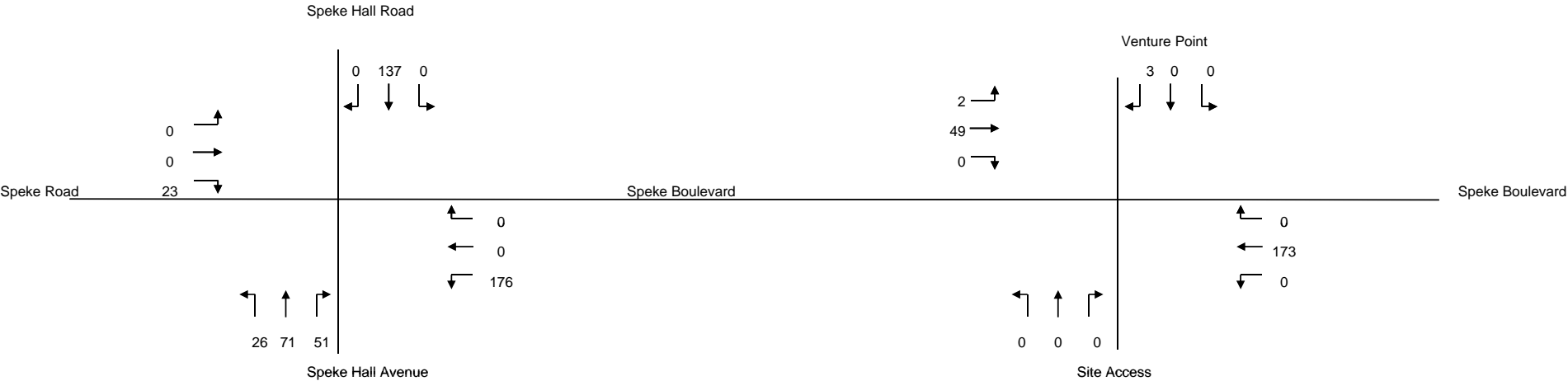
Trip rate parameter range selected: 220 - 360 (units: sqm)
Survey date range: 01/01/02 - 25/11/08
Number of weekdays (Monday-Friday): 4
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 0

APPENDIX D

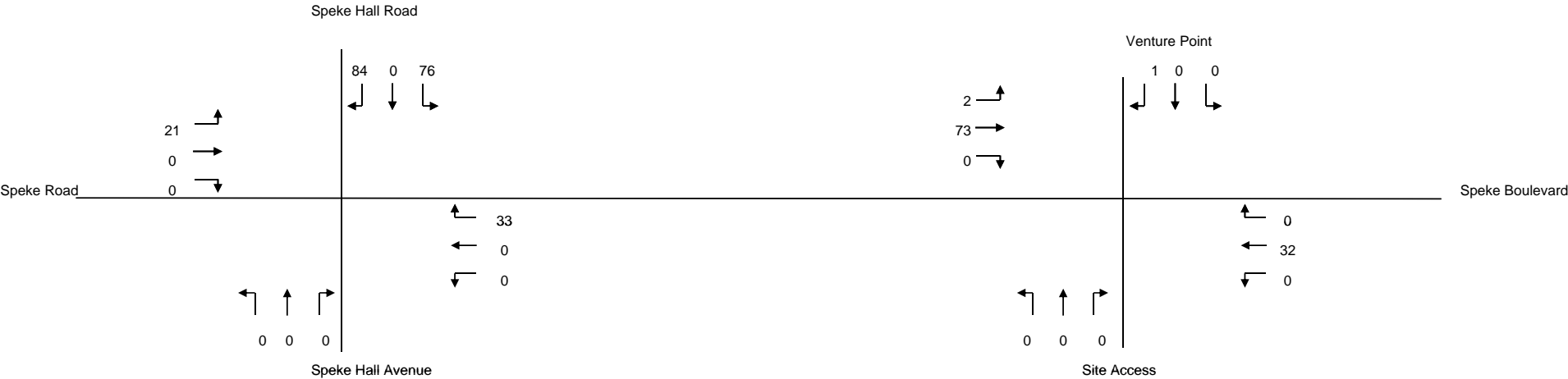
Committed Development Flows - Tea Factory AM (PCUs)



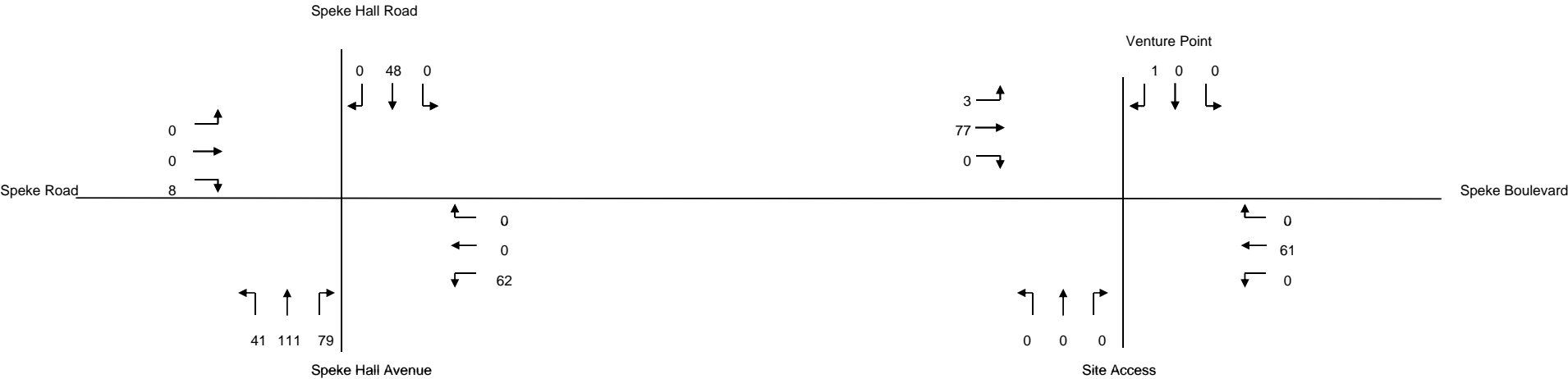
Committed Development Flows - Blue Lands AM (PCUs)



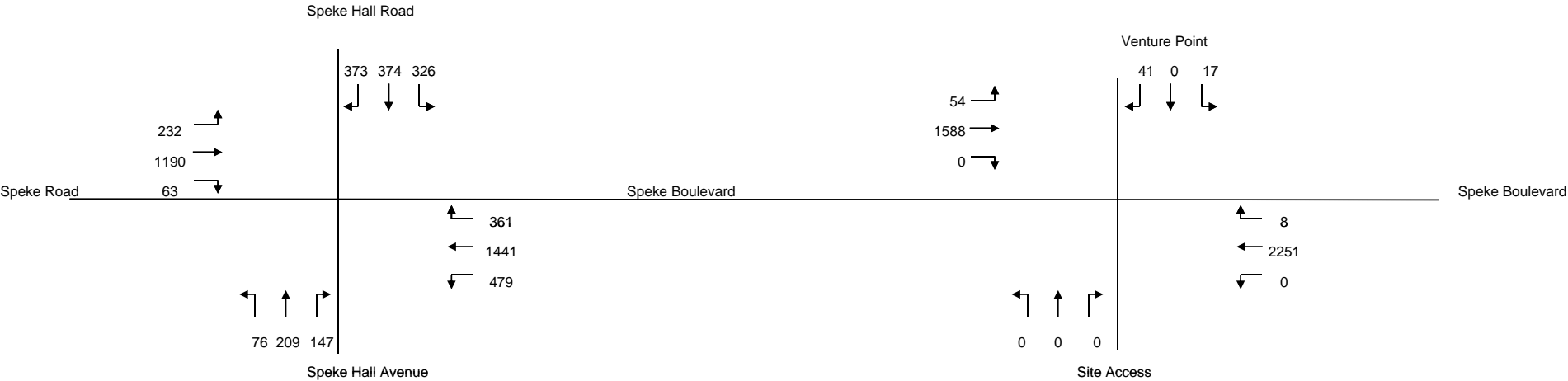
Committed Development Flows - Tea Factory PM (PCUs)



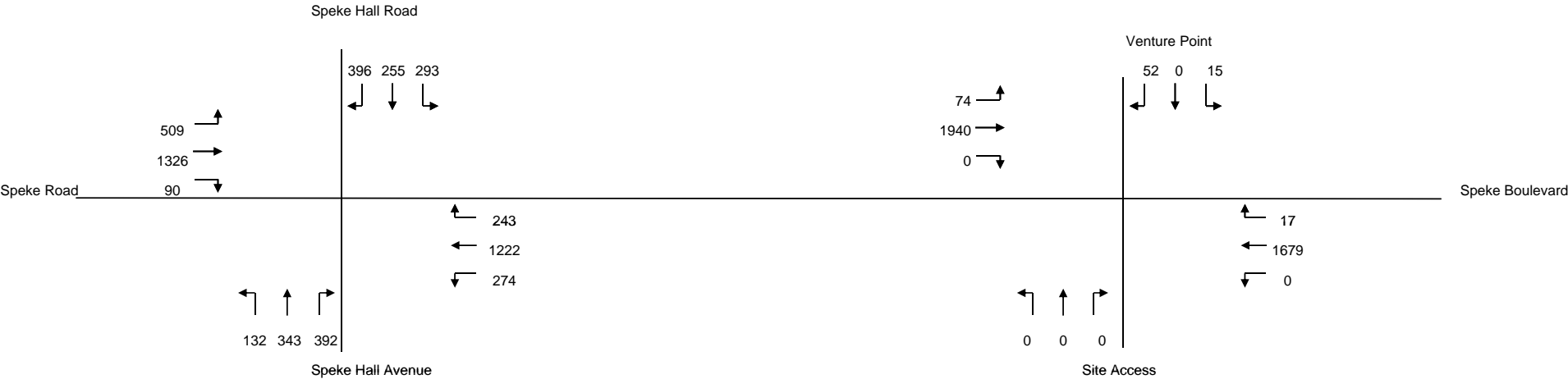
Committed Development Flows - Blue Lands PM (PCUs)



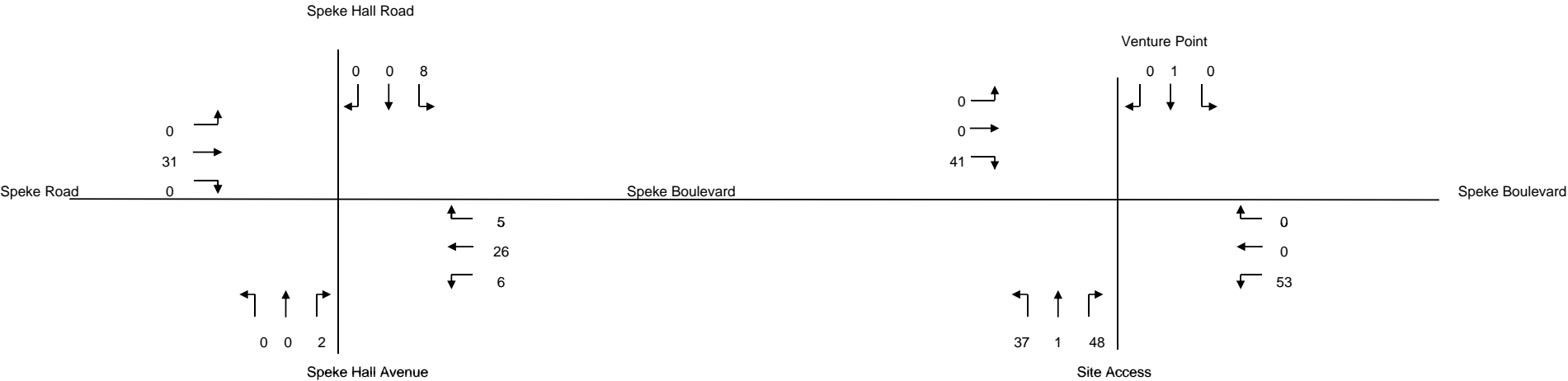
2012 AM Base (PCUs)



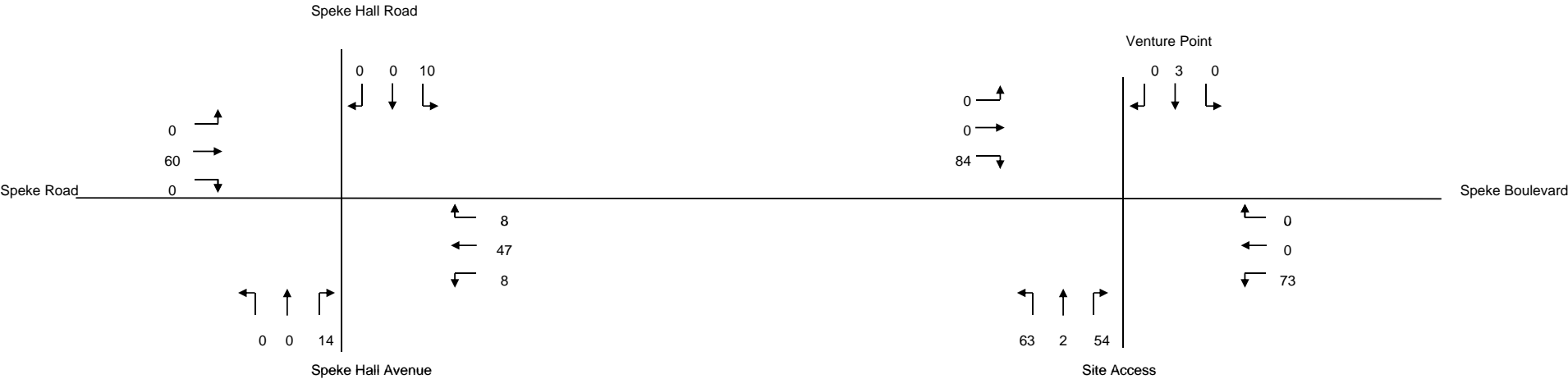
2012 PM Base (PCUs)



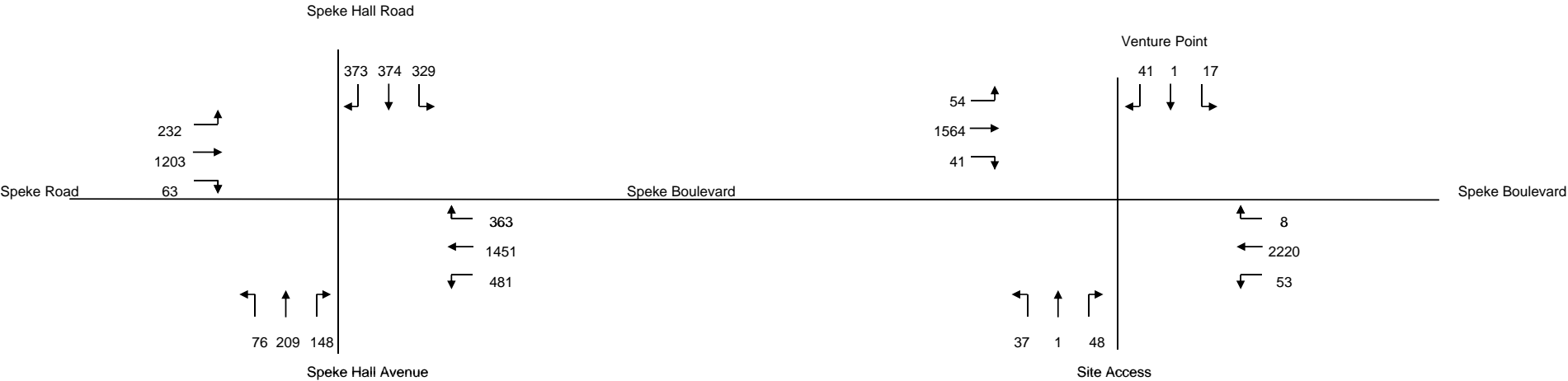
2012 AM Development Flows (PCUs)



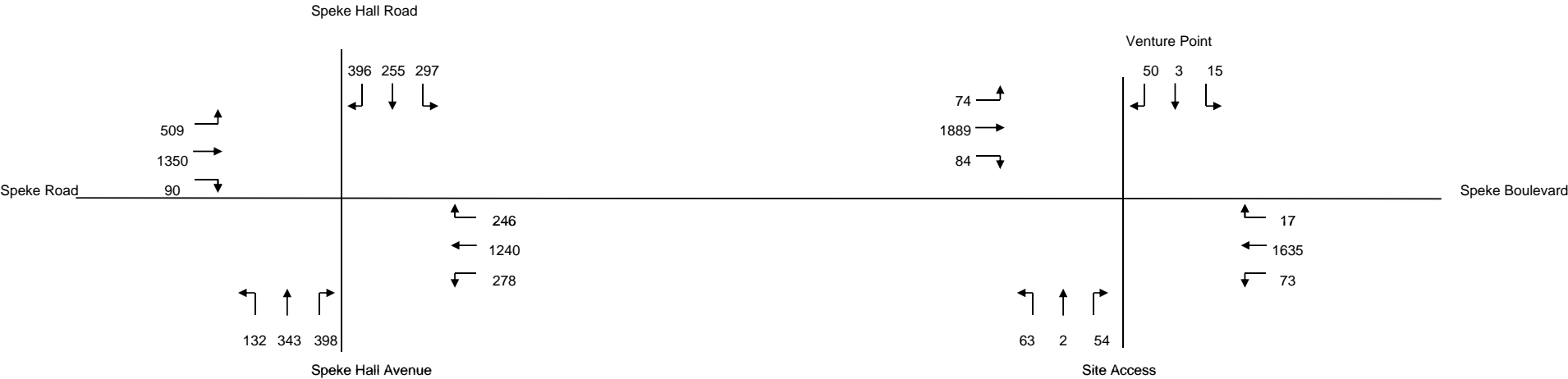
2012 PM Development Flows (PCUs)



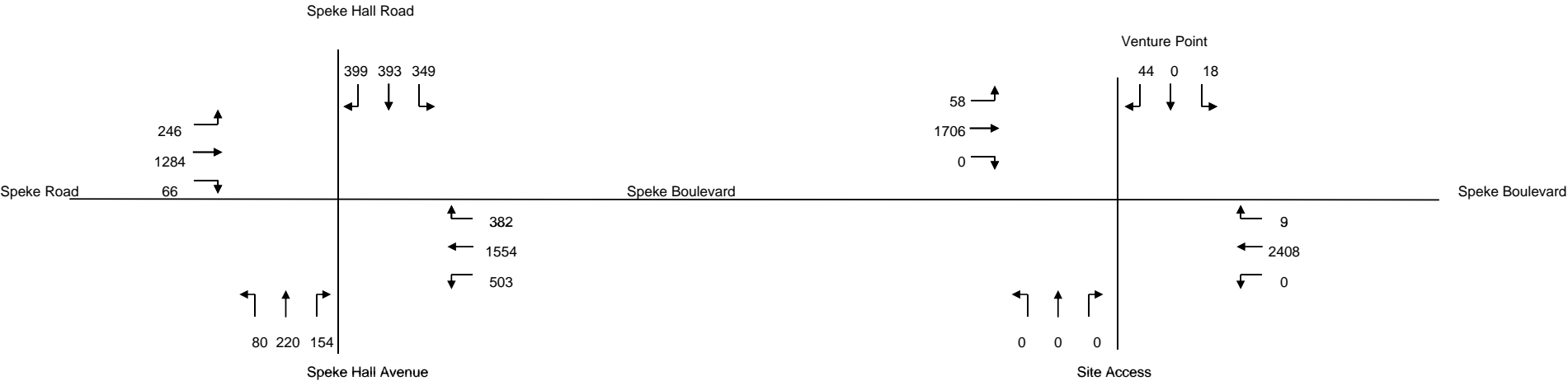
2012 AM Base + Development (PCUs)



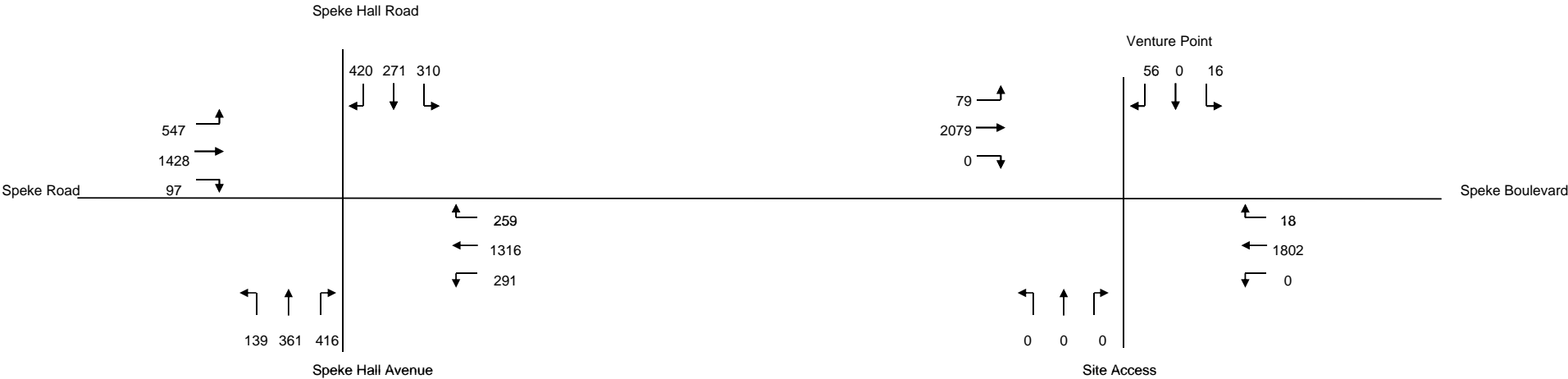
2012 PM Base + Development (PCUs)



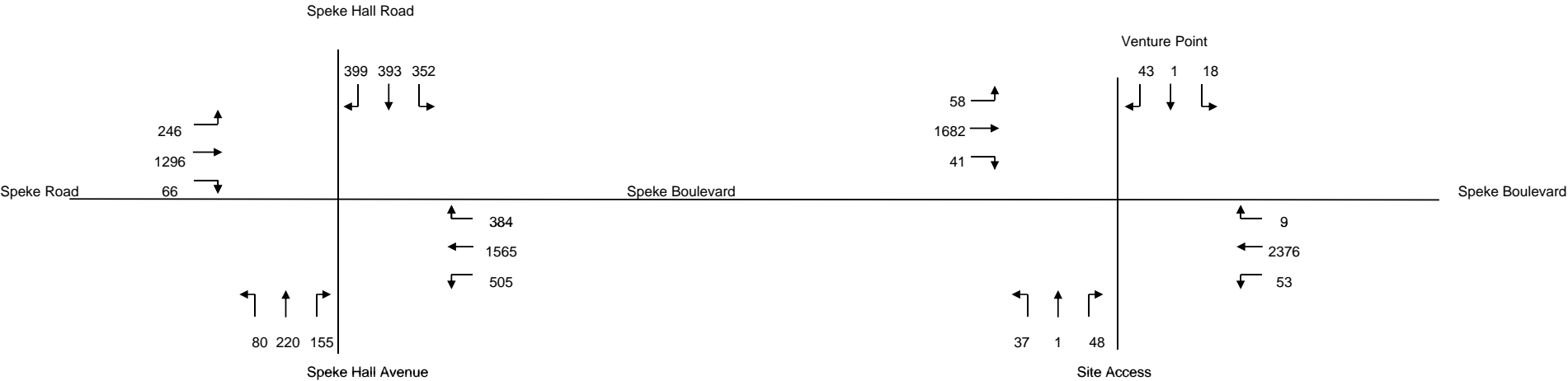
2017 AM Base (PCUs)



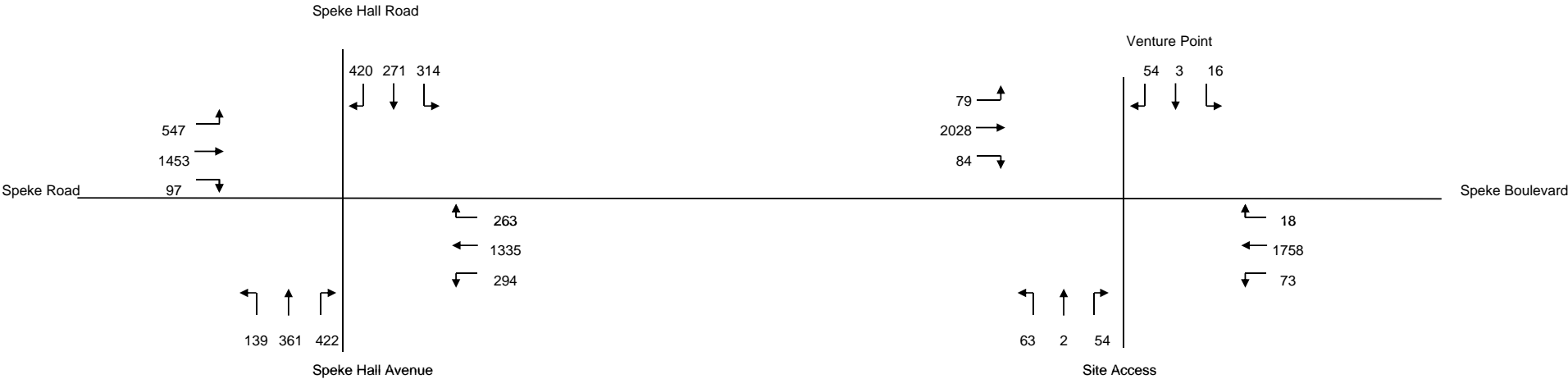
2017 PM Base (PCUs)



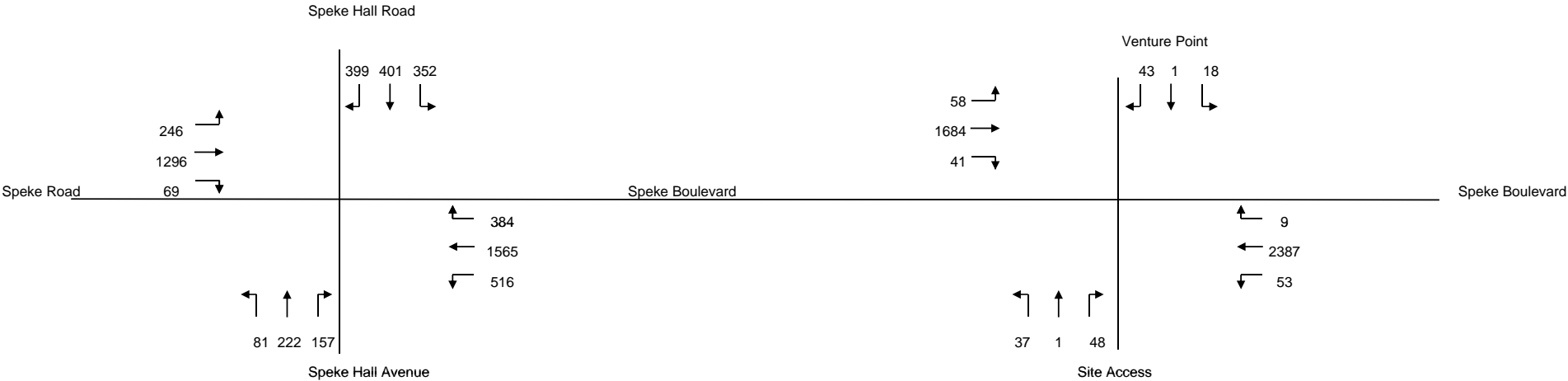
2017 AM Base + Development (PCUs)



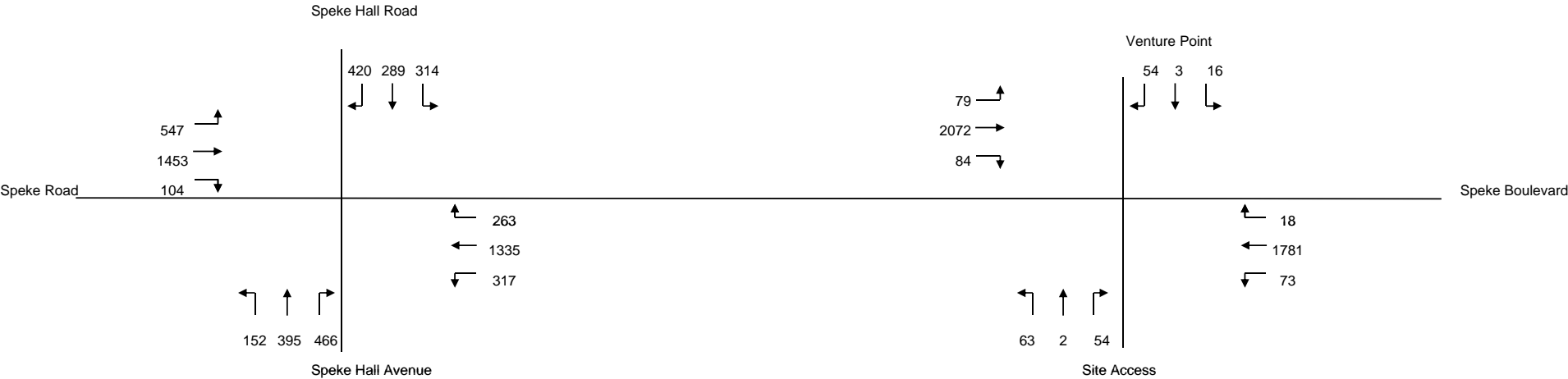
2017 PM Base + Development (PCUs)



2017 AM Sensitivity Test (PCUs)

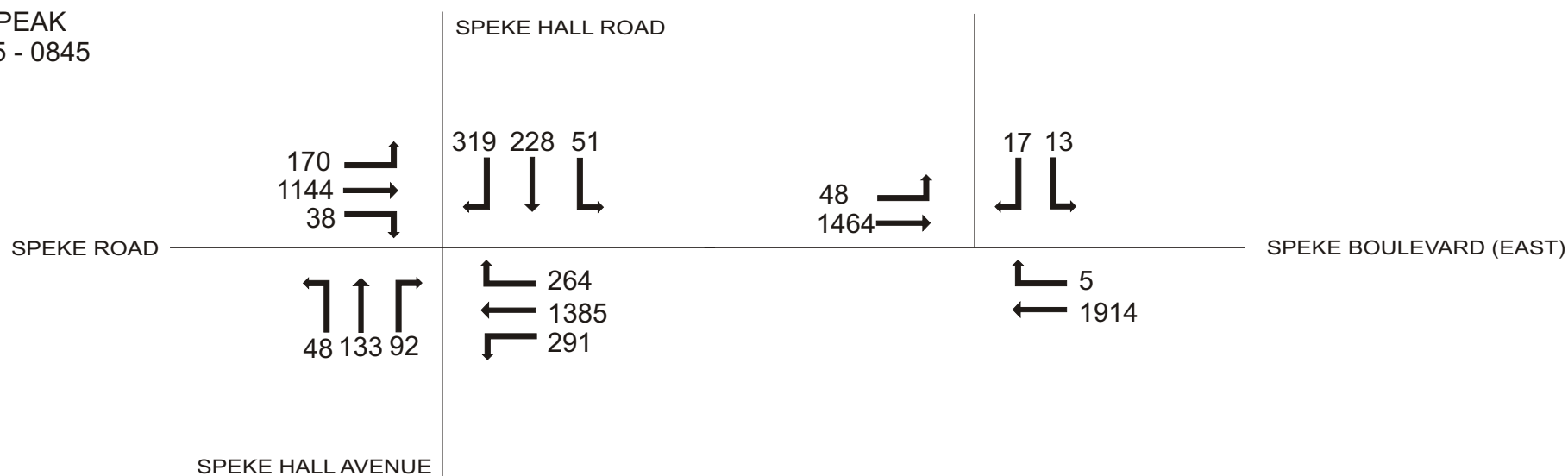


2017 PM Sensitivity Test (PCUs)

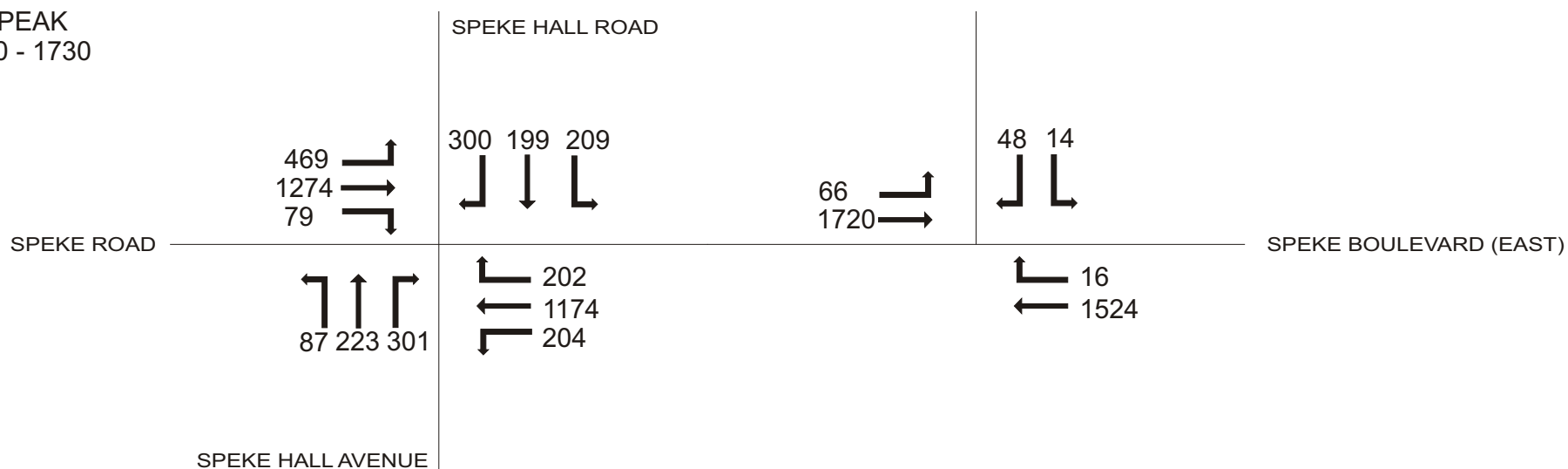


APPENDIX E

AM PEAK
0745 - 0845



PM PEAK
1630 - 1730



APPENDIX F

LinSig V2

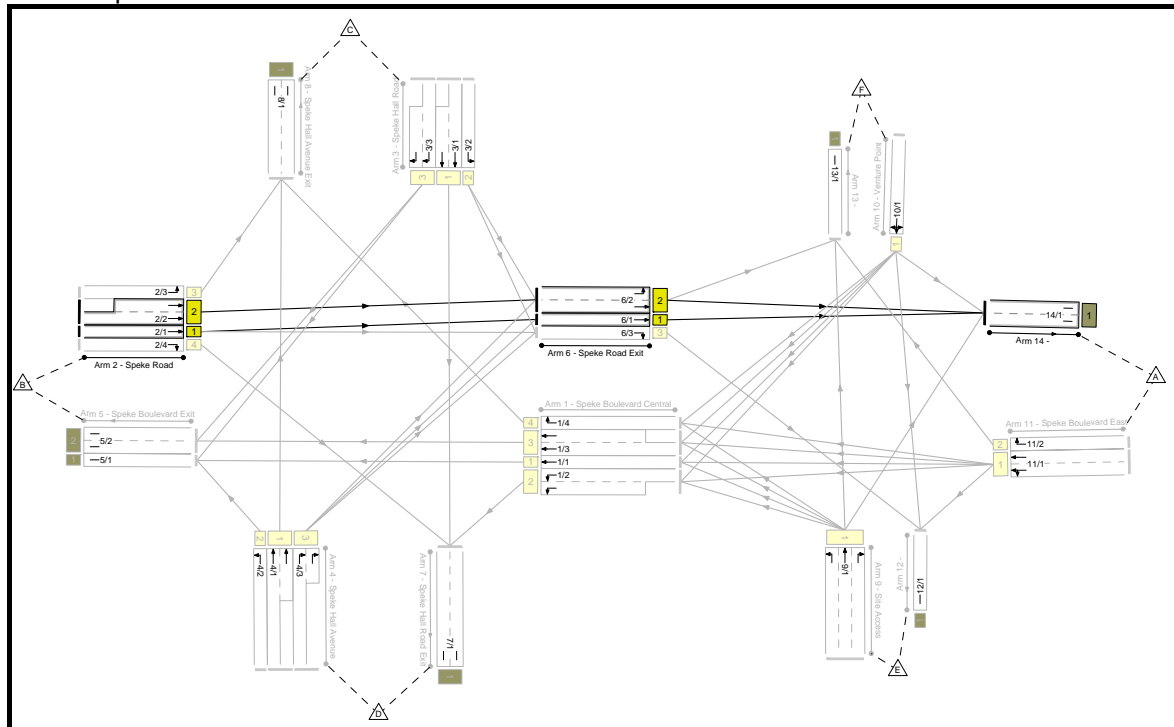
User and Project Details

Project:	
Title:	
Location:	Speke Road / Speke Hall Avenue
File name:	Speke Boulevard M10037-03 TA.Isgx

Scenario 1: '2012 AM Base'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 1: '2012 AM BASE'



Phase Intergreens Matrix

	Starting Phase																												
Terminating Phase		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
	A						5	5		9	7	5								9									
	B						5	5					5																
	C				8	12		5				5										11							
	D			5				7	9		5			5						9									
	E			5				5							5														
	F	8	11					5			5			5									11						
	G	8	9	6	5		6			11	9					5					12		10						
	H				5						5						5												
	I	5						5											5										
	J	5		6	8	9	6	9	11									5		11		10							
	K	13		13																									
	L		6																										
	M				13		13																						
	N					11																							
	O								14																				
	P								7																				
	Q										13																		
	R									6																			
	S				9						9																		
T	9						9																						

U	-	-	6	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V	-	-	-	-	-	7	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	6	5
X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5	5	7
Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	5	-	-	5
Z	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	8	5
AA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	5	-
AB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	5	-

Phases In Stage

Stream	Stage No.	Phases in Stage
1	1	DE F I O P Q T U
1	2	A B D E Q R U V
1	3	A B C H M N Q R S V
1	4	G H K L M N
1	5	I J K L O P
2	1	W X
2	2	AA AB
2	3	Y AA
2	4	Y Z

Link Input Data

Arm/ Link	Link Name	Link Type	Num Lanes	Phases	Start Disp.	End Disp.
1/1	Speke Boulevard Central Ahead	U	1	D	2	3
1/2	Speke Boulevard Central Left	U	2	E	2	3
1/3	Speke Boulevard Central Ahead	U	2	D	2	3
1/4	Speke Boulevard Central Right	U	1	F	2	3
2/1	Speke Road Ahead	U	1	A	2	3
2/2	Speke Road Ahead	U	2	A	2	3
2/3	Speke Road Left	U	1	B	2	3
2/4	Speke Road Right	U	1	C	2	3
3/1	Speke Hall Road Ahead	U	2	J	2	3
3/2	Speke Hall Road Left	U	1	I	2	3
3/3	Speke Hall Road Right	U	2	J	2	3
4/1	Speke Hall Avenue Ahead	U	2	G	2	3
4/2	Speke Hall Avenue Left	U	1	H	2	3
4/3	Speke Hall Avenue Right	U	2	G	2	3
6/1	Speke Road Exit Ahead	U	1	AA	0	3
6/2	Speke Road Exit Left Ahead	U	2	AA	0	3
6/3	Speke Road Exit Right	U	1	AB	0	3
9/1	Site Access Left Ahead Right	U	3	W	2	3
10/1	Venture Point Right Ahead Left	U	1	X	2	3
11/1	Speke Boulevard East Ahead Left	U	2	Y	2	3
11/2	Speke Boulevard East Right	U	1	Z	2	3

Lane Input Data

Arm/ Lane	Link Num	Physical Length (PCU)	Expected Usage (PCU)	Sat Flow Type	User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)
1/1 (Speke Boulevard Central Lane 1)	Link 2 (Speke Boulevard Central Left)	5.0	12.0	Geom	1800	3.50	0.00	Y	Arm 7 Left (Speke Hall Road Exit)	30.00
1/2 (Speke Boulevard Central Lane 2)	Link 2 (Speke Boulevard Central Left)	Inf	Inf	Geom	1800	3.50	0.00	Y	Arm 7 Left (Speke Hall Road Exit)	30.00
1/3 (Speke Boulevard Central Lane 3)	Link 1 (Speke Boulevard Central Ahead)	Inf	Inf	Geom	1800	3.25	0.00	Y	Arm 5 Ahead (Speke Boulevard Exit)	Inf
1/4 (Speke Boulevard Central Lane 4)	Link 3 (Speke Boulevard Central Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 5 Ahead (Speke Boulevard Exit)	Inf
1/5 (Speke Boulevard Central Lane 5)	Link 3 (Speke Boulevard Central Ahead)	5.0	12.0	Geom	1800	3.25	0.00	N	Arm 5 Ahead (Speke Boulevard Exit)	Inf
1/6 (Speke Boulevard Central Lane 6)	Link 4 (Speke Boulevard Central Right)	Inf	Inf	Geom	1800	3.40	0.00	Y	Arm 8 Right (Speke Hall Avenue Exit)	25.00
2/1 (Speke Road Lane 1)	Link 3 (Speke Road Left)	Inf	Inf	Geom	1800	3.40	0.00	Y	Arm 8 Left (Speke Hall Avenue Exit)	25.00
2/2 (Speke Road Lane 2)	Link 2 (Speke Road Ahead)	5.0	8.0	Geom	1800	3.25	0.00	N	Arm 6 Ahead (Speke Road Exit)	Inf
2/3 (Speke Road Lane 3)	Link 2 (Speke Road Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 6 Ahead (Speke Road Exit)	Inf
2/4 (Speke Road Lane 4)	Link 1 (Speke Road Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 6 Ahead (Speke Road Exit)	Inf

2/5 (Speke Road Lane 5)	Link 4 (Speke Road Right)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 7 Right (Speke Hall Road Exit)	25.00
3/1 (Speke Hall Road Lane 1)	Link 2 (Speke Hall Road Left)	Inf	Inf	Geom	1800	3.80	0.00	Y	Arm 6 Left (Speke Road Exit)	25.00
3/2 (Speke Hall Road Lane 2)	Link 1 (Speke Hall Road Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 7 Ahead (Speke Hall Road Exit)	Inf
3/3 (Speke Hall Road Lane 3)	Link 1 (Speke Hall Road Ahead)	5.0	7.0	Geom	1800	3.25	0.00	Y	Arm 7 Ahead (Speke Hall Road Exit)	Inf
3/4 (Speke Hall Road Lane 4)	Link 3 (Speke Hall Road Right)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 5 Right (Speke Boulevard Exit)	25.00
3/5 (Speke Hall Road Lane 5)	Link 3 (Speke Hall Road Right)	5.0	7.0	Geom	1800	3.25	0.00	N	Arm 5 Right (Speke Boulevard Exit)	25.00
4/1 (Speke Hall Avenue Lane 1)	Link 2 (Speke Hall Avenue Left)	Inf	Inf	Geom	1800	4.00	0.00	Y	Arm 5 Left (Speke Boulevard Exit)	25.00
4/2 (Speke Hall Avenue Lane 2)	Link 1 (Speke Hall Avenue Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 8 Ahead (Speke Hall Avenue Exit)	Inf
4/3 (Speke Hall Avenue Lane 3)	Link 1 (Speke Hall Avenue Ahead)	5.0	6.0	Geom	1800	3.25	0.00	N	Arm 8 Ahead (Speke Hall Avenue Exit)	Inf
4/4 (Speke Hall Avenue Lane 4)	Link 3 (Speke Hall Avenue Right)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 6 Right (Speke Road Exit)	25.00
4/5 (Speke Hall Avenue Lane 5)	Link 3 (Speke Hall Avenue Right)	5.0	4.0	Geom	1800	3.25	0.00	N	Arm 6 Right (Speke Road Exit)	25.00

6/1 (Speke Road Exit Lane 1)	Link 2 (Speke Road Exit Left Ahead)	Inf	Inf	Geom	1800	3.40	0.00	Y	Arm 13 Left	25.00
6/2 (Speke Road Exit Lane 2)	Link 2 (Speke Road Exit Left Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 14 Ahead	Inf
6/3 (Speke Road Exit Lane 3)	Link 1 (Speke Road Exit Ahead)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 14 Ahead	Inf
6/4 (Speke Road Exit Lane 4)	Link 3 (Speke Road Exit Right)	Inf	Inf	Geom	1800	3.40	0.00	N	Arm 12 Right	25.00
9/1 (Site Access Lane 1)	Link 1 (Site Access Left Ahead Right)	Inf	Inf	Geom	1800	4.00	0.00	Y	Arm 1 Left (Speke Boulevard Central)	25.00
9/2 (Site Access Lane 2)	Link 1 (Site Access Left Ahead Right)	Inf	Inf	Geom	1800	4.00	0.00	N	Arm 13 Ahead	Inf
9/3 (Site Access Lane 3)	Link 1 (Site Access Left Ahead Right)	Inf	Inf	Geom	1800	3.50	0.00	N	Arm 14 Right	25.00
10/1 (Venture Point Lane 1)	Link 1 (Venture Point Right Ahead Left)	Inf	Inf	Geom	1800	3.40	0.00	Y	Arm 1 Right (Speke Boulevard Central) Arm 12 Ahead Arm 14 Left	25.00 Inf 25.00
11/1 (Speke Boulevard East Lane 1)	Link 1 (Speke Boulevard East Ahead Left)	Inf	Inf	Geom	1800	3.25	0.00	Y	Arm 1 Ahead (Speke Boulevard Central) Arm 12 Left	Inf 25.00
11/2 (Speke Boulevard East Lane 2)	Link 1 (Speke Boulevard East Ahead Left)	Inf	Inf	Geom	1800	3.25	0.00	N	Arm 1 Ahead (Speke Boulevard Central)	Inf

11/3 (Speke Boulevard East Lane 3)	Link 2 (Speke Boulevard East Right)	Inf	Inf	Geom	1800	3.40	0.00	Y	Arm 13 Right	25.00
--	--	-----	-----	------	------	------	------	---	--------------	-------

Lane Saturation Flows
Flow Group 1: '2012 AM BASE'

Arm/ Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Speke Boulevard Central Lane 1)	3.50	0.00	Y	Arm 7 Left (Speke Hall Road Exit)	30.00	100.0 %	1871
1/2 (Speke Boulevard Central Lane 2)	3.50	0.00	Y	Arm 7 Left (Speke Hall Road Exit)	30.00	100.0 %	1871
1/3 (Speke Boulevard Central Lane 3)	3.25	0.00	Y	Arm 5 Ahead (Speke Boulevard Exit)	Inf	100.0 %	1940
1/4 (Speke Boulevard Central Lane 4)	3.25	0.00	N	Arm 5 Ahead (Speke Boulevard Exit)	Inf	100.0 %	2080
1/5 (Speke Boulevard Central Lane 5)	3.25	0.00	N	Arm 5 Ahead (Speke Boulevard Exit)	Inf	100.0 %	2080
1/6 (Speke Boulevard Central Lane 6)	3.40	0.00	Y	Arm 8 Right (Speke Hall Avenue Exit)	25.00	100.0 %	1844
2/1 (Speke Road Lane 1)	3.40	0.00	Y	Arm 8 Left (Speke Hall Avenue Exit)	25.00	100.0 %	1844
2/2 (Speke Road Lane 2)	3.25	0.00	N	Arm 6 Ahead (Speke Road Exit)	Inf	100.0 %	2080
2/3 (Speke Road Lane 3)	3.25	0.00	N	Arm 6 Ahead (Speke Road Exit)	Inf	100.0 %	2080
2/4 (Speke Road Lane 4)	3.25	0.00	N	Arm 6 Ahead (Speke Road Exit)	Inf	100.0 %	2080
2/5 (Speke Road Lane 5)	3.25	0.00	N	Arm 7 Right (Speke Hall Road Exit)	25.00	100.0 %	1962
3/1 (Speke Hall Road Lane 1)	3.80	0.00	Y	Arm 6 Left (Speke Road Exit)	25.00	100.0 %	1882
3/2 (Speke Hall Road Lane 2)	3.25	0.00	N	Arm 7 Ahead (Speke Hall Road Exit)	Inf	100.0 %	2080
3/3 (Speke Hall Road Lane 3)	3.25	0.00	Y	Arm 7 Ahead (Speke Hall Road Exit)	Inf	100.0 %	1940
3/4 (Speke Hall Road Lane 4)	3.25	0.00	N	Arm 5 Right (Speke Boulevard Exit)	25.00	100.0 %	1962
3/5 (Speke Hall Road Lane 5)	3.25	0.00	N	Arm 5 Right (Speke Boulevard Exit)	25.00	100.0 %	1962

4/1 (Speke Hall Avenue Lane 1)	4.00	0.00	Y	Arm 5 Left (Speke Boulevard Exit)	25.00	100.0 %	1901
4/2 (Speke Hall Avenue Lane 2)	3.25	0.00	N	Arm 8 Ahead (Speke Hall Avenue Exit)	Inf	100.0 %	2080
4/3 (Speke Hall Avenue Lane 3)	3.25	0.00	N	Arm 8 Ahead (Speke Hall Avenue Exit)	Inf	100.0 %	2080
4/4 (Speke Hall Avenue Lane 4)	3.25	0.00	N	Arm 6 Right (Speke Road Exit)	25.00	100.0 %	1962
4/5 (Speke Hall Avenue Lane 5)	3.25	0.00	N	Arm 6 Right (Speke Road Exit)	25.00	100.0 %	1962
5/1 (Speke Boulevard Exit Lane 1)	Infinite Saturation Flow (on Exit Link)						Inf
5/2 (Speke Boulevard Exit Lane 2)	Infinite Saturation Flow (on Exit Link)						Inf
5/3 (Speke Boulevard Exit Lane 3)	Infinite Saturation Flow (on Exit Link)						Inf
6/1 (Speke Road Exit Lane 1)	3.40	0.00	Y	Arm 13 Left	25.00	100.0 %	1844
6/2 (Speke Road Exit Lane 2)	3.25	0.00	N	Arm 14 Ahead	Inf	100.0 %	2080
6/3 (Speke Road Exit Lane 3)	3.25	0.00	N	Arm 14 Ahead	Inf	100.0 %	2080
6/4 (Speke Road Exit Lane 4)	3.40	0.00	N	Arm 12 Right	25.00	0.0 %	2095
7/1 (Speke Hall Road Exit Lane 1)	Infinite Saturation Flow (on Exit Link)						Inf
7/2 (Speke Hall Road Exit Lane 2)	Infinite Saturation Flow (on Exit Link)						Inf
8/1 (Speke Hall Avenue Exit Lane 1)	Infinite Saturation Flow (on Exit Link)						Inf
8/2 (Speke Hall Avenue Exit Lane 2)	Infinite Saturation Flow (on Exit Link)						Inf
9/1 (Site Access Lane 1)	4.00	0.00	Y	Arm 1 Left (Speke Boulevard Central)	25.00	0.0 %	2015
9/2 (Site Access Lane 2)	4.00	0.00	N	Arm 13 Ahead	Inf	0.0 %	2155

9/3 (Site Access Lane 3)	3.50	0.00	N	Arm 14 Right	25.00	0.0 %	2105
10/1 (Venture Point Lane 1)	3.40	0.00	Y	Arm 1 Right (Speke Boulevard Central)	25.00	71.2 %	1844
				Arm 12 Ahead	Inf	0.0 %	
				Arm 14 Left	25.00	28.8 %	
11/1 (Speke Boulevard East Lane 1)	3.25	0.00	Y	Arm 1 Ahead (Speke Boulevard Central)	Inf	100.0 %	1940
				Arm 12 Left	25.00	0.0 %	
11/2 (Speke Boulevard East Lane 2)	3.25	0.00	N	Arm 1 Ahead (Speke Boulevard Central)	Inf	100.0 %	2080
11/3 (Speke Boulevard East Lane 3)	3.40	0.00	Y	Arm 13 Right	25.00	100.0 %	1844
12/1				Infinite Saturation Flow (on Exit Link)			Inf
13/1				Infinite Saturation Flow (on Exit Link)			Inf
14/1				Infinite Saturation Flow (on Exit Link)			Inf
14/2				Infinite Saturation Flow (on Exit Link)			Inf

Traffic Flow Matrix
Flow Group 1: '2012 AM BASE'
Desired Flow :

		Destination						
Origin	A	0	1415	354	470	0	8	2247
	B	1137	0	232	63	0	39	1471
	C	312	373	0	374	0	11	1070
	D	140	76	209	0	0	5	430
	E	0	0	0	0	0	0	0
	F	17	26	7	9	0	0	59
	Tot.	1606	1890	802	916	0	63	5277

Flow Group 2: '2012 PM BASE'**Desired Flow :**

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1185	236	266	0	17	1704
	B	1279	0	509	90	0	49	1927
	C	283	396	0	255	0	11	945
	D	378	132	343	0	0	14	867
	E	0	0	0	0	0	0	0
	F	15	37	7	8	0	0	67
	Tot.	1955	1750	1095	619	0	91	5510

Flow Group 3: '2012 AM BASE + DEVELOPMENT'**Desired Flow :**

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1402	350	465	53	8	2278
	B	1120	0	232	63	29	39	1483
	C	307	373	0	374	8	11	1073
	D	138	76	209	0	4	5	432
	E	48	23	6	8	0	1	86
	F	17	26	6	8	1	0	58
	Tot.	1630	1900	803	918	95	64	5410

Flow Group 4: '2012 PM BASE + DEVELOPMENT'**Desired Flow :**

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1160	231	260	73	17	1741
	B	1247	0	509	90	56	49	1951
	C	275	396	0	255	12	11	949
	D	368	132	343	0	16	14	873
	E	54	44	9	10	0	2	119
	F	15	36	7	8	3	0	69
	Tot.	1959	1768	1099	623	160	93	5702

Flow Group 5: '2017 AM BASE'**Desired Flow :**

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1526	375	493	0	9	2403
	B	1226	0	246	66	0	42	1580
	C	333	399	0	393	0	11	1136
	D	147	80	220	0	0	5	452
	E	0	0	0	0	0	0	0
	F	18	28	7	9	0	0	62
	Tot.	1724	2033	848	961	0	67	5633

Flow Group 6: '2017 PM BASE'**Desired Flow :**

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1277	252	282	0	18	1829
	B	1378	0	547	97	0	52	2074
	C	299	420	0	271	0	11	1001
	D	402	139	361	0	0	15	917
	E	0	0	0	0	0	0	0
	F	16	40	8	9	0	0	73
	Tot.	2095	1876	1168	659	0	96	5894

Flow Group 7: '2017 AM BASE + DEVELOPMENT'**Desired Flow :**

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1513	372	488	53	9	2435
	B	1209	0	246	66	29	42	1592
	C	328	399	0	393	8	11	1139
	D	145	80	220	0	4	5	454
	E	48	24	6	8	0	1	87
	F	18	28	7	9	1	0	63
	Tot.	1748	2044	851	964	95	68	5770

Flow Group 8: '2017 PM BASE + DEVELOPMENT'

Desired Flow :

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1252	246	276	73	18	1865
	B	1346	0	547	97	56	52	2098
	C	291	420	0	271	12	11	1005
	D	391	139	361	0	16	15	922
	E	54	45	9	10	0	2	120
	F	16	38	8	8	3	0	73
	Tot.	2098	1894	1171	662	160	98	6083

Flow Group 9: 'Sensitivity Test - 2017 AM B+D+Dobbies'

Desired Flow :

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1514	372	499	53	9	2447
	B	1209	0	246	69	29	42	1595
	C	328	399	0	401	8	11	1147
	D	147	81	222	0	4	5	459
	E	48	23	6	8	0	1	86
	F	18	28	7	9	1	0	63
	Tot.	1750	2045	853	986	95	68	5797

Flow Group 10: 'Sensitivity Test - 2017 PM B+D+Dobbies'

Desired Flow :

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	1253	247	297	73	18	1888
	B	1348	0	547	104	55	51	2105
	C	292	420	0	289	12	11	1024
	D	433	152	395	0	18	16	1014
	E	54	44	9	10	0	2	119
	F	16	38	7	9	3	0	73
	Tot.	2143	1907	1205	709	161	98	6223

Link Results**Scenario 1: '2012 AM Base'**

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 1: '2012 AM BASE'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	52	-	571	1940	1940	918	62.2
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	51	-	479	3742	2702	1254	38.2
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	52	-	870	4160	2895	1370	63.5
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	27	-	361	1844	1844	461	78.3
2/1	Speke Road Ahead	U	1	N/A	A		1	36	-	492	2080	2080	687	71.6
2/2	Speke Road Ahead	U	1	N/A	A		1	36	-	684	4160	2858	944	72.4
2/3	Speke Road Left	U	1	N/A	B		1	34	-	232	1844	1844	576	40.3
2/4	Speke Road Right	U	1	N/A	C		1	12	-	63	1962	1962	228	27.7
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	13	-	374	4020	3880	485	77.1
3/2	Speke Hall Road Left	U	1	N/A	I		1	48	-	323	1882	1882	823	39.2
3/3	Speke Hall Road Right	U	1	N/A	J		1	13	-	373	3924	3762	470	79.3

4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	7	-	209	4160	4160	297	70.3
4/2	Speke Hall Avenue Left	U	1	N/A	H		1	25	-	76	1901	1901	441	17.2
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	7	-	145	3924	3762	269	54.0
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	80	-	562	2080	2080	1541	36.5
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	80	-	1082	3924	3924	2908	37.2
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	0	2095	2095	187	0.0
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	0	6275	6275	448	0.0
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	59	1844	1844	165	35.8
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	79	-	2239	4020	4020	2871	78.0
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	8	1844	1844	132	6.1

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	571	571	-	-	-	2.1	0.8	-	2.9	18.3	12.6	0.8	13.4	
1/2	479	479	-	-	-	1.4	0.3	-	1.7	12.5	7.3	0.3	7.6	
1/3	870	870	-	-	-	2.6	0.9	-	3.5	14.4	15.3	0.9	16.2	
1/4	361	361	-	-	-	3.2	1.7	-	4.9	49.3	10.0	1.7	11.7	
2/1	492	492	-	-	-	4.5	1.2	-	5.7	42.0	13.4	1.2	14.6	
2/2	684	684	-	-	-	5.7	1.3	-	7.0	36.9	17.3	1.3	18.6	
2/3	232	232	-	-	-	2.0	0.3	-	2.3	35.5	5.7	0.3	6.0	
2/4	63	63	-	-	-	0.8	0.2	-	1.0	56.1	1.8	0.2	2.0	
3/1	374	374	-	-	-	4.9	1.6	-	6.5	63.0	11.2	1.6	12.9	
3/2	323	323	-	-	-	1.9	0.3	-	2.2	25.0	6.8	0.3	7.1	
3/3	373	373	-	-	-	4.9	1.8	-	6.8	65.2	11.2	1.8	13.0	
4/1	209	209	-	-	-	3.0	1.2	-	4.1	70.8	6.3	1.2	7.5	
4/2	76	76	-	-	-	0.7	0.1	-	0.8	39.3	1.9	0.1	2.0	
4/3	145	145	-	-	-	2.0	0.6	-	2.6	64.6	4.3	0.6	4.9	
6/1	562	562	-	-	-	0.0	0.3	-	0.3	2.0	0.1	0.3	0.4	
6/2	1082	1082	-	-	-	0.8	0.3	-	1.1	3.8	5.0	0.3	5.3	
6/3	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
9/1	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
10/1	59	59	-	-	-	0.8	0.3	-	1.1	65.0	1.7	0.3	2.0	
11/1	2239	2239	-	-	-	6.4	1.8	-	8.2	13.1	44.8	1.8	46.5	
11/2	8	8	-	-	-	0.1	0.0	-	0.1	63.3	0.2	0.0	0.3	
Stream: 1 Stream: 2														
PRC for Signalled Links (%):					13.5	Total Delay for Signalled Links (pcuHr):			52.08					
PRC for Signalled Links (%):					15.4	Total Delay for Signalled Links (pcuHr):			10.82					
PRC Over All Links (%):					13.5	Total Delay Over All Links (pcuHr):			62.90	Cycle Time (s): 112				

Scenario 2: '2012 PM Base'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 2: '2012 PM BASE'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	46	-	479	1940	1940	760	63.0
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	45	-	274	3742	2810	1077	25.4
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	46	-	744	4160	2999	1175	63.3
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	18	-	243	1844	1844	292	83.2
2/1	Speke Road Ahead	U	1	N/A	A		1	39	-	579	2080	2080	693	83.5
2/2	Speke Road Ahead	U	1	N/A	A		1	39	-	749	4160	2800	933	80.3
2/3	Speke Road Left	U	1	N/A	B		1	37	-	509	1844	1844	584	87.2
2/4	Speke Road Right	U	1	N/A	C		1	12	-	90	1962	1962	213	42.3
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	14	-	255	4020	3760	470	54.3
3/2	Speke Hall Road Left	U	1	N/A	I		1	40	-	294	1882	1882	643	45.7
3/3	Speke Hall Road Right	U	1	N/A	J		1	14	-	396	3924	3642	455	87.0
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	20	-	343	4160	3109	544	63.1

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	38	-	132	1901	1901	618	21.4
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	20	-	392	3924	2648	463	84.6
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	88	-	768	2080	2080	1577	48.7
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	88	-	1246	3924	3924	2976	41.9
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	0	2095	2095	175	0.0
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	0	6275	6275	418	0.0
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	67	1844	1844	154	43.6
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	87	-	1687	4020	4020	2948	57.2
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	17	1844	1844	123	13.8

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	479	479	-	-	-	3.1	0.8	-	4.0	30.0	12.9	0.8	13.8	
1/2	274	274	-	-	-	1.4	0.2	-	1.6	20.8	5.9	0.2	6.0	
1/3	744	744	-	-	-	4.3	0.9	-	5.1	24.9	18.1	0.9	18.9	
1/4	243	243	-	-	-	2.9	2.3	-	5.2	76.6	7.8	2.3	10.1	
2/1	579	579	-	-	-	5.9	2.4	-	8.4	52.1	17.7	2.4	20.1	
2/2	749	749	-	-	-	6.9	2.0	-	8.8	42.5	21.4	2.0	23.4	
2/3	509	509	-	-	-	5.5	3.1	-	8.6	60.9	16.0	3.1	19.1	
2/4	90	90	-	-	-	1.3	0.4	-	1.6	64.6	2.8	0.4	3.2	
3/1	255	255	-	-	-	3.5	0.6	-	4.1	57.4	7.9	0.6	8.5	
3/2	294	294	-	-	-	2.5	0.4	-	2.9	36.0	7.6	0.4	8.0	
3/3	396	396	-	-	-	5.6	3.0	-	8.7	78.7	12.8	3.0	15.8	
4/1	343	343	-	-	-	4.2	0.8	-	5.1	53.4	10.2	0.8	11.0	
4/2	132	132	-	-	-	1.1	0.1	-	1.2	33.1	3.2	0.1	3.3	
4/3	392	392	-	-	-	5.0	2.6	-	7.6	69.5	12.4	2.6	15.0	
6/1	768	768	-	-	-	0.0	0.5	-	0.5	2.3	0.2	0.5	0.7	
6/2	1246	1246	-	-	-	0.7	0.4	-	1.0	2.9	8.7	0.4	9.1	
6/3	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
9/1	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
10/1	67	67	-	-	-	1.0	0.4	-	1.4	72.9	2.1	0.4	2.5	
11/1	1687	1687	-	-	-	3.4	0.7	-	4.1	8.8	25.8	0.7	26.4	
11/2	17	17	-	-	-	0.2	0.1	-	0.3	69.7	0.5	0.1	0.6	
Stream: 1 Stream: 2														
PRC for Signalled Links (%):					3.2	Total Delay for Signalled Links (pcuHr):				72.84				
PRC for Signalled Links (%):					57.3	Total Delay for Signalled Links (pcuHr):				7.30				
PRC Over All Links (%):					3.2	Total Delay Over All Links (pcuHr):				80.14	Cycle Time (s): 120			

Scenario 3: '2012 AM B+D'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 3: '2012 AM BASE + DEVELOPMENT'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	51	-	581	1940	1940	901	64.4
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	50	-	481	3742	2718	1238	38.9
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	51	-	871	4160	2911	1351	64.4
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	27	-	362	1844	1844	461	78.5
2/1	Speke Road Ahead	U	1	N/A	A		1	35	-	521	2080	2080	669	77.9
2/2	Speke Road Ahead	U	1	N/A	A		1	35	-	667	4160	2880	926	72.1
2/3	Speke Road Left	U	1	N/A	B		1	33	-	232	1844	1844	560	41.4
2/4	Speke Road Right	U	1	N/A	C		1	12	-	63	1962	1962	228	27.7
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	14	-	374	4020	3760	504	74.3
3/2	Speke Hall Road Left	U	1	N/A	I		1	49	-	326	1882	1882	840	38.8
3/3	Speke Hall Road Right	U	1	N/A	J		1	14	-	373	3924	3642	488	76.5
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	7	-	209	4160	4160	297	70.3

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	25	-	76	1901	1901	441	17.2
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	7	-	147	3924	3762	269	54.7
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	80	-	561	2080	2080	1541	36.4
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	80	-	1059	3924	3924	2908	36.4
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	41	1976	1976	176	23.2
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	86	6042	6042	432	19.9
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	58	1846	1846	165	35.2
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	79	-	2270	4015	4015	2868	79.2
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	8	1844	1844	132	6.1

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	581	581	-	-	-	2.4	0.9	-	3.3	20.3	13.5	0.9	14.4	
1/2	481	481	-	-	-	1.5	0.3	-	1.8	13.6	7.6	0.3	7.9	
1/3	871	871	-	-	-	2.9	0.9	-	3.8	15.6	15.7	0.9	16.6	
1/4	362	362	-	-	-	3.2	1.8	-	5.0	49.6	10.0	1.8	11.8	
2/1	521	521	-	-	-	5.0	1.7	-	6.7	46.3	14.6	1.7	16.3	
2/2	667	667	-	-	-	5.7	1.3	-	7.0	37.6	16.9	1.3	18.1	
2/3	232	232	-	-	-	2.0	0.4	-	2.4	36.6	5.7	0.4	6.1	
2/4	63	63	-	-	-	0.8	0.2	-	1.0	56.1	1.8	0.2	2.0	
3/1	374	374	-	-	-	4.8	1.4	-	6.2	59.9	11.0	1.4	12.4	
3/2	326	326	-	-	-	1.9	0.3	-	2.2	24.3	6.7	0.3	7.0	
3/3	373	373	-	-	-	4.8	1.6	-	6.4	61.7	11.1	1.6	12.7	
4/1	209	209	-	-	-	3.0	1.2	-	4.1	70.8	6.3	1.2	7.5	
4/2	76	76	-	-	-	0.7	0.1	-	0.8	39.3	1.9	0.1	2.0	
4/3	147	147	-	-	-	2.0	0.6	-	2.6	64.8	4.4	0.6	5.0	
6/1	561	561	-	-	-	0.0	0.3	-	0.3	2.0	0.1	0.3	0.4	
6/2	1059	1059	-	-	-	0.8	0.3	-	1.1	3.7	4.9	0.3	5.2	
6/3	41	41	-	-	-	0.8	0.2	-	0.9	79.9	1.3	0.2	1.4	
9/1	86	86	-	-	-	1.2	0.1	-	1.3	54.3	2.5	0.1	2.6	
10/1	58	58	-	-	-	0.8	0.3	-	1.0	64.7	1.7	0.3	2.0	
11/1	2270	2270	-	-	-	6.6	1.9	-	8.5	13.5	46.0	1.9	47.9	
11/2	8	8	-	-	-	0.1	0.0	-	0.1	63.3	0.2	0.0	0.3	
Stream: 1 PRC for Signalled Links (%): 14.6 Total Delay for Signalled Links (pcuHr): 53.26 Stream: 2 PRC for Signalled Links (%): 13.7 Total Delay for Signalled Links (pcuHr): 13.31 PRC Over All Links (%): 13.7 Total Delay Over All Links(pcuHr): 66.57 Cycle Time (s): 112														

Scenario 4: '2012 PM B+D'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 4: '2012 PM BASE + DEVELOPMENT'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	46	-	489	1940	1940	760	64.4
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	45	-	278	3742	2810	1077	25.8
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	46	-	751	4160	2999	1175	63.9
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	18	-	247	1844	1844	292	84.6
2/1	Speke Road Ahead	U	1	N/A	A		1	39	-	556	2080	2080	693	80.2
2/2	Speke Road Ahead	U	1	N/A	A		1	39	-	796	4160	2800	933	85.3
2/3	Speke Road Left	U	1	N/A	B		1	37	-	509	1844	1844	584	87.2
2/4	Speke Road Right	U	1	N/A	C		1	12	-	90	1962	1962	213	42.3
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	14	-	255	4020	3760	470	54.3
3/2	Speke Hall Road Left	U	1	N/A	I		1	40	-	298	1882	1882	643	46.3
3/3	Speke Hall Road Right	U	1	N/A	J		1	14	-	396	3924	3642	455	87.0
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	20	-	343	4160	3109	544	63.1

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	38	-	132	1901	1901	618	21.4
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	20	-	398	3924	2648	463	85.9
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	88	-	684	2080	2080	1577	43.4
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	88	-	1280	3924	3924	2976	43.0
6/3	Speke Road Exit Right	U	2	N/A	AB		1	10	-	84	1976	1976	214	39.2
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	119	6042	6042	403	29.5
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	69	1849	1849	154	44.8
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	84	-	1724	4010	4010	2840	60.7
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	17	1844	1844	123	13.8

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	489	489	-	-	-	3.3	0.9	-	4.2	30.7	13.3	0.9	14.2	
1/2	278	278	-	-	-	1.4	0.2	-	1.6	20.8	5.8	0.2	6.0	
1/3	751	751	-	-	-	4.3	0.9	-	5.1	24.6	18.2	0.9	19.0	
1/4	247	247	-	-	-	3.0	2.5	-	5.4	79.2	7.9	2.5	10.4	
2/1	556	556	-	-	-	5.6	2.0	-	7.6	49.1	16.8	2.0	18.8	
2/2	796	796	-	-	-	7.5	2.8	-	10.2	46.3	23.7	2.8	26.4	
2/3	509	509	-	-	-	5.5	3.1	-	8.6	60.9	16.0	3.1	19.1	
2/4	90	90	-	-	-	1.3	0.4	-	1.6	64.6	2.8	0.4	3.2	
3/1	255	255	-	-	-	3.5	0.6	-	4.1	57.4	7.9	0.6	8.5	
3/2	298	298	-	-	-	2.6	0.4	-	3.0	36.1	7.7	0.4	8.1	
3/3	396	396	-	-	-	5.6	3.0	-	8.7	78.7	12.8	3.0	15.8	
4/1	343	343	-	-	-	4.2	0.8	-	5.1	53.4	10.2	0.8	11.0	
4/2	132	132	-	-	-	1.1	0.1	-	1.2	33.1	3.2	0.1	3.3	
4/3	398	398	-	-	-	5.1	2.8	-	7.9	71.5	12.6	2.8	15.4	
6/1	684	684	-	-	-	0.0	0.4	-	0.4	2.1	0.4	0.4	0.7	
6/2	1280	1280	-	-	-	0.6	0.4	-	1.0	2.9	11.0	0.4	11.4	
6/3	84	84	-	-	-	1.4	0.3	-	1.8	75.0	2.4	0.3	2.7	
9/1	119	119	-	-	-	1.8	0.2	-	2.0	59.7	3.8	0.2	4.0	
10/1	69	69	-	-	-	1.0	0.4	-	1.4	73.3	2.2	0.4	2.6	
11/1	1724	1724	-	-	-	4.3	0.8	-	5.1	10.6	29.2	0.8	30.0	
11/2	17	17	-	-	-	0.2	0.1	-	0.3	69.7	0.5	0.1	0.6	
Stream: 1 PRC for Signalled Links (%): 3.2 Total Delay for Signalled Links (pcuHr): 74.31 Stream: 2 PRC for Signalled Links (%): 48.3 Total Delay for Signalled Links (pcuHr): 11.93 PRC Over All Links (%): 3.2 Total Delay Over All Links(pcuHr): 86.25 Cycle Time (s): 120														

Scenario 5: '2017 AM Base'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 5: '2017 AM BASE'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	52	-	627	1940	1940	918	68.3
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	51	-	502	3742	2702	1254	40.0
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	52	-	927	4160	2895	1370	67.7
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	27	-	382	1844	1844	461	82.9
2/1	Speke Road Ahead	U	1	N/A	A		1	36	-	533	2080	2080	687	77.6
2/2	Speke Road Ahead	U	1	N/A	A		1	36	-	735	4160	2858	944	77.8
2/3	Speke Road Left	U	1	N/A	B		1	34	-	246	1844	1844	576	42.7
2/4	Speke Road Right	U	1	N/A	C		1	12	-	66	1962	1962	228	29.0
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	13	-	393	4020	3880	485	81.0
3/2	Speke Hall Road Left	U	1	N/A	I		1	48	-	344	1882	1882	823	41.8
3/3	Speke Hall Road Right	U	1	N/A	J		1	13	-	399	3924	3762	470	84.8
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	7	-	220	4160	4160	297	74.0

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	25	-	80	1901	1901	441	18.1
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	7	-	152	3924	3762	269	56.6
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	80	-	607	2080	2080	1541	39.3
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	80	-	1158	3924	3924	2908	39.8
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	0	2095	2095	187	0.0
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	0	6275	6275	448	0.0
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	62	1844	1844	165	37.7
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	79	-	2394	4020	4020	2871	83.4
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	9	1844	1844	132	6.8

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	627	627	-	-	-	2.3	1.1	-	3.4	19.3	14.6	1.1	15.6	
1/2	502	502	-	-	-	1.4	0.3	-	1.7	12.1	7.5	0.3	7.8	
1/3	927	927	-	-	-	2.7	1.0	-	3.7	14.5	16.3	1.0	17.3	
1/4	382	382	-	-	-	3.5	2.3	-	5.7	54.1	10.6	2.3	12.9	
2/1	533	533	-	-	-	5.0	1.7	-	6.7	45.2	14.8	1.7	16.5	
2/2	735	735	-	-	-	6.3	1.7	-	8.0	39.1	19.2	1.7	20.9	
2/3	246	246	-	-	-	2.1	0.4	-	2.5	36.0	6.0	0.4	6.4	
2/4	66	66	-	-	-	0.8	0.2	-	1.0	56.4	1.9	0.2	2.1	
3/1	393	393	-	-	-	5.2	2.0	-	7.2	66.3	11.8	2.0	13.8	
3/2	344	344	-	-	-	2.1	0.4	-	2.4	25.4	7.4	0.4	7.7	
3/3	399	399	-	-	-	5.3	2.6	-	7.9	71.3	12.1	2.6	14.7	
4/1	220	220	-	-	-	3.1	1.4	-	4.5	73.5	6.7	1.4	8.0	
4/2	80	80	-	-	-	0.8	0.1	-	0.9	39.5	2.0	0.1	2.1	
4/3	152	152	-	-	-	2.1	0.6	-	2.8	65.5	4.6	0.6	5.2	
6/1	607	607	-	-	-	0.0	0.3	-	0.4	2.1	0.2	0.3	0.5	
6/2	1158	1158	-	-	-	1.1	0.3	-	1.4	4.4	6.3	0.3	6.6	
6/3	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
9/1	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
10/1	62	62	-	-	-	0.8	0.3	-	1.1	65.5	1.8	0.3	2.1	
11/1	2394	2394	-	-	-	7.5	2.5	-	10.0	15.0	52.5	2.5	55.0	
11/2	9	9	-	-	-	0.1	0.0	-	0.2	63.4	0.3	0.0	0.3	
Stream: 1 Stream: 2														
PRC for Signalled Links (%):					6.1	Total Delay for Signalled Links (pcuHr):			58.39					
PRC for Signalled Links (%):					7.9	Total Delay for Signalled Links (pcuHr):			13.06					
PRC Over All Links (%):					6.1	Total Delay Over All Links (pcuHr):			71.45	Cycle Time (s): 112				

Scenario 6: '2017 PM Base'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 6: '2017 PM BASE'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	47	-	520	1940	1940	776	67.0
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	46	-	291	3742	2790	1093	26.6
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	47	-	797	4160	2980	1192	66.9
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	18	-	260	1844	1844	292	89.1
2/1	Speke Road Ahead	U	1	N/A	A		1	40	-	545	2080	2080	711	76.7
2/2	Speke Road Ahead	U	1	N/A	A		1	40	-	885	4160	2782	951	93.1
2/3	Speke Road Left	U	1	N/A	B		1	38	-	547	1844	1844	599	91.3
2/4	Speke Road Right	U	1	N/A	C		1	12	-	97	1962	1962	213	45.6
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	14	-	271	4020	3760	470	57.7
3/2	Speke Hall Road Left	U	1	N/A	I		1	40	-	310	1882	1882	643	48.2
3/3	Speke Hall Road Right	U	1	N/A	J		1	14	-	420	3924	3642	455	92.3
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	19	-	361	4160	3160	527	68.5

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	37	-	139	1901	1901	602	23.1
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	19	-	417	3924	2682	447	93.3
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	88	-	746	2080	2080	1577	47.3
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	88	-	1411	3924	3924	2976	47.4
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	0	2095	2095	175	0.0
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	0	6275	6275	418	0.0
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	73	1844	1844	154	47.5
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	87	-	1811	4020	4020	2948	61.4
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	18	1844	1844	123	14.6

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	520	520	-	-	-	3.4	1.0	-	4.4	30.3	14.2	1.0	15.2	
1/2	291	291	-	-	-	1.4	0.2	-	1.6	20.0	6.1	0.2	6.3	
1/3	797	797	-	-	-	4.4	1.0	-	5.4	24.6	19.3	1.0	20.3	
1/4	260	260	-	-	-	3.1	3.4	-	6.5	89.9	8.4	3.4	11.8	
2/1	545	545	-	-	-	5.3	1.6	-	6.9	45.9	16.2	1.6	17.8	
2/2	885	885	-	-	-	8.5	5.7	-	14.2	57.9	27.8	5.7	33.5	
2/3	547	547	-	-	-	5.9	4.5	-	10.4	68.3	17.5	4.5	21.9	
2/4	97	97	-	-	-	1.4	0.4	-	1.8	65.7	3.0	0.4	3.4	
3/1	271	271	-	-	-	3.7	0.7	-	4.4	58.3	8.4	0.7	9.1	
3/2	310	310	-	-	-	2.7	0.5	-	3.1	36.5	8.1	0.5	8.6	
3/3	420	420	-	-	-	6.0	4.7	-	10.7	91.8	13.6	4.7	18.4	
4/1	361	361	-	-	-	4.6	1.1	-	5.7	56.4	10.9	1.1	12.0	
4/2	139	139	-	-	-	1.2	0.2	-	1.3	34.1	3.4	0.2	3.5	
4/3	417	417	-	-	-	5.5	5.2	-	10.7	92.2	13.6	5.2	18.7	
6/1	746	746	-	-	-	0.0	0.4	-	0.5	2.2	0.3	0.4	0.7	
6/2	1411	1411	-	-	-	0.7	0.5	-	1.2	3.0	9.9	0.5	10.4	
6/3	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
9/1	0	0	-	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	
10/1	73	73	-	-	-	1.1	0.4	-	1.5	74.6	2.3	0.4	2.8	
11/1	1811	1811	-	-	-	3.9	0.8	-	4.7	9.3	29.2	0.8	30.0	
11/2	18	18	-	-	-	0.3	0.1	-	0.3	69.9	0.6	0.1	0.7	
Stream: 1 Stream: 2														
PRC for Signalled Links (%):					-3.7	Total Delay for Signalled Links (pcuHr):				87.13				
PRC for Signalled Links (%):					46.5	Total Delay for Signalled Links (pcuHr):				8.21				
PRC Over All Links (%):					-3.7	Total Delay Over All Links (pcuHr):				95.34	Cycle Time (s): 120			

Scenario 7: '2017 AM B+D'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 7: '2017 AM BASE + DEVELOPMENT'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	51	-	621	1940	1940	901	68.9
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	50	-	505	3742	2718	1238	40.8
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	51	-	944	4160	2911	1351	69.9
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	27	-	385	1844	1844	461	83.5
2/1	Speke Road Ahead	U	1	N/A	A		1	35	-	558	2080	2080	669	83.5
2/2	Speke Road Ahead	U	1	N/A	A		1	35	-	722	4160	2880	926	78.0
2/3	Speke Road Left	U	1	N/A	B		1	33	-	246	1844	1844	560	43.9
2/4	Speke Road Right	U	1	N/A	C		1	12	-	66	1962	1962	228	29.0
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	14	-	393	4020	3760	504	78.0
3/2	Speke Hall Road Left	U	1	N/A	I		1	49	-	347	1882	1882	840	41.3
3/3	Speke Hall Road Right	U	1	N/A	J		1	14	-	399	3924	3642	488	81.8
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	7	-	220	4160	4160	297	74.0

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	25	-	80	1901	1901	441	18.1
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	7	-	154	3924	3762	269	57.3
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	80	-	602	2080	2080	1541	39.0
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	80	-	1139	3924	3924	2908	39.2
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	41	1976	1976	176	23.2
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	87	6042	6042	432	20.2
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	63	1846	1846	165	38.2
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	79	-	2426	4015	4015	2868	84.6
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	9	1844	1844	132	6.8

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	621	621	-	-	-	2.5	1.1	-	3.6	21.0	14.7	1.1	15.8	
1/2	505	505	-	-	-	1.5	0.3	-	1.9	13.3	7.8	0.3	8.1	
1/3	944	944	-	-	-	3.0	1.2	-	4.2	15.9	17.4	1.2	18.5	
1/4	385	385	-	-	-	3.5	2.4	-	5.9	55.2	10.9	2.4	13.2	
2/1	558	558	-	-	-	5.5	2.4	-	7.9	50.8	16.0	2.4	18.4	
2/2	722	722	-	-	-	6.3	1.7	-	8.0	40.0	19.1	1.7	20.8	
2/3	246	246	-	-	-	2.1	0.4	-	2.5	37.1	6.1	0.4	6.5	
2/4	66	66	-	-	-	0.8	0.2	-	1.0	56.4	1.9	0.2	2.1	
3/1	393	393	-	-	-	5.1	1.7	-	6.8	62.4	11.7	1.7	13.4	
3/2	347	347	-	-	-	2.0	0.4	-	2.4	24.7	7.3	0.4	7.7	
3/3	399	399	-	-	-	5.2	2.1	-	7.3	66.1	11.9	2.1	14.0	
4/1	220	220	-	-	-	3.1	1.4	-	4.5	73.5	6.7	1.4	8.0	
4/2	80	80	-	-	-	0.8	0.1	-	0.9	39.5	2.0	0.1	2.1	
4/3	154	154	-	-	-	2.2	0.7	-	2.8	65.8	4.6	0.7	5.3	
6/1	602	602	-	-	-	0.0	0.3	-	0.4	2.1	0.2	0.3	0.5	
6/2	1139	1139	-	-	-	1.1	0.3	-	1.4	4.4	6.2	0.3	6.5	
6/3	41	41	-	-	-	0.7	0.2	-	0.9	77.5	1.3	0.2	1.4	
9/1	87	87	-	-	-	1.2	0.1	-	1.3	54.3	2.5	0.1	2.7	
10/1	63	63	-	-	-	0.8	0.3	-	1.1	65.7	1.8	0.3	2.1	
11/1	2426	2426	-	-	-	7.8	2.7	-	10.5	15.6	53.9	2.7	56.6	
11/2	9	9	-	-	-	0.1	0.0	-	0.2	63.4	0.3	0.0	0.3	
Stream: 1 Stream: 2														
			PRC for Signalled Links (%):		7.8	Total Delay for Signalled Links (pcuHr):			59.76					
			PRC for Signalled Links (%):		6.4	Total Delay for Signalled Links (pcuHr):			15.73					
			PRC Over All Links (%):		6.4	Total Delay Over All Links (pcuHr):			75.49	Cycle Time (s): 112				

Scenario 8: '2017 PM B+D'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 8: '2017 PM BASE + DEVELOPMENT'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	46	-	524	1940	1940	760	68.9
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	45	-	294	3742	2810	1077	27.3
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	46	-	812	4160	2999	1175	69.1
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	18	-	263	1844	1844	292	90.1
2/1	Speke Road Ahead	U	1	N/A	A		1	39	-	591	2080	2080	693	85.2
2/2	Speke Road Ahead	U	1	N/A	A		1	39	-	863	4160	2800	933	92.5
2/3	Speke Road Left	U	1	N/A	B		1	37	-	547	1844	1844	584	93.7
2/4	Speke Road Right	U	1	N/A	C		1	12	-	97	1962	1962	213	45.6
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	14	-	271	4020	3760	470	57.7
3/2	Speke Hall Road Left	U	1	N/A	I		1	40	-	314	1882	1882	643	48.8
3/3	Speke Hall Road Right	U	1	N/A	J		1	14	-	420	3924	3642	455	92.3
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	20	-	361	4160	3109	544	66.4

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	38	-	139	1901	1901	618	22.5
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	20	-	422	3924	2648	463	91.1
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	88	-	731	2080	2080	1577	46.3
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	88	-	1376	3924	3924	2976	46.2
6/3	Speke Road Exit Right	U	2	N/A	AB		1	9	-	84	1976	1976	198	42.5
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	120	6042	6042	403	29.8
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	73	1849	1849	154	47.4
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	85	-	1847	4011	4011	2875	64.3
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	18	1844	1844	123	14.6

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	524	524	-	-	-	3.6	1.1	-	4.7	32.3	14.7	1.1	15.8	
1/2	294	294	-	-	-	1.5	0.2	-	1.7	20.9	6.1	0.2	6.2	
1/3	812	812	-	-	-	4.7	1.1	-	5.8	25.8	20.1	1.1	21.2	
1/4	263	263	-	-	-	3.2	3.6	-	6.8	93.4	8.5	3.6	12.1	
2/1	591	591	-	-	-	6.1	2.7	-	8.9	53.9	18.2	2.7	21.0	
2/2	863	863	-	-	-	8.4	5.3	-	13.7	57.2	27.1	5.3	32.4	
2/3	547	547	-	-	-	6.1	5.7	-	11.7	77.1	17.6	5.7	23.3	
2/4	97	97	-	-	-	1.4	0.4	-	1.8	65.7	3.0	0.4	3.4	
3/1	271	271	-	-	-	3.7	0.7	-	4.4	58.3	8.4	0.7	9.1	
3/2	314	314	-	-	-	2.7	0.5	-	3.2	36.7	8.2	0.5	8.7	
3/3	420	420	-	-	-	6.0	4.7	-	10.7	91.8	13.6	4.7	18.4	
4/1	361	361	-	-	-	4.5	1.0	-	5.5	54.5	10.8	1.0	11.8	
4/2	139	139	-	-	-	1.1	0.1	-	1.3	33.3	3.4	0.1	3.5	
4/3	422	422	-	-	-	5.5	4.2	-	9.7	82.8	13.6	4.2	17.8	
6/1	731	731	-	-	-	0.0	0.4	-	0.4	2.2	0.4	0.4	0.8	
6/2	1376	1376	-	-	-	0.7	0.4	-	1.1	3.0	13.1	0.4	13.5	
6/3	84	84	-	-	-	1.5	0.4	-	1.9	79.6	2.5	0.4	2.8	
9/1	120	120	-	-	-	1.8	0.2	-	2.0	59.7	3.8	0.2	4.0	
10/1	73	73	-	-	-	1.1	0.4	-	1.5	74.5	2.3	0.4	2.8	
11/1	1847	1847	-	-	-	4.6	0.9	-	5.5	10.7	32.3	0.9	33.2	
11/2	18	18	-	-	-	0.3	0.1	-	0.3	69.9	0.6	0.1	0.7	
Stream: 1 PRC for Signalled Links (%): -4.1 Total Delay for Signalled Links (pcuHr): 89.86 Stream: 2 PRC for Signalled Links (%): 40.1 Total Delay for Signalled Links (pcuHr): 12.78 PRC Over All Links (%): -4.1 Total Delay Over All Links(pcuHr): 102.64 Cycle Time (s): 120														

Scenario 9: '2017 AM Sensitivity'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 9: 'Sensitivity Test - 2017 AM B+D+Dobbies'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	52	-	626	1940	1940	918	68.1
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	51	-	516	3742	2702	1254	41.1
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	52	-	940	4160	2895	1370	68.6
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	27	-	385	1844	1844	461	83.5
2/1	Speke Road Ahead	U	1	N/A	A		1	36	-	558	2080	2080	687	81.2
2/2	Speke Road Ahead	U	1	N/A	A		1	36	-	722	4160	2858	944	76.5
2/3	Speke Road Left	U	1	N/A	B		1	34	-	246	1844	1844	576	42.7
2/4	Speke Road Right	U	1	N/A	C		1	12	-	69	1962	1962	228	30.3
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	13	-	401	4020	3880	485	82.7
3/2	Speke Hall Road Left	U	1	N/A	I		1	48	-	347	1882	1882	823	42.1
3/3	Speke Hall Road Right	U	1	N/A	J		1	13	-	399	3924	3762	470	84.8
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	7	-	222	4160	4160	297	74.7

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	25	-	81	1901	1901	441	18.4
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	7	-	156	3924	3762	269	58.1
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	80	-	603	2080	2080	1541	39.1
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	80	-	1140	3924	3924	2908	39.2
6/3	Speke Road Exit Right	U	2	N/A	AB		1	7	-	41	1976	1976	176	23.2
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	86	6042	6042	432	19.9
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	63	1846	1846	165	38.2
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	79	-	2438	4015	4015	2868	85.0
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	9	1844	1844	132	6.8

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	626	626	-	-	-	2.4	1.1	-	3.5	20.0	14.6	1.1	15.6	
1/2	516	516	-	-	-	1.5	0.3	-	1.8	12.7	7.8	0.3	8.1	
1/3	940	940	-	-	-	2.8	1.1	-	3.9	15.0	16.6	1.1	17.6	
1/4	385	385	-	-	-	3.5	2.4	-	5.9	55.4	10.8	2.4	13.2	
2/1	558	558	-	-	-	5.3	2.1	-	7.4	47.8	15.8	2.1	17.9	
2/2	722	722	-	-	-	6.1	1.6	-	7.7	38.5	18.7	1.6	20.3	
2/3	246	246	-	-	-	2.1	0.4	-	2.5	36.0	6.0	0.4	6.4	
2/4	69	69	-	-	-	0.9	0.2	-	1.1	56.7	2.0	0.2	2.2	
3/1	401	401	-	-	-	5.3	2.3	-	7.6	68.0	12.0	2.3	14.3	
3/2	347	347	-	-	-	2.1	0.4	-	2.5	25.5	7.4	0.4	7.8	
3/3	399	399	-	-	-	5.3	2.6	-	7.9	71.3	12.1	2.6	14.7	
4/1	222	222	-	-	-	3.1	1.4	-	4.6	74.1	6.7	1.4	8.1	
4/2	81	81	-	-	-	0.8	0.1	-	0.9	39.5	2.0	0.1	2.1	
4/3	156	156	-	-	-	2.2	0.7	-	2.9	66.1	4.7	0.7	5.4	
6/1	603	603	-	-	-	0.0	0.3	-	0.4	2.1	0.2	0.3	0.5	
6/2	1140	1140	-	-	-	1.2	0.3	-	1.5	4.7	6.7	0.3	7.0	
6/3	41	41	-	-	-	0.7	0.2	-	0.9	77.2	1.3	0.2	1.4	
9/1	86	86	-	-	-	1.2	0.1	-	1.3	54.3	2.5	0.1	2.6	
10/1	63	63	-	-	-	0.8	0.3	-	1.1	65.7	1.8	0.3	2.1	
11/1	2438	2438	-	-	-	7.9	2.8	-	10.7	15.8	54.9	2.8	57.7	
11/2	9	9	-	-	-	0.1	0.0	-	0.2	63.4	0.3	0.0	0.3	
Stream: 1 Stream: 2														
PRC for Signalled Links (%):					6.1	Total Delay for Signalled Links (pcuHr):				60.04				
PRC for Signalled Links (%):					5.9	Total Delay for Signalled Links (pcuHr):				16.00				
PRC Over All Links (%):					5.9	Total Delay Over All Links (pcuHr):				76.04	Cycle Time (s): 112			

Scenario 10: '2017 PM Sensitivity'

Staging Plan 1: 'Staging Plan No. 1'

Flow Group 10: 'Sensitivity Test - 2017 PM B+D+Dobbies'

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Speke Boulevard Central Ahead	U	1	N/A	D		1	45	-	521	1940	1940	744	70.1
1/2	Speke Boulevard Central Left	U	1	N/A	E		1	44	-	316	3742	2831	1062	29.8
1/3	Speke Boulevard Central Ahead	U	1	N/A	D		1	45	-	814	4160	3019	1157	70.3
1/4	Speke Boulevard Central Right	U	1	N/A	F		1	17	-	263	1844	1844	277	95.1
2/1	Speke Road Ahead	U	1	N/A	A		1	39	-	580	2080	2080	693	83.7
2/2	Speke Road Ahead	U	1	N/A	A		1	39	-	874	4160	2800	933	93.6
2/3	Speke Road Left	U	1	N/A	B		1	37	-	547	1844	1844	584	93.7
2/4	Speke Road Right	U	1	N/A	C		1	12	-	104	1962	1962	213	48.9
3/1	Speke Hall Road Ahead	U	1	N/A	J		1	13	-	289	4020	3880	453	63.8
3/2	Speke Hall Road Left	U	1	N/A	I		1	38	-	315	1882	1882	612	51.5
3/3	Speke Hall Road Right	U	1	N/A	J		1	13	-	420	3924	3762	439	95.7
4/1	Speke Hall Avenue Ahead	U	1	N/A	G		1	22	-	395	4160	3019	579	68.3

4/2	Speke Hall Avenue Left	U	1	N/A	H		1	40	-	152	1901	1901	650	23.4
4/3	Speke Hall Avenue Right	U	1	N/A	G		1	22	-	467	3924	2588	496	94.1
6/1	Speke Road Exit Ahead	U	2	N/A	AA		1	88	-	742	2080	2080	1577	47.0
6/2	Speke Road Exit Left Ahead	U	2	N/A	AA		1	88	-	1410	3924	3924	2976	47.4
6/3	Speke Road Exit Right	U	2	N/A	AB		1	9	-	85	1976	1976	198	43.0
9/1	Site Access Left Ahead Right	U	2	N/A	W		1	7	-	119	6042	6042	403	29.5
10/1	Venture Point Right Ahead Left	U	2	N/A	X		1	9	-	73	1849	1849	154	47.4
11/1	Speke Boulevard East Ahead Left	U	2	N/A	Y		1	85	-	1870	4011	4011	2875	65.1
11/2	Speke Boulevard East Right	U	2	N/A	Z		1	7	-	18	1844	1844	123	14.6

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	521	521	-	-	-	3.7	1.2	-	4.8	33.5	14.7	1.2	15.9	
1/2	316	316	-	-	-	1.7	0.2	-	1.9	21.7	6.8	0.2	7.0	
1/3	814	814	-	-	-	4.9	1.2	-	6.0	26.7	20.4	1.2	21.6	
1/4	263	263	-	-	-	3.3	5.4	-	8.7	118.6	8.6	5.4	14.0	
2/1	580	580	-	-	-	6.0	2.5	-	8.4	52.2	17.7	2.5	20.2	
2/2	874	874	-	-	-	8.6	6.1	-	14.7	60.4	27.7	6.1	33.8	
2/3	547	547	-	-	-	6.1	5.7	-	11.7	77.1	17.6	5.7	23.3	
2/4	104	104	-	-	-	1.5	0.5	-	1.9	66.8	3.2	0.5	3.7	
3/1	289	289	-	-	-	4.1	0.9	-	4.9	61.3	9.2	0.9	10.0	
3/2	315	315	-	-	-	2.9	0.5	-	3.4	38.9	8.5	0.5	9.0	
3/3	420	420	-	-	-	6.1	6.6	-	12.7	108.7	13.8	6.6	20.3	
4/1	395	395	-	-	-	4.8	1.1	-	5.8	53.0	11.7	1.1	12.8	
4/2	152	152	-	-	-	1.2	0.2	-	1.3	31.9	3.6	0.2	3.7	
4/3	467	467	-	-	-	5.9	5.8	-	11.7	90.2	15.2	5.8	20.9	
6/1	742	742	-	-	-	0.0	0.4	-	0.5	2.3	0.6	0.4	1.0	
6/2	1410	1410	-	-	-	0.9	0.4	-	1.3	3.4	15.3	0.4	15.8	
6/3	85	85	-	-	-	1.5	0.4	-	1.9	79.1	2.5	0.4	2.9	
9/1	119	119	-	-	-	1.8	0.2	-	2.0	59.7	3.8	0.2	4.0	
10/1	73	73	-	-	-	1.1	0.4	-	1.5	74.5	2.3	0.4	2.8	
11/1	1870	1870	-	-	-	4.7	0.9	-	5.6	10.8	32.7	0.9	33.7	
11/2	18	18	-	-	-	0.3	0.1	-	0.3	69.9	0.6	0.1	0.7	
Stream: 1 Stream: 2														
PRC for Signalled Links (%):					-6.3	Total Delay for Signalled Links (pcuHr):				98.05				
PRC for Signalled Links (%):					38.3	Total Delay for Signalled Links (pcuHr):				13.10				
PRC Over All Links (%):					-6.3	Total Delay Over All Links (pcuHr):				111.15	Cycle Time (s): 120			

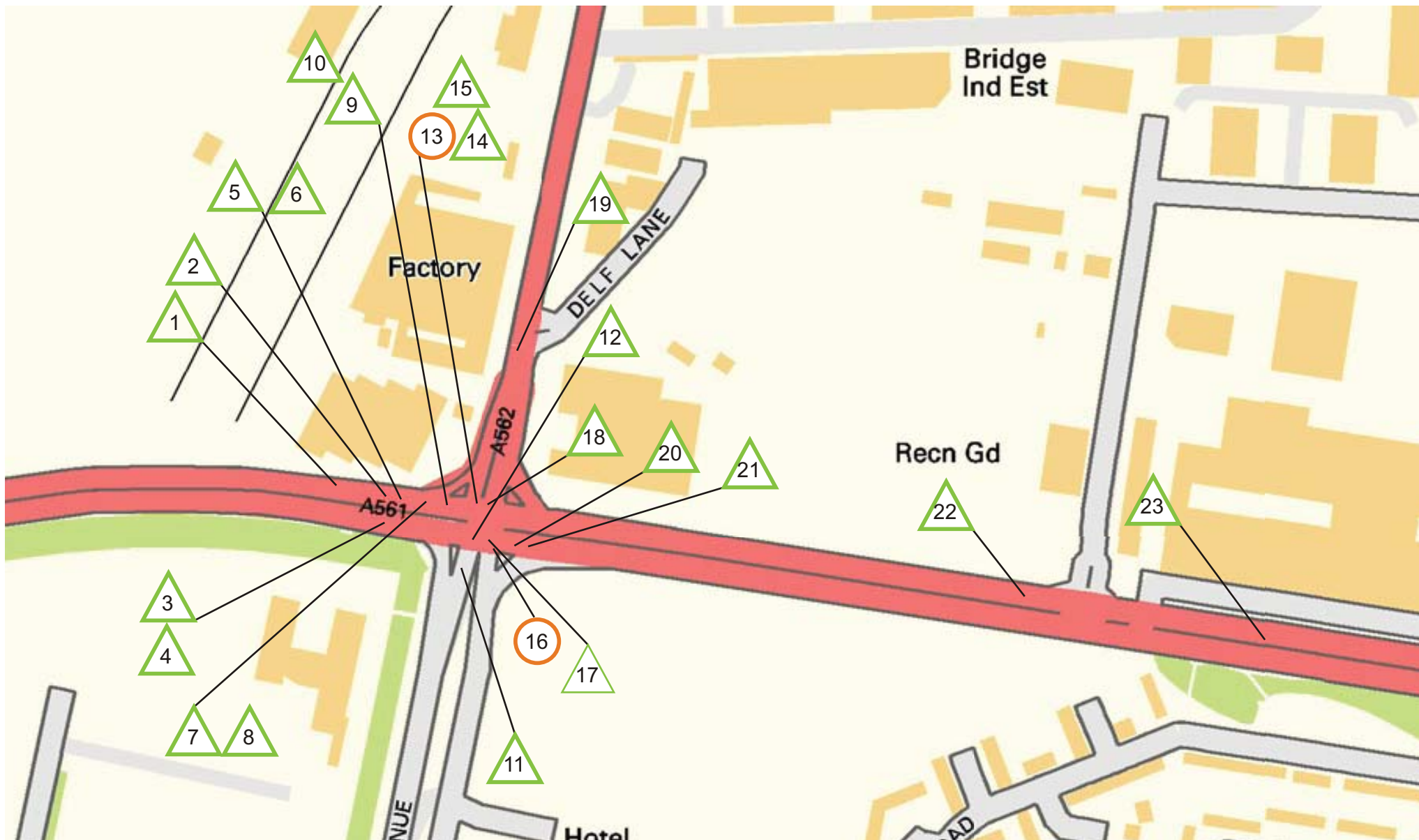
APPENDIX G



Drawing No.	M10037-A-008	Rev	APP G	LAND OFF SPEKE BOULEVARD, SPEKE	
Date	MAY 2011	Rev Date		SWEPT PATH ANALYSIS 16.5M ARTICULATED VEHICLE 1 OF 2	
Drawn By	GB	Authorised	JE	Scale	1:500@A3
					APPENDIX G

APPENDIX H

TTHC Ref	Severity	Description
1	Slight	Pedestrian crosses in path of vehicle as vehicle moves off.
2	Slight	Vehicle fails to stop behind a stationary vehicle. Knock on effect involves 3 other vehicles
3	Slight	Vehicle fails to stop for a slowing vehicle ahead and collides with the rear of the vehicle.
4	Slight	Vehicle brakes suddenly and following vehicle fails to stop, colliding with the braking vehicle. Braking vehicle collides into vehicle in front.
5	Slight	Slow moving vehicle hit from behind by following vehicle. Following vehicle had been shunted into slow moving vehicle by another vehicle.
6	Slight	Vehicle fails to stop and collides with a vehicle waiting ahead.
7	Slight	Vehicle fails to stop and collides with a vehicle waiting ahead. Waiting vehicle shunted into another vehicle ahead.
8	Slight	Vehicle stationary at traffic lights is hit from behind by another vehicle.
9	Slight	Vehicle approaches from behind and collides with stationary vehicle waiting at traffic lights.
10	Slight	Vehicle fails to stop and collides with vehicle waiting at traffic lights ahead.
11	Slight	Vehicle collides with vehicle in front as both vehicles approach the junction.
12	Slight	Vehicle collides with rear of a vehicle waiting to turn right ahead.
13	Serious	Cyclist collides with rear of a stationary vehicle waiting to turn left.
14	Slight	Vehicle travelling (south to north) through the junction collides with a vehicle crossing the junction (west to east).
15	Slight	Vehicle fails to stop at a red light. Vehicle enters the junction and collides with another vehicle.
16	Serious	Vehicle travelling across junction (north to south) when 2 pedestrians run across the road in front of the travelling vehicle.
17	Slight	Vehicle fails to stop at a red light and was hit by another vehicle crossing the junction.
18	Slight	Vehicle attempts to move into lane 2 but collides with another vehicle already in lane 2.
19	Slight	Slowing vehicle hit in the rear by following vehicle.
20	Slight	Vehicle collides into rear of the vehicle ahead.
21	Slight	Vehicle collides with the rear of a vehicle waiting at traffic lights ahead.
22	Slight	Vehicle collides with rear of vehicle in front.
23	Slight	Vehicle out of driver's control and collides with central reservation.



Drawing No	M10037-C-005	Rev	.	PROPOSED FOOD RETAIL SITE, SPEKE	
Date	July 2010	Rev Date	.	ACCIDENT LOCATION PLAN	
Drawn By	ME	Authorised	.	Scale	NTS@A4
					APPENDIX H