

**KENILWORTH ROAD, KNOWLE
TRAFFIC AND TRANSPORT APPRAISAL
JUNE 2016**

1.0 INTRODUCTION AND BACKGROUND INFORMATION

- 1.1 Bancroft Consulting were appointed by Mr Stephen Dunn to provide highways and transportation advice in respect of a potential residential development on land at Kenilworth Road in Knowle, Solihull. This Traffic and Transport Appraisal has been produced to identify a suitable access strategy to secure an allocation for a residential development use at the site as part of the emerging Local Plan.
- 1.2 The purpose of this report is to provide an initial review of the key highways and transportation issues associated with the site, with a view to considering whether there are any insurmountable issues that would prevent the Local Planning Authority from being able to allocate the land for use of a residential development. It considers opportunities for providing suitable vehicular access, whilst also reviewing the potential traffic increases on the surrounding highway network. Furthermore, in keeping with current Government policy, this report provides an initial review of opportunities for non-car travel to the site and considers whether the site is in a sustainable location in terms of transport.
- 1.3 This appraisal takes into account the principles of the following publications, which reflect current best practice and policy in highway design matters:
- National Planning Policy Framework [NPPF] (DfT, March 2012)
 - Guidance on Transport Assessment (DfT, March 2007)
 - Manual for Streets (DfT, 2007)
 - Manual for Streets 2 (CIHT, September 2010)
 - Local Transport Note (DfT 2008)
 - 6Cs Design Guide (Leicestershire County Council *et al* 2016)
- 1.4 A site visit was undertaken on 6 June 2016 between 0950 and 1245 hours. This included a detailed review of the current highway conditions, as well as a vehicle speed survey at the site frontage on Kenilworth Road.

2.0 EXISTING CONDITIONS

Site Details

- 2.1 The site comprises agricultural land with grade 3 classification to the east of Knowle, as shown in **Figure 1**. It measures approximately 15.3 hectares in area which can be seen in the site boundary plan at **Appendix A**. The site has agricultural fields to the north, east and south, and the village of Knowle to the west.
- 2.2 Beyond the site boundary, the immediate surrounding area includes residential properties in Knowle to the west and the village of Bentley Heath to the south. These villages include various local facilities such as a train station, shops, three primary schools, a village hall, pubs/takeaways and several supermarkets. The local highway network through the village of Knowle provides direct access to the M42, located approximately 3 kilometres west from the site access. This motorway provides a direct route into Birmingham as well as other larger towns and cities. Beyond the agricultural fields to the north lies the outskirts of Birmingham approximately 5 kilometres away, whilst Coventry is located approximately 10 kilometres to the east.

Highway Layout

- 2.3 Kenilworth Road extends past the site in a southeast/northwest direction. It comprises a single carriageway road with one lane in each direction, measuring approximately 6 metres wide within the site frontage. Kenilworth Road is subject to a 30mph speed limit past the site, which increases to 40mph approximately 260 metres east of the site frontage. There is a footway at the northern edge of the carriageway measuring between 1.2 and 1.6 metres in width. Kenilworth Road forms part of the B4101, which provides a strategic route serving several villages to the east, west and also the M42 as mentioned above.
- 2.4 A vehicle speed survey was carried out at the site frontage on Kenilworth Road during the site visit. The survey took place between 0950 and 1205 hours, during which time the weather conditions were sunny and dry. A total of 400 vehicle

speeds were recorded during the survey, comprising 200 in the eastbound direction and 200 in the westbound direction. A copy of the survey results is included at **Appendix B**, which confirm 85th percentile speeds of 37.75mph in the eastbound direction and 38.04mph in the westbound direction.

- 2.5 Kenilworth Road has recently been re-surfaced with the introduction of 'slow' markings at the boundary where the speed limit changes from 40mph to 30mph. Street lighting is frequent along the whole of Kenilworth Road at areas subject to the 30mph speed limit. Footways are present at the northern edge of the carriageway up to a point 100 metres west of the site where they become present on both sides.

Traffic Flows

- 2.6 An initial discussion was undertaken with Solihull Metropolitan Borough Council to determine whether any traffic flow data is available for the local area. Unfortunately, no data was obtainable and subsequently an overview of the traffic levels was determined from observations made during the site visit. This showed that Kenilworth Road is relatively lightly trafficked, particularly during the off-peak period, and hence should be able to accommodate the proposed levels of traffic. This is also reflected in the collision records for the area, which indicate that no accidents have occurred in the vicinity of the site over the last 3 years. Therefore, it is evident that simple T-junctions elsewhere at Kenilworth Road work effectively for vehicles manoeuvring to and from the carriageway.

Pedestrian Travel

- 2.7 The document 'Guidelines for providing for journeys on foot' (IHT, 2000) describes 'acceptable' walking distances for pedestrians without impaired mobility. It suggests that for a commuting or school trip, up to 500 metres is the desirable distance, whilst up to 1000 metres is an acceptable distance, and 2000 metres is the preferred maximum. Knowle Village Centre is approximately 700 metres from the site, and so within a reasonable walking distance (based on measurements taken from the centre of the site to a central point within the Village Centre). Local amenities include Public Houses, restaurants and a village hall, whilst Knowle

Church of England Primary School and Tesco Supermarket are also within a kilometre walking distance from the site.

- 2.8 A footway currently exists at the northern edge of Kenilworth Road with varying widths between 1.2 and 1.6 metres. Section 6.3.19 of Manual for Streets highlights the ideal footway widths to accommodate different pedestrian scenarios. A footway of 1.2 metres in width will be sufficient to serve an adult and child walking adjacent to each other. With the Knowle Church of England Primary School being located 515 metres from the site frontage, the current width of the footway should be satisfactory in accommodating these pedestrians. Once the footways enter the village centre, zebra crossings exist, allowing pedestrians to cross the main High Street at safe and suitable points. The High Street carriageway adopts 'zig zag' surface markings which warns drivers of pedestrians crossing the carriageway.

Cycle Travel

- 2.9 Local Transport Note 2/08 – Cycle Infrastructure Design (DfT October 2008) states that '*...many utility cycle journeys are under three miles [5 kilometres], although, for commuter journeys, a trip distance of five miles [8 kilometres] or more is not uncommon.*' [Paragraph 1.5.1, page 14]. Whilst there are no traffic-free routes on the National Cycle Network in the vicinity of the site, there are several on-road routes within Solihull approximately 3 kilometres northwest of the site. However, it should be noted that the general layout and topography of the local highway network should be sufficient to safely accommodate cycle journeys within the carriageway.

Bus Travel

- 2.10 It is generally recognised that developments should be situated within 400 metres walking distance of bus stops in urban areas, or 800 metres for more rural locations. **Figure 1** highlights the location of the nearest bus stops to the site, which comprises a 'flag and pole' arrangement with timetable information located approximately 160 metres to the east of the site access. The bus stop at Knowle Green Terminus comprises a brick built shelter arrangement with adjoining public

facilities and is located approximately 550 metres west of the site. These stops are therefore well within a reasonable walking distance of the site.

- 2.11 The Knowle Green Terminus bus stop currently serves Route Numbers 62, 88, 233, 514, S3 and S3W which collectively provide access to Leamington Spa, Baslall, Warwick, Hockley Heath and Solihull. The services vary in frequency however, Route Numbers S3 and S3W run at half hour frequencies Monday to Saturday; with Route Number 88 running at hourly frequencies Monday to Saturday; and Route Numbers 62, 233 and 514 having one daily service. Only Route Numbers S3 and S3W provide Sunday services at hourly frequencies.

Rail Travel

- 2.12 Dorridge Railway Station is located approximately 2.75 kilometres south of the site along the B4101 (Station Road). Whilst this is not within the recommended maximum distance of 2 kilometres for pedestrians, it is likely that the station will be used by cyclists or drivers. Southbound services run towards London Marylebone, Leamington Spa and Worcester Foregate Street whilst northern services run towards Birmingham Snow Hill. There is parking for 79 vehicles at the station car park, with an additional 6 spaces for disabled use. The station is operated by Chilton Railways and London Midland.

Highway Safety

- 2.13 To help provide an initial understanding of whether there are any ongoing highway safety issues on the surrounding roads, the website www.crashmap.co.uk was examined. **Figure 2** shows an extract from the CrashMap website highlighting accidents recorded in the vicinity of the site during a three-year period between 2012 and 2014 (most recent available data). The data indicates that there have been no recorded incidents on Kenilworth Road near the site frontage during this period. Using this information, it can be assumed that the local highway network generally operates safely, including current T-junctions and driveways that function as shared surfaces (accommodating movements by both pedestrians and vehicles) on Kenilworth Road. A total of 9 accidents have been recorded in the village

centre, however there are no immediate clusters and 8 of the accidents have been classified as 'slight' in severity.

3.0 DEVELOPMENT OPPORTUNITY

- 3.1 At this early stage the maximum size of development being considered for the site is up to 320 residential dwellings. This figure has been produced based on a review of the site, and a decision that a gross to net ratio of not less than 70% should be achievable. These figures are subject to the findings of this appraisal in respect of access, as well as other planning considerations that could affect the scale of development. Whilst employment use on the land has been disregarded due to the location of the site, it is possible that there is scope for ancillary retail and/or leisure uses due to the site's close proximity to the canal.

4.0 TRANSPORT CONSIDERATIONS

Change in traffic conditions

Potential residential development (up to 320 dwellings)

- 4.1 The TRICS database was interrogated to identify suitable trip rates to calculate the traffic increases that could be generated by the potential residential development at the site. The category 'Residential – Houses Privately Owned' was interrogated, excluding sites in Greater London and Ireland, as well as any weekend surveys. The search included all sites with between 100 and 650 dwellings, and returned a total of 9 surveys from 9 different sites. When ranked by the morning peak hour (0800 to 0900 hours), a site comprising 237 dwellings in Stanford-le-Hope was identified as the 85th percentile (TRICS ref: EX-03-A-01). Closer inspection of the site details confirms that it is in a similar rural location, with access to a comparable level of bus services and similar local amenities. The site is also in similar proximity to several local strategic 'A' roads, that link it to larger towns and cities. Consequently, given that this site is also the 85th percentile, it was considered suitable to calculate robust trip rates for the proposed development. Full details of

this TRICS search are included at **Appendix C**, and the following details confirm the resulting peak hour and daily trip rates (per dwelling):

- morning peak (0800 to 0900 hours) 0.177 arrive 0.523 depart
- evening peak (1700 to 1800 hours) 0.439 arrive 0.274 depart
- daily 2.976 arrive 2.932 depart

4.2 Based on the above rates, the potential development comprising up to 320 dwellings would generate the following peak hour and daily traffic movements:

- morning peak 57 arrive 167 depart 224 total
- evening peak 140 arrive 88 depart 228 total
- daily 953 arrive 940 depart 1893 total

Table 1 shows the daily traffic generation profile for the potential residential development.

Distribution Model and Traffic Assignment

4.3 To help understand how the above traffic increases might disperse within the surrounding roads, a P/T^2 gravity distribution model (shown in **Table 2**) has been created to assign the potential increases to the local highway network. The gravity model takes into account the population of key destinations that would be covered by a typical 45 minute commuting drive-time for peak hour journeys, as shown in **Figure 3**. The majority of vehicles will be seeking to undertake their journey in accordance with a typical work start time of 0900 hours and an end time of between 1700 and 1730 hours. It assumes access would be via Kenilworth Road and takes into consideration the most likely route that will be used by motorists travelling between the site and each destination, based on route planning software contained within Google Maps. Where multiple routes are available, judgement has been applied to determine which routes are likely to be used, including some instances where it has been assumed proportions of traffic would use both routes.

4.4 As Knowle would be entirely within the recommended walking distance, it has not been included as a destination as this could skew the results. **Table 2** shows the resulting P/T^2 percentage calculation for each destination within 45 minutes of the site location.

- 4.5 Using the percentages contained in **Table 2**, **Figure 4** shows the resulting distribution model for the local highway network. **Figure 5** then shows the subsequent assignment of the morning and evening peak hour traffic increases to the highway network based on this distribution model.

Site Access

- 4.6 Section 3.2 of the Solihull Metropolitan Borough Council's Highway Adoption and Procedures Guide highlights that its highway design standards are adopted from Manual for Streets for new developments. It also states that where Manual for Streets does not provide detailed guidance, DMRB standards will be used. Manual for Streets highlights that 'residential access roads' could be suitable to serve between 50 and 400 dwellings. This would require a 5.5 metres wide carriageway with a 2 metres wide footway to the eastern edge and a 3 metres wide shared footway/cycleway to the western edge of the carriageway. These footways will accommodate dropped kerbs with tactile paving to allow suitable access to the footway on Kenilworth Road. The access would also accommodate 10 metres wide kerb radii, as shown in **Drawing Number F16105/01**. Paragraph 8.5.3 of the Local Transport Note 2/08 - Cycle Infrastructure Design (DfT 2008) suggests that where there is no segregation between pedestrians and cyclists, a route width of 3 metres should generally be regarded as the minimum acceptable width. Whilst a shared footway/cycleway promotes sustainable travel from a site, constructing a width of 3 metres allows pedestrians to feel safe when occupying a shared surface with cyclists.
- 4.7 The primary access option that has been considered is a simple T-junction at the site frontage on Kenilworth Road. Based on current best practice and within the 6Cs Design Guide (design guidance adopted by a large proportion of the east midlands) a single T-junction without a right turn lane is sufficient to serve up to 400 dwellings. As paragraph 9.1.1 of Manual for Streets 2 highlights, a design that incorporates a lower number of junctions should be implemented where possible, as junctions regularly result in traffic delays and collisions. As mentioned in paragraph 2.4 of this report, a total of 400 vehicles were recorded during the speed survey between 0950 and 1205 hours. It should be noted that the majority of these vehicles were travelling independently and therefore it is anticipated that the two-

way flow of vehicles approximately equates to 250 vehicles per off peak hour. Paragraph 7.9.3 of Manual for Streets highlights that less than 300 vehicles per peak hour has generally been used to determine a relatively low traffic flow. This suggests that Kenilworth Road currently experiences low level traffic and therefore, the potential development should sufficiently be served by a simple T-junction. It should also be noted that other access roads and driveways operating off Kenilworth Road use this junction layout without any evident concerns.

- 4.8 Figure 7.1 of Manual for Streets confirms that a carriageway width of 5.5 metres is sufficient to allow two HGVs to pass. Hence, the access design shown in **Drawing Number F16105/01** should be suitable to accommodate all traffic movements associated with the development, including refuse and delivery vehicles. The T-junction also includes 10 metres kerb radii, which ensures that refuse vehicles can easily turn in and out of the site, noting that paragraph 6.8.1 of Manual for Streets indicates how occasional large vehicles can be expected to utilise the whole carriageway width. Furthermore, **Drawing Number F16105/01** shows how the proposed footways for the site access would provide dropped kerbs and tactile paving to allow pedestrians to safely reach the footway on the northern edge of Kenilworth Road.
- 4.9 As described above, the measured 85th percentile wet weather adjusted speeds recorded during the site visit (**Appendix B**) were used to calculate the visibility splay requirements for the potential access at Kenilworth Road. Section 10 of Manual for Streets 2 provides advice on calculating splays, and Table 10.1 confirms that where 85th percentile speeds exceed 60kph (37mph) a perception-reaction time of 2 seconds and deceleration rate of 0.25g should be applied within the formula. Given that speeds in both directions exceeded the 37mph threshold (38.04mph eastbound and 37.75mph westbound), these requirements have been used. Full details of the resulting splay calculations are included at **Appendix B**, which confirm that splays measuring 94 metres to the east and 95 metres to the west should be provided from any access at the Kenilworth Road site frontage.
- 4.10 Based on the above requirements, **Drawing Number F16105/01** demonstrates how the required splays could be achieved from the potential access at Kenilworth

Road, taken from a 2.4 metres setback distance to one metre into the carriageway. The splays shown on **Drawing Number F16105/01** pass within land that is currently not confirmed as being public highway. Nevertheless, there are indications that this land would be publicly maintained, with the presence of street lighting and telegraph poles. However, a comprehensive look into the highway boundary would need to be completed in due course to confirm this assumption. It is also evident that the splays would not be obstructed by existing vertical crests within the carriageway in either direction.

- 4.11 On-site observations highlight that some measures to reduce speeds through the village have been implemented, including coloured surfacing stating the maximum speed limit of the carriageway, and also gateway features which encourage safe driving within the village. Nevertheless, the measured 85th percentile speeds past the site frontage were slightly above the 30mph limit, and so the new access arrangement could present the opportunity to introduce additional traffic calming features to ensure that drivers passing the site access respect the speed limit.
- 4.12 In light of the above, **Drawing Number F16105/01** shows how the proposed simple T-junction should be suitable to accommodate the potential development. However, using the speed survey results from **Appendix B**, it is clear that the current level of traffic calming features on Kenilworth Road are not causing vehicles speeds to reduce to the 30mph speed limit of the road. Additional traffic calming features such as speed bumps or additional surface colouring could be implemented to further improve conditions along the link. These measures should not be absolutely necessary to make the access suitable, but could offer added benefits for all road users through Knowle, including pedestrians crossing the carriageway from adjacent to the site access.

Off-site impact

- 4.13 'Guidance on Transport Assessment' suggests that a significant impact could occur where a development generates 30 or more two-way peak hour traffic movements at a particular location. It notes that this is not an absolute value and larger increases could be comfortably accommodated in many circumstances. However,

it nevertheless provides a useful starting point for further detailed consideration of how a development could affect the existing road network.

- 4.14 The peak hour traffic assignment shown in **Figure 5** confirms that there would be a total increase of up to 228 two-way peak hour movements at the proposed access on Kenilworth Road. As described above, any future Transport Assessment should include a detailed capacity assessment, as well as further consideration of highway safety, to ensure these increases could be satisfactorily accommodated by the proposed access.
- 4.15 Beyond the site access, **Figure 5** shows potential peak hour increases exceeding 30 movements at the Kenilworth Road/Hampton Road T-junction (198 two-way peak hour movements). However, 148 of these would be straight-ahead movements and hence should not have any adverse impact on capacity. **Figure 5** also shows an overall increase of 150 peak hour movements at the Kenilworth Road/M42/A41 roundabout, however the carriageway incorporates 2 lanes from approximately 300 metres prior to the roundabout, reducing the impact that the traffic has on the junction. 87 of these movements are associated with the M42 motorway, which is a high speed road and accommodates characteristics which aid the flow of traffic and limit the levels of congestion onto it. With the roundabout being grade separated, the junction does not impact the flow of vehicles that are currently utilising the M42 and A41. The junctions to the east of the site would not see an increase of 30 peak hour movements and hence not require any further detailed assessment.
- 4.16 Based on the above measures and subject to further assessment, it is considered that there should be no insurmountable issues in respect of the proposed traffic increases at these locations. As mentioned previously, the CrashMap data indicates that there have been 9 incidents within Knowle Village Centre between 2012 and 2014. Whilst any further detailed assessment would provide a thorough analysis of these accidents, there are no outstanding clusters and therefore it can be concluded that the overall layout of the road system works effectively, including existing T-junctions.

- 4.17 Paragraph 32 of the NPPF notes that developments should only be refused where the residual cumulative impacts on the surrounding highway network are 'severe'. The above details show no evidence of any significant congestion issues on Kenilworth Road at present, whilst also highlighting that the local roads generally operate safely. Based on these initial observations, it is considered that the proposed traffic increases should not have any severe impact along Kenilworth Road.
- 4.18 Overall, the above details should help to provide confidence that the potential development would not have any severe off-site impact. Any future Transport Assessment can address these issues in detail, however in the meantime the Local Planning Authority should have sufficient evidence that the site could be allocated for residential development, without creating the risk of severe detrimental impacts within the surrounding highway network.

Access by non-car modes

- 4.19 The NPPF places a key emphasis on the need for new developments to be sustainable and this includes ensuring that suitable opportunities for sustainable travel are available. As described earlier in this report, the site is well positioned in proximity to Knowle and Bentley Heath Village which should encourage walking trips to local facilities within these locations. To account for the additional pedestrian use on Kenilworth Road, it may be deemed appropriate to increase the footway width on the northern edge of the carriageway to 2 metres. This should be possible, as the footway is bound by a 5.2 metres wide verge that appears to be within the Public Highway.
- 4.20 As for cycling, journeys to surrounding areas within a reasonable 5 kilometres distance could occur within the carriageway, and there is no evidence of any ongoing cycling safety issues based on information contained on the CrashMap website. Based on these initial observations, it is considered that the site location would be suitable to accommodate cycling trips within the carriageway.
- 4.21 In terms of opportunities for journeys by public transport, the Knowle Green Terminus bus stop is within a reasonable 550 metres walking distance of the site.

These stops are served by both a regular and frequent bus service operating at combined hourly frequencies in each direction from Monday to Saturday (with the S3 and S3W services continuing hourly services on Sundays). Dorridge Railway Station is also within a reasonable distance of the site for commuting trips further afield, or linked trips with cycling or bus.

- 4.22 Overall, the above details confirm that the site would be in a sustainable location and it is therefore considered that the site location would meet the requirements of the NPPF for sustainability in respect of transport issues.

5.0 SUMMARY AND CONCLUSIONS

- 5.1 Bancroft Consulting were appointed by Mr Stephen Dunn to provide highways and transportation advice in respect of a potential residential development on land at Kenilworth Road, to the east of Knowle in Solihull. This Traffic and Transport Appraisal has been produced in support of upcoming representations to Solihull Metropolitan Borough Council to secure allocation for development at the site as part of the emerging Local Plan. It considers a maximum development of up to 320 dwellings.

- 5.2 The key findings of this Appraisal can be summarised as follows:

- A suitable access arrangement could be delivered at Kenilworth Road to serve the potential development from a single point of access, based on local design standards. **Drawing Number F16105/01** shows how a simple T-junction with 10 metres kerb radii and a 5.5 metres wide carriageway could satisfactorily serve the site. With Kenilworth Road currently serving approximately 250 two-way hourly movements, the flow of vehicles can be deemed 'light'. Using this along with standard best practice, a residential development of 320 dwellings should adequately be served by a single point of access. In the event of any potential future capacity or safety concerns, a ghost island right turn lane could be a possible option for the site access, but at this stage is deemed unnecessary, based on the current conditions of the highway and existing T-junctions on Kenilworth Road. Nevertheless, this assessment should provide the Highway Authority and Local Planning Authority with sufficient confidence

that there would be no insurmountable issues that prevent the site from being served via Kenilworth Road.

- Based on representative trip rates, the potential development at the site could result in an increase of 224 two-way movements in the morning peak hour and 228 movements in the evening peak hour, with an overall increase of 1893 daily two-way movements.
- The potential peak hour traffic increases have been assigned to the surrounding highway network using a suitable distribution model, to help quantify how the development might increase traffic levels at key junctions and links. An initial review of conditions on Kenilworth Road indicates that the potential traffic increases along this route should have no severe impact in terms of capacity or highway safety.
- The appraisal provides an initial overview of the key issues that could affect the deliverability of any scheme from a highways and transportation perspective. Any subsequent planning application for the uses considered would need to be supported by a detailed Transport Assessment. The Transport Assessment would provide further detailed analysis of the impact of the potential traffic increases where necessary, including capacity analysis at the site access and specifically at the Kenilworth Road/M42/A41 roundabout. However, there do not appear to be any insurmountable issues based on the initial findings of this report. This should provide the Local Planning Authority with sufficient confidence that the site could be allocated for development without the risk of severe detrimental impacts within the surrounding roads.
- This Appraisal confirms that site would be in a sustainable location, subject to an appropriate crossing on Kenilworth Road to the footway at the northern edge of the carriageway. It is therefore considered that the site location would meet the requirements of the NPPF for sustainability in respect of transport issues.

5.3 In summary, this Traffic and Transport Appraisal helps to demonstrate that a suitable access arrangement could be delivered to serve a potential development at the site. It also provides an initial review of the surrounding highway network, and concludes that there are no apparent capacity or highway safety issues that could not be addressed as part of more detailed proposals. It also highlights the fact that

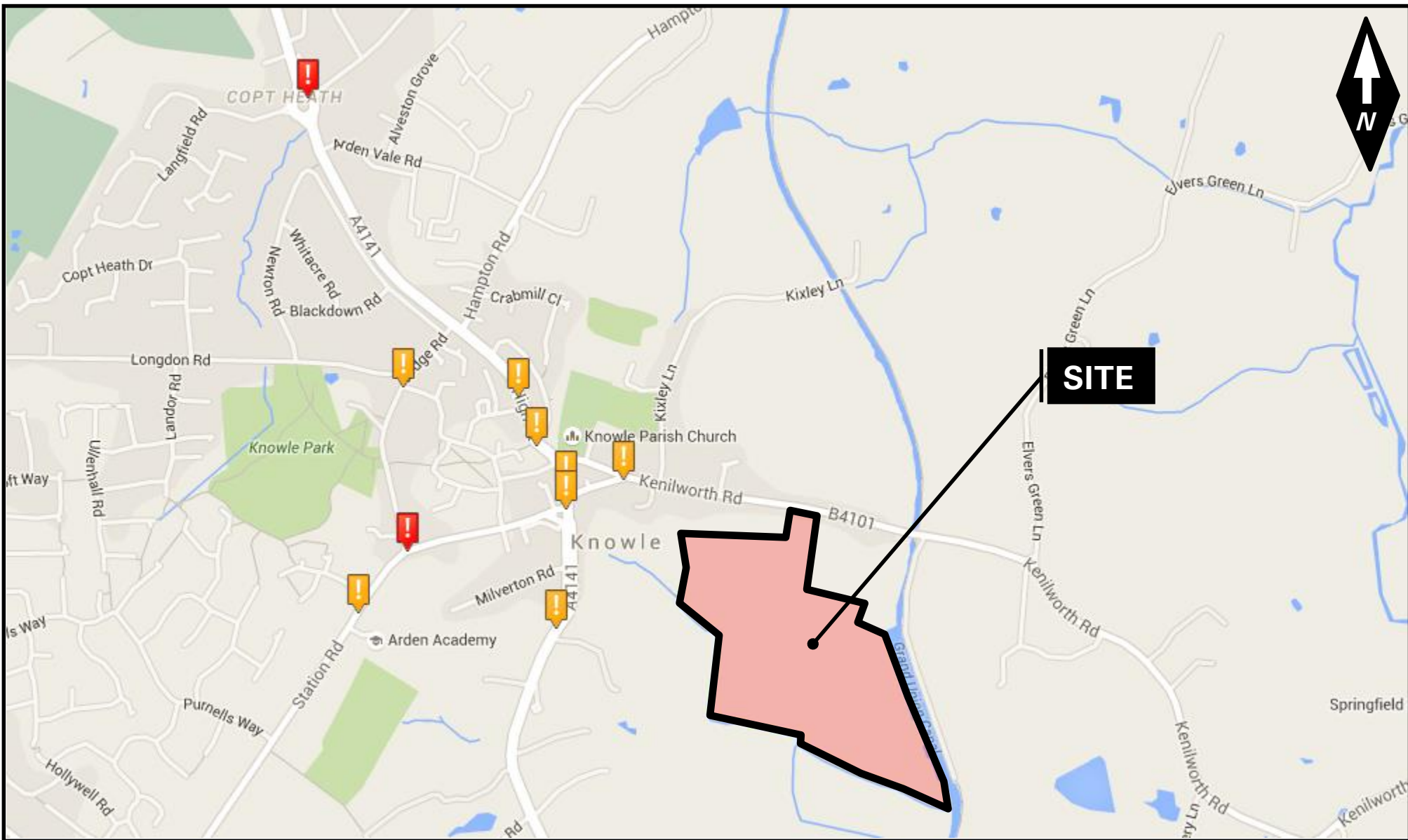
in terms of transport, a development at this location is sustainable. Hence, the findings of this initial report should be sufficient to provide the Highway Authority and Local Planning Authority with confidence that there are no major highways issues that should prevent the site from being allocated for residential development within the emerging Local Plan.

Time Period	Trip Rates (per 100sqm)		Traffic Generation (320) dwellings		
	Arrive	Depart	Arrive	Depart	Total
0700-0800	0.127	0.333	41	107	148
0800-0900	0.177	0.523	57	167	224
0900-1000	0.156	0.198	50	63	113
1000-1100	0.122	0.19	39	61	100
1100-1200	0.165	0.118	53	38	91
1200-1300	0.215	0.186	69	60	129
1300-1400	0.203	0.19	65	61	126
1400-1500	0.207	0.186	66	60	126
1500-1600	0.473	0.308	151	99	250
1600-1700	0.405	0.232	130	74	204
1700-1800	0.439	0.274	140	88	228
1800-1900	0.287	0.194	92	62	154
Daily	2.976	2.932	953	940	1408

TABLE 1: POTENTIAL DAILY TRAFFIC GENERATION PROFILE



SCALE: Do Not Scale	CLIENT: MR STEPHEN DUNN	JOB TITLE: KENILWORTH ROAD, KNOWLE	bancroftconsulting transport consultancy services	
DATE: 01.06.16	TITLE: SITE LOCATION PLAN	JOB NUMBER: F16105		
DRAWN: MC				



SCALE: Do Not Scale	CLIENT: MR STEPHEN DUNN	JOB TITLE: KENILWORTH ROAD, KNOWLE	bancroftconsulting transport consultancy services	
DATE: 01.06.16	TITLE: ACCIDENT INJURY RECORDS: taken from www.crashmap.co.uk		JOB NUMBER: F16105	FIGURE: 2
DRAWN: MC				

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SCALE: **Do Not Scale**

DATE: **01.06.16**

DRAWN: **MC**

CLIENT:

MR STEPHEN DUNN

TITLE:

45 MINUTE DRIVE-TIME-ZONE

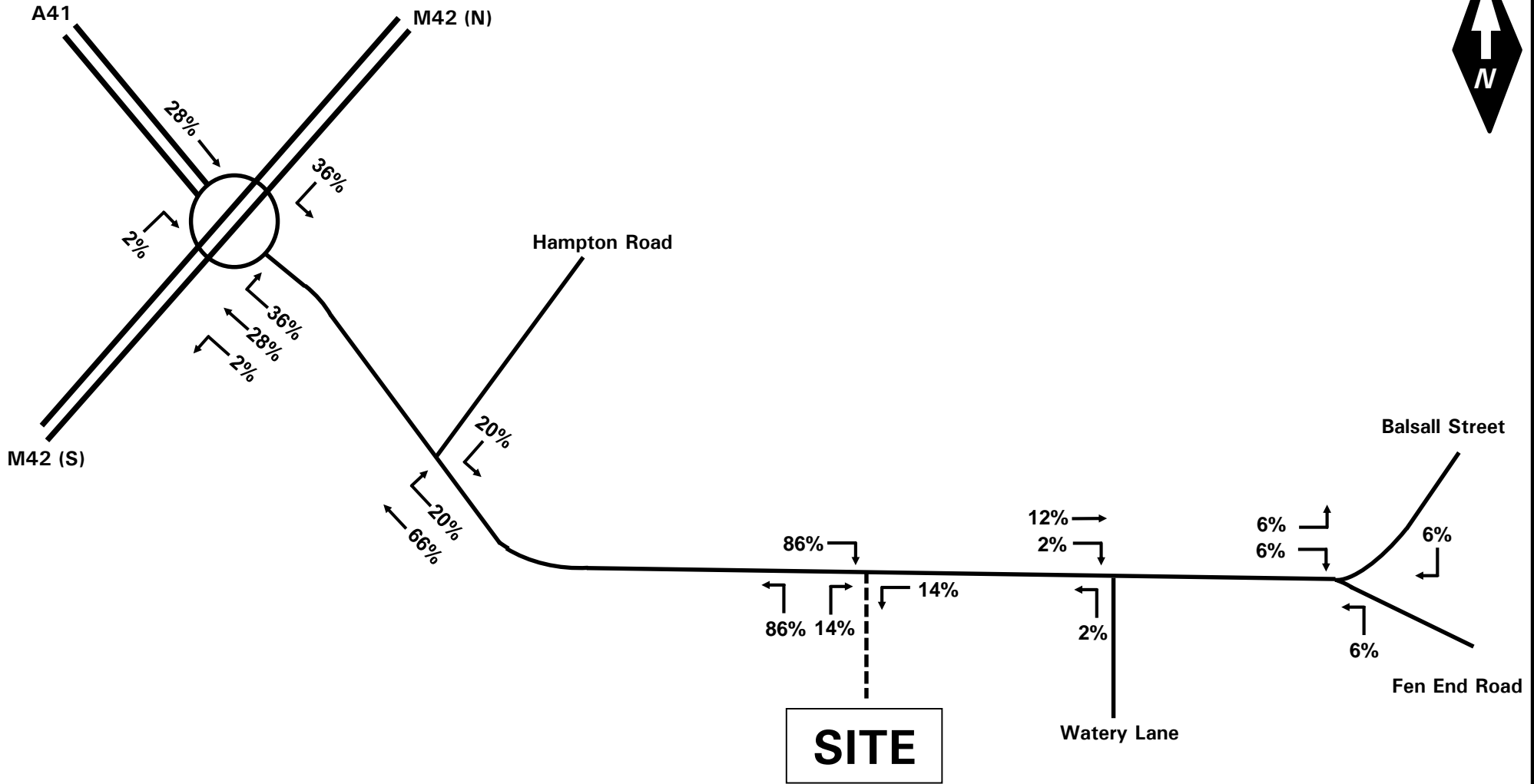
JOB TITLE:

KENILWORTH ROAD, KNOWLE

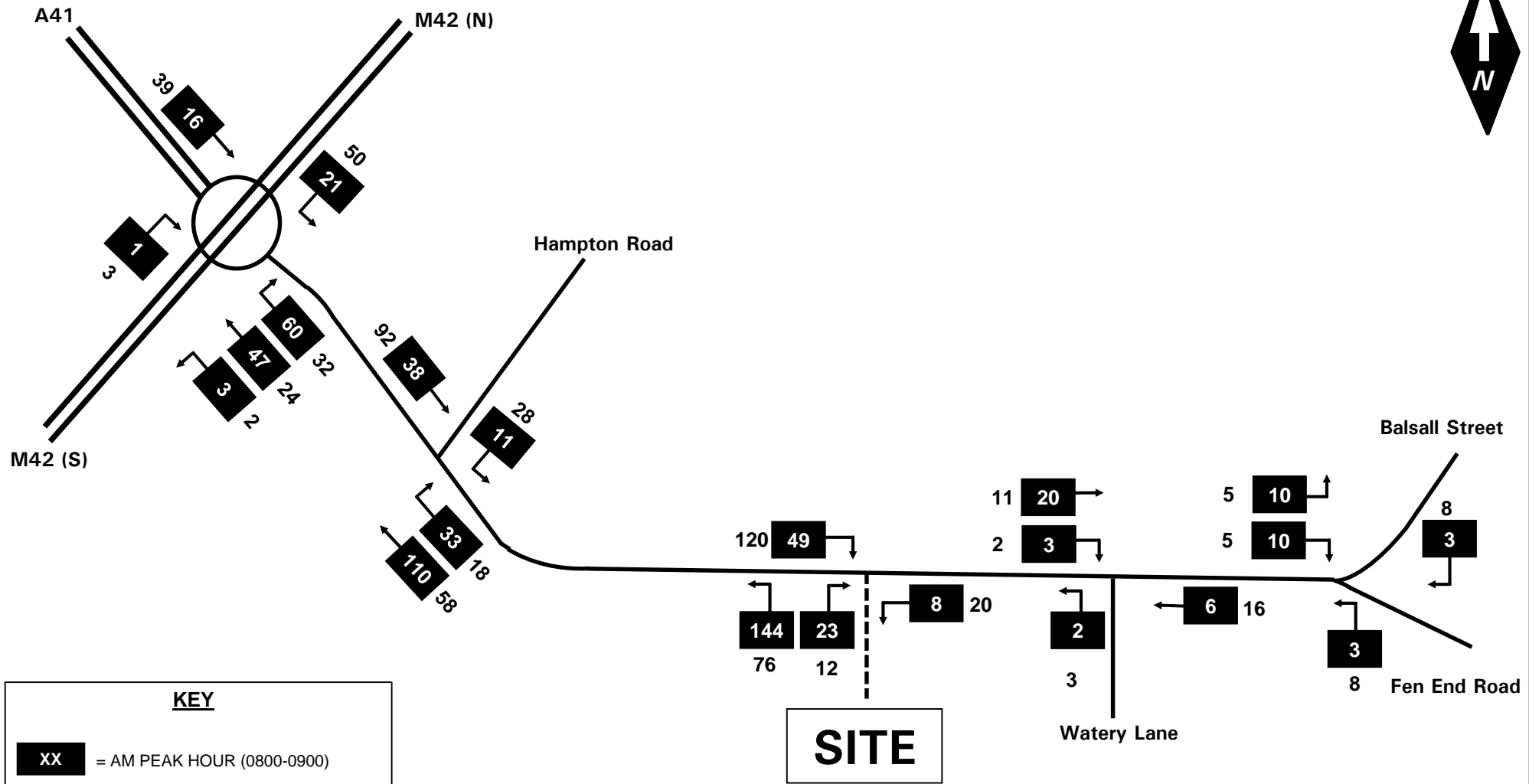
bancroftconsulting
transport consultancy services

JOB NUMBER:
F16105

FIGURE:
3




SCALE: Do Not Scale	CLIENT: MR STEPHEN DUNN	JOB TITLE: KENILWORTH ROAD, KNOWLE	bancroftconsulting transport consultancy services	
DATE: 01.06.16	TITLE: POTENTIAL DEVELOPMENT DISTRIBUTION PATTERN		JOB NUMBER: F16105	FIGURE: 4
DRAWN: MC				



KEY

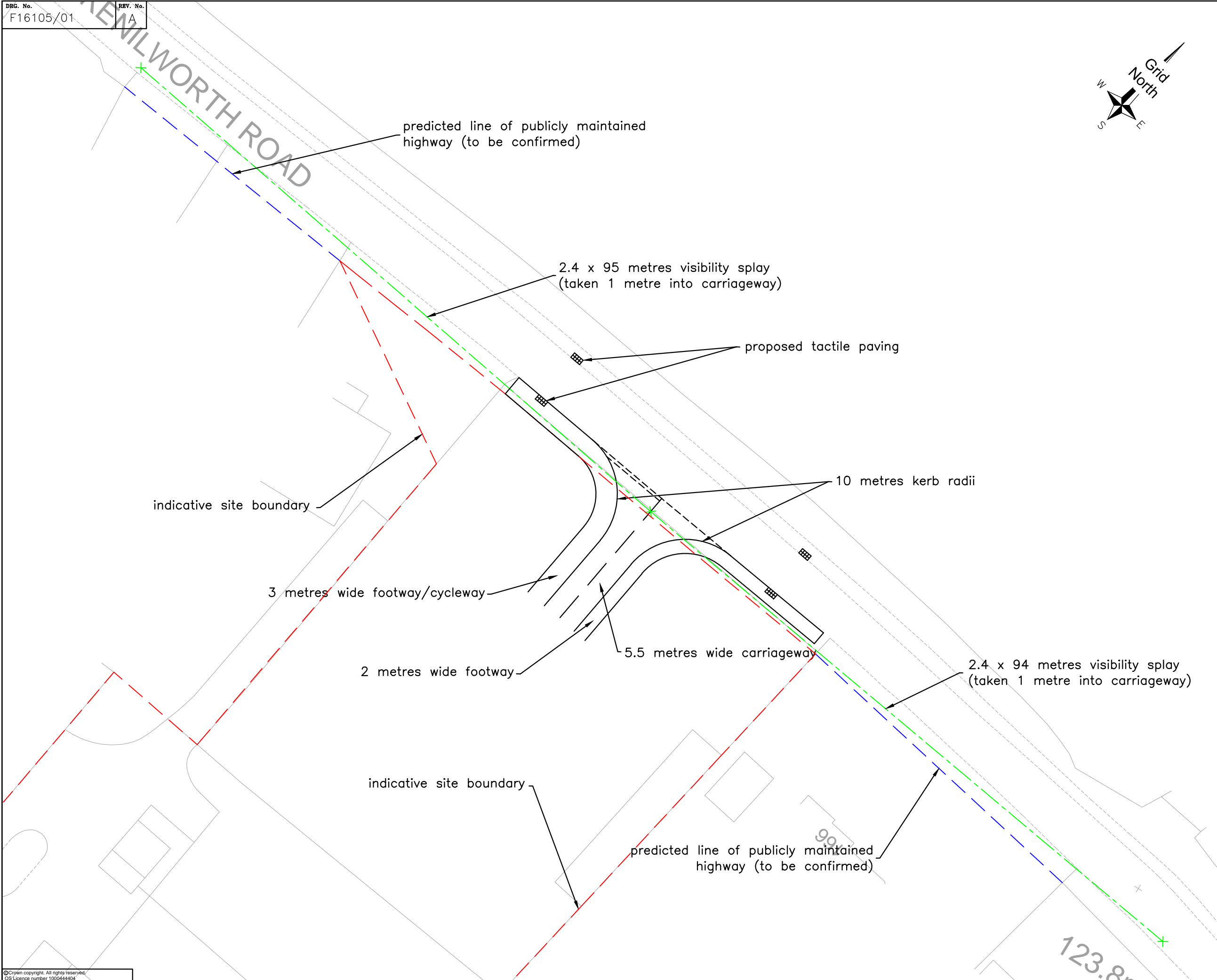
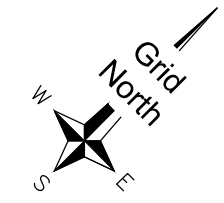
- XX** = AM PEAK HOUR (0800-0900)
- XX** = PM PEAK HOUR (1700-1800)

SCALE: Do Not Scale	CLIENT: MR STEPHEN DUNN	JOB TITLE: KENILWORTH ROAD, KNOWLE	 <small>transport consultancy services</small>	
DATE: 01.06.16	TITLE: POTENTIAL DEVELOPMENT PEAK HOUR TRAFFIC FLOWS	JOB NUMBER: F16105		
DRAWN: MC				

Location	Route from site	Population	Percentage of area within isochrone	P	T	P/T ²	Percentage of total P/T ²	Adjusted
West Bromwich	Route 1	147065	100%	147065	35	120.05	3.41%	3.41%
Birmingham	50% Route 1, 50% Route 2	926211	100%	926211	26	1370.13	38.90%	38.90%
Stratford-Upon-Avon	Route 3	23483	100%	23483	35	19.17	0.54%	0.54%
Warwick	Route 3	25425	100%	25425	22	52.53	1.49%	1.49%
Coventry	50% Route 4, 50% Route 5	320573	100%	320573	28	408.89	11.61%	11.61%
Solihull	Route 6	99642	100%	99642	10	996.42	28.29%	28.29%
Rugby	50% Route 1, 50% Route 5	66533	100%	66533	45	32.86	0.93%	0.93%
Leicester	Route 1	307581	50%	153790.5	45	75.95	2.16%	2.16%
Wolverhampton	Route 1	244038	100%	244038	45	120.51	3.42%	3.42%
Worcester	Route 7	96941	100%	96941	45	47.87	1.36%	1.36%
Loughborough	Route 1	54814	50%	27407	45	13.53	0.38%	0.38%
Derby	Route 1	250641	50%	125320.5	45	61.89	1.76%	1.76%
Stafford	Route 1	65607	100%	65607	45	32.40	0.92%	0.92%
Kidderminster	Route 7	57107	100%	57107	45	28.20	0.80%	0.80%
Walsall	Route 1	173250	100%	173250	35	141.43	4.02%	4.02%
Totals						3521.84	100.00%	100.00%

- Route 1 Kenilworth Rd (W), A4141 (N), M42 (N)
- Route 2 Kenilworth Rd (W), A4141 (N), Hampton Rd (N)
- Route 3 Kenilworth Rd (E), Watery Ln (S), A4141 (S)
- Route 4 Kenilworth Rd (E), Fen End Rd (E)
- Route 5 Kenilworth Rd (E), Balsall St (N)
- Route 6 Kenilworth Rd (W), A4141 (N), A41 (W)
- Route 7 Kenilworth Rd (W), A4141 (N), M42 (S)

TABLE 2 - RESULTS OF TRAFFIC DISTRIBUTION CALCULATIONS



NOTES:

--	--	--	--	--

REV.	DATE	DESCRIPTION	BY	CHK'D
A	20.06.16	AMENDMENTS TO LABELS FOLLOWING DISCUSSION WITH PROJECT TEAM	MC	CB

CLIENT
MR STEPHEN DUNN

CONTRACT
KENILWORTH ROAD, KNOWLE

TITLE
SITE ACCESS LAYOUT

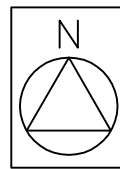
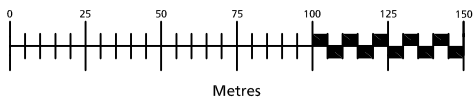
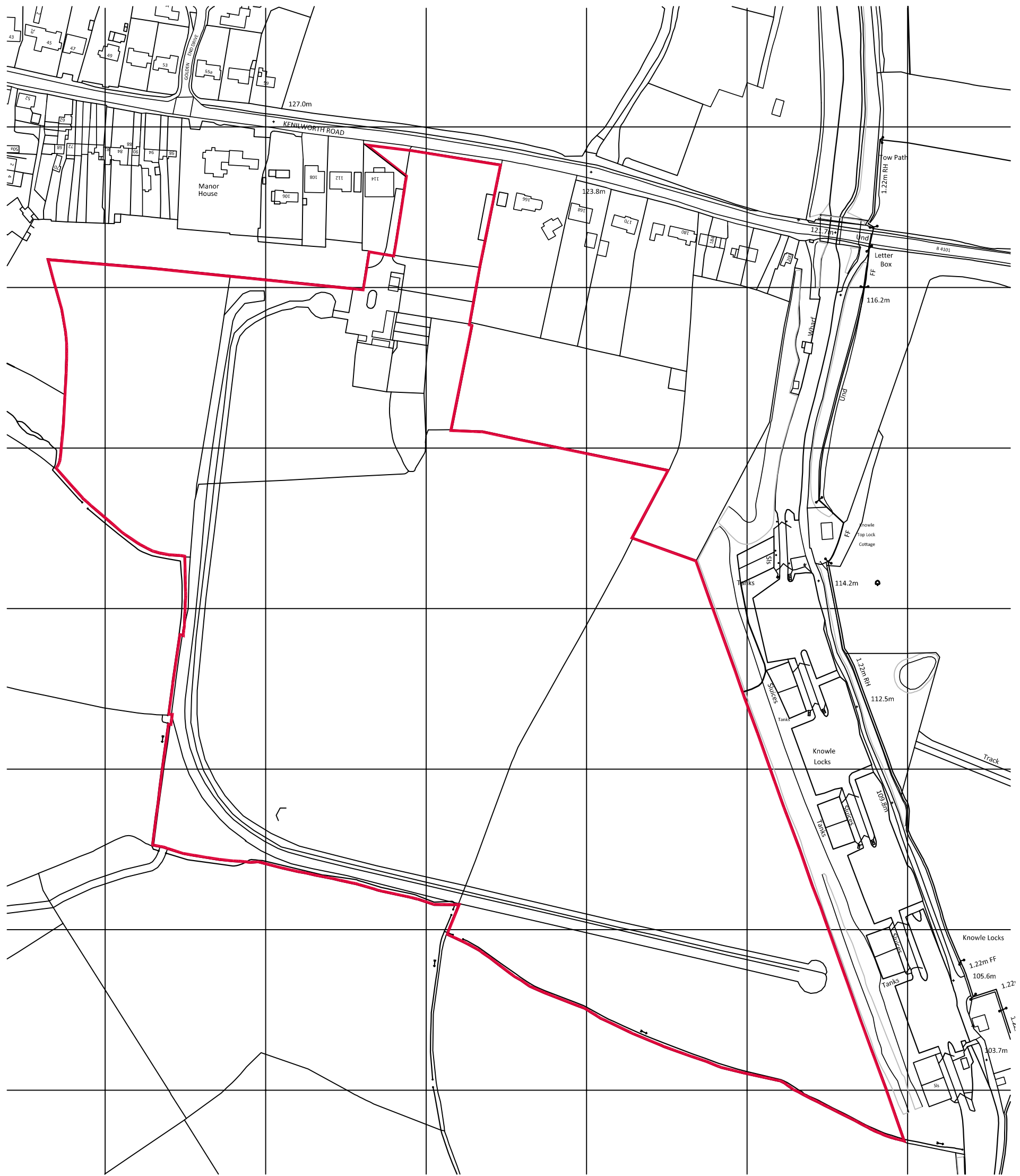
bancroftconsulting
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7 Gregory Boulevard
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t 0115 9602919
f 0115 9648201
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DRAWN BY	
NAME (PRINT)	DATE
MC	02.06.16
CHECKED BY	
NAME (PRINT)	DATE
CB	07.06.16
SCALE 1:500@A3	STATUS PRELIMINARY
DRG. NO. F16105/01	REV A

APPENDIX A – SITE BOUNDARY PLAN



REVISION	DATE	AMENDMENT
/	21/01/16	FIRST ISSUE

Notes:



SURVEYORS | PLANNERS | ARCHITECTS
 THE GATEHOUSE, HADHAM HALL, LITTLE HADHAM, WARE, HERTS SG11 2EB
 Phone (01279) 771188 Fax (01279) 771187 E-mail post@sworders.com

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SCHEME:			
LAND AT KNOWLE SOLIHULL			
TITLE:			
RED LINE PLAN			
PAPER SIZE:	Copyright 2015, Sworders Agricultural. All rights reserved. The contents of this drawing remain the sole property of Sworders Agricultural and must not be copied or reproduced without prior permission.		
SCALE:	DRAWN BY:	CHECKED BY:	DATE:
1:2500	CAK	GP	21/01/16
CLIENT NO.	DRAWING No.	REVISION	
DUN1766	216019 DWG 002	/	

**APPENDIX B – SPEED SURVEY RESULTS AND VISIBILITY
SPLAY CALCULATIONS**

observed speed mph x	no. of readings f	fx	fx ²
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	1	21	441
22	0	0	0
23	0	0	0
24	0	0	0
25	3	75	1875
26	3	78	2028
27	3	81	2187
28	4	112	3136
29	8	232	6728
30	13	390	11700
31	19	589	18259
32	18	576	18432
33	9	297	9801
34	17	578	19652
35	16	560	19600
36	18	648	23328
37	8	296	10952
38	16	608	23104
39	8	312	12168
40	5	200	8000
41	5	205	8405
42	6	252	10584
43	1	43	1849
44	5	220	9680
45	2	90	4050
46	6	276	12696
47	3	141	6627
48	1	48	2304
49	0	0	0
50	0	0	0
51	1	51	2601
52	1	52	2704
53	0	0	0
54	0	0	0
55	0	0	0
56	0	0	0
57	0	0	0
58	0	0	0
59	0	0	0
60	0	0	0
61	0	0	0
62	0	0	0
63	0	0	0
64	0	0	0
65	0	0	0
66	0	0	0
67	0	0	0
68	0	0	0
69	0	0	0
70	0	0	0
71	0	0	0
72	0	0	0
73	0	0	0
74	0	0	0
75	0	0	0
76	0	0	0
77	0	0	0
78	0	0	0
79	0	0	0
80	0	0	0
Total Σ	200	7031	252891

SPEED READINGS

location: **Kenilworth Road, Knowle**
direction: **Eastbound**
day: **Monday**
date: **06.06.16**
time: **0950 to 1205**

SUMMARY

mean 35.16 mph 56.74 kph
85%ile 40.51 mph 65.39 kph
wet 85%ile 38.04 mph 61.39 kph

Mean speed

$$\bar{x} = \frac{\sum fx}{\sum f} = 35.16 \text{ mph}$$

Standard deviation

$$S_x = \sqrt{\frac{1}{\sum f - 1} \times \left[\sum fx^2 - \frac{(\sum fx)^2}{\sum f} \right]} = 5.36 \text{ mph}$$

85 percentile dry weather spot speed

$$\bar{x} + S_x = 40.51 \text{ mph}$$

85 percentile wet weather journey speed

$$\bar{x} + S_x - 2.478 = 38.04 \text{ mph}$$

checks: 85%ile/mean = 1.15
should be 1.1 to 1.25

S.D./mean = 0.15
should be approx 1/6 (0.17)

KENILWORTH ROAD, KNOWLE EASTBOUND SPEED SURVEY RESULTS

observed speed mph	no. of readings		
x	f	fx	fx ²
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	2	52	1352
27	1	27	729
28	0	0	0
29	0	0	0
30	2	60	1800
31	12	372	11532
32	18	576	18432
33	19	627	20691
34	18	612	20808
35	24	840	29400
36	19	684	24624
37	19	703	26011
38	18	684	25992
39	14	546	21294
40	7	280	11200
41	11	451	18491
42	2	84	3528
43	3	129	5547
44	5	220	9680
45	2	90	4050
46	1	46	2116
47	1	47	2209
48	0	0	0
49	0	0	0
50	0	0	0
51	0	0	0
52	1	52	2704
53	1	53	2809
54	0	0	0
55	0	0	0
56	0	0	0
57	0	0	0
58	0	0	0
59	0	0	0
60	0	0	0
61	0	0	0
62	0	0	0
63	0	0	0
64	0	0	0
65	0	0	0
66	0	0	0
67	0	0	0
68	0	0	0
69	0	0	0
70	0	0	0
71	0	0	0
72	0	0	0
73	0	0	0
74	0	0	0
75	0	0	0
76	0	0	0
77	0	0	0
78	0	0	0
79	0	0	0
80	0	0	0
Total Σ	200	7235	264999

SPEED READINGS

location: **Kenilworth Road, Knowle**
direction: **Westbound**
day: **Monday**
date: **06.06.16**
time: **0950 to 1205**

SUMMARY

mean 36.18 mph 58.39 kph
85%ile 40.23 mph 64.93 kph
wet 85%ile 37.75 mph 60.93 kph

Mean speed

$$\bar{x} = \frac{\sum fx}{\sum f} = 36.18 \text{ mph}$$

Standard deviation

$$S_x = \sqrt{\frac{1}{\sum f - 1} \times \left[\sum fx^2 - \frac{(\sum fx)^2}{\sum f} \right]} = 4.06 \text{ mph}$$

85 percentile dry weather spot speed

$$\bar{x} + S_x = 40.23 \text{ mph}$$

85 percentile wet weather journey speed

$$\bar{x} + S_x - 2.478 = 37.75 \text{ mph}$$

checks: 85%ile/mean = 1.11
should be 1.1 to 1.25

S.D./mean = 0.11
should be approx 1/6 (0.17)

KENILWORTH ROAD, KNOWLE WESTBOUND SPEED SURVEY RESULTS

Vehicle speeds	38.04 mph 61.21 kph 17.00 v (m/s) 289.06 v ²	Formula: $SSD = vt + v^2 / 2(d+0.1a)$	Manual for Streets 2		DMRB	
Driver Perception-Reaction time	2 t (s)		Light Vehicles (less than 5% HGVs)	HGVs/Buses (over 5% of total vehicles)	All traffic (Maximum decel.)	All traffic (Desirable decel.)
	34.00 v x t	Perception-Reaction Time (t)	1.5s	1.5s	2s	2s
Deceleration Rate	0.25 g 2.45 d (m/s) 4.91 2d	Deceleration Rate (g = 9.81m/s ²)	0.45g	0.375g	0.375g	0.25g
Gradient	0.00 a* cir d+0.1a 4.905 2(d+0.1a)	Enter gradient as positive for uphill towards junction and negative for downhill towards junction				
Stopping Sight Distance (SSD) =	v t +	$v^2 / 2(d+0.1a)$	=	SSD		
	34.00 +	58.93	=	92.94		
SSD Bonnet Adjusted (SSD+2.4)**	95.34					

* for simplicity, gradient will be given as zero where details of levels are unavailable and observed gradients are deemed to be insignificant in terms of the effect on vehicle braking

** 2.4 metres added to splay to allow for bonnet length of approaching vehicles

VISIBILITY SPLAY CALCULATOR: KENILWORTH ROAD, KNOWLE - EASTBOUND

Vehicle speeds	37.75 mph 60.74 kph 16.87 v (m/s) 284.67 v ²	Formula: $SSD = vt + v^2 / 2(d+0.1a)$	Manual for Streets 2		DMRB	
Driver Perception-Reaction time	2 t (s)		Light Vehicles (less than 5% HGVs)	HGVs/Buses (over 5% of total vehicles)	All traffic (Maximum decel.)	All traffic (Desirable decel.)
Deceleration Rate	0.25 g 2.45 d (m/s) 4.91 2d	Perception-Reaction Time (t)	1.5s	1.5s	2s	2s
Gradient	0.00 a* 2.45 d+0.1a 4.905 2(d+0.1a)	Deceleration Rate (g = 9.81m/s ²)	0.45g	0.375g	0.375g	0.25g
Stopping Sight Distance (SSD) =	v t +	$v^2 / 2(d+0.1a)$	=	SSD		
	33.74 +	58.04	=	91.78		
SSD Bonnet Adjusted (SSD+2.4)**	94.18					

Enter gradient as positive for uphill towards junction and negative for downhill towards junction

* for simplicity, gradient will be given as zero where details of levels are unavailable and observed gradients are deemed to be insignificant in terms of the effect on vehicle braking

** 2.4 metres added to splay to allow for bonnet length of approaching vehicles

VISIBILITY SPLAY CALCULATOR: KENILWORTH ROAD, KNOWLE - WESTBOUND

APPENDIX C – TRICS DETAILS

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
11	SCOTLAND	
	FA FALKIRK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 108 to 432 (units:)
 Range Selected by User: 100 to 650 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 25/09/15

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	2 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

C3	9 days
----	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	6 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	8 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CH-03-A-02 SYDNEY ROAD	HOUSES/FLATS		CESHIRE
	CREWE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		174	
	Survey date: TUESDAY		14/10/08	Survey Type: MANUAL
2	CH-03-A-06 CREWE ROAD	SEMI-DET./BUNGALOWS		CESHIRE
	CREWE			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		129	
	Survey date: TUESDAY		14/10/08	Survey Type: MANUAL
3	DV-03-A-02 MILLHEAD ROAD	HOUSES & BUNGALOWS		DEVON
	HONITON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		116	
	Survey date: FRIDAY		25/09/15	Survey Type: MANUAL
4	EX-03-A-01 MILTON ROAD	SEMI-DET.		ESSEX
	CORRINGHAM			
	STANFORD-LE-HOPE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		237	
	Survey date: TUESDAY		13/05/08	Survey Type: MANUAL
5	FA-03-A-02 ROSEBANK AVENUE & SPRINGFIELD DRIVE	MIXED HOUSES		FALKIRK
	FALKIRK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		161	
	Survey date: WEDNESDAY		29/05/13	Survey Type: MANUAL
6	NE-03-A-02 HANOVER WALK	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	SCUNTHORPE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		432	
	Survey date: MONDAY		12/05/14	Survey Type: MANUAL
7	NY-03-A-06 HORSEFAIR	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	BOROUGHBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		115	
	Survey date: FRIDAY		14/10/11	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	SH-03-A-04	TERRACED		SHROPSHIRE
		ST MICHAEL'S STREET		
		SHREWSBURY		
		Suburban Area (PPS6 Out of Centre)		
		No Sub Category		
		Total Number of dwellings:	108	
		Survey date: THURSDAY	11/06/09	Survey Type: MANUAL
9	WS-03-A-04	MIXED HOUSES		WEST SUSSEX
		HILLS FARM LANE		
		BROADBRIDGE HEATH		
		HORSHAM		
		Edge of Town		
		Residential Zone		
		Total Number of dwellings:	151	
		Survey date: THURSDAY	11/12/14	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

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RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES

Ranking Type: TOTALS Time Range: 07:00-19:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 8 CH-03-A-06 Tot: 4.015

85th Percentile = No. 2 SH-03-A-04 Tot: 4.926

Median Values

Arrivals: 2.218

Departures: 2.345

Totals: 4.563

Mean Values

Arrivals: 2.216

Departures: 2.325

Totals: 4.541

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	EX-03-A-01	SEMI-DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	2.975	2.932	5.907	2.53
2	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	2.352	2.574	4.926	1.86
3	NY-03-A-06	BUNGALOWS & SE	BOROUGHBRIDGE	NORTH YORKSHIRE	115	Fri	14/10/11	2.313	2.339	4.652	3.50
4	DV-03-A-02	HOUSES & BUNGA	HONITON	DEVON	116	Fri	25/09/15	2.319	2.302	4.621	2.25
5	CH-03-A-02	HOUSES/FLATS	CREWE	CHESHIRE	174	Tue	14/10/08	2.218	2.345	4.563	2.81
6	FA-03-A-02	MIXED HOUSES	FALKIRK	FALKIRK	161	Wed	29/05/13	2.056	2.236	4.292	1.66
7	NE-03-A-02	SEMI DETACHED	SCUNTHORPE	NORTH EAST LINCOLNS	432	Mon	12/05/14	1.972	2.153	4.125	1.00
8	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	1.992	2.023	4.015	2.59
9	WS-03-A-04	MIXED HOUSES	HORSHAM	WEST SUSSEX	151	Thu	11/12/14	1.748	2.020	3.768	2.28

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
11	SCOTLAND	
	FA FALKIRK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 108 to 432 (units:)
 Range Selected by User: 100 to 650 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 25/09/15

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	2 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

C3	9 days
----	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	6 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	8 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CH-03-A-02 SYDNEY ROAD	HOUSES/FLATS		CESHIRE
	CREWE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	174		
	Survey date: TUESDAY	14/10/08		Survey Type: MANUAL
2	CH-03-A-06 CREWE ROAD	SEMI-DET./BUNGALOWS		CESHIRE
	CREWE			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	129		
	Survey date: TUESDAY	14/10/08		Survey Type: MANUAL
3	DV-03-A-02 MILLHEAD ROAD	HOUSES & BUNGALOWS		DEVON
	HONITON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	116		
	Survey date: FRIDAY	25/09/15		Survey Type: MANUAL
4	EX-03-A-01 MILTON ROAD	SEMI-DET.		ESSEX
	CORRINGHAM			
	STANFORD-LE-HOPE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	237		
	Survey date: TUESDAY	13/05/08		Survey Type: MANUAL
5	FA-03-A-02 ROSEBANK AVENUE & SPRINGFIELD DRIVE	MIXED HOUSES		FALKIRK
	FALKIRK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	161		
	Survey date: WEDNESDAY	29/05/13		Survey Type: MANUAL
6	NE-03-A-02 HANOVER WALK	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	SCUNTHORPE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	432		
	Survey date: MONDAY	12/05/14		Survey Type: MANUAL
7	NY-03-A-06 HORSEFAIR	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	BOROUGHBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	115		
	Survey date: FRIDAY	14/10/11		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	SH-03-A-04	TERRACED		SHROPSHIRE
		ST MICHAEL'S STREET		
		SHREWSBURY		
		Suburban Area (PPS6 Out of Centre)		
		No Sub Category		
		Total Number of dwellings:	108	
		Survey date: THURSDAY	11/06/09	Survey Type: MANUAL
9	WS-03-A-04	MIXED HOUSES		WEST SUSSEX
		HILLS FARM LANE		
		BROADBRIDGE HEATH		
		HORSHAM		
		Edge of Town		
		Residential Zone		
		Total Number of dwellings:	151	
		Survey date: THURSDAY	11/12/14	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

Bancroft Consulting Jarodale House, Sherwood Nottingham

Licence No: 539501

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES

Ranking Type: TOTALS Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under
20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 8 DV-03-A-02 Tot: 0.344

85th Percentile = No. 2 EX-03-A-01 Tot: 0.700

Median Values

Arrivals: 0.067

Departures: 0.354

Totals: 0.421

Mean Values

Arrivals: 0.133

Departures: 0.349

Totals: 0.482

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	0.287	0.454	0.741	1.86
2	EX-03-A-01	SEMI -DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	0.177	0.523	0.700	2.53
3	NY-03-A-06	BUNGALOWS & SE	BOROUGHBRIDGE	NORTH YORKSHIRE	115	Fri	14/10/11	0.096	0.400	0.496	3.50
4	CH-03-A-02	HOUSES/FLATS	CREWE	CHESHIRE	174	Tue	14/10/08	0.103	0.374	0.477	2.81
5	NE-03-A-02	SEMI DETACHED	SCUNTHORPE	NORTH EAST LINCOLNS	432	Mon	12/05/14	0.067	0.354	0.421	1.00
6	WS-03-A-04	MIXED HOUSES	HORSHAM	WEST SUSSEX	151	Thu	11/12/14	0.139	0.278	0.417	2.28
7	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	0.163	0.240	0.403	2.59
8	DV-03-A-02	HOUSES & BUNGA	HONITON	DEVON	116	Fri	25/09/15	0.103	0.241	0.344	2.25
9	FA-03-A-02	MIXED HOUSES	FALKIRK	FALKIRK	161	Wed	29/05/13	0.062	0.280	0.342	1.66

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
11	SCOTLAND	
	FA FALKIRK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 108 to 432 (units:)
 Range Selected by User: 100 to 650 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 25/09/15

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	1 days
Thursday	2 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

C3	9 days
----	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	6 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	8 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CH-03-A-02 SYDNEY ROAD	HOUSES/FLATS		CESHIRE
	CREWE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		174	
	Survey date: TUESDAY		14/10/08	Survey Type: MANUAL
2	CH-03-A-06 CREWE ROAD	SEMI-DET./BUNGALOWS		CESHIRE
	CREWE			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		129	
	Survey date: TUESDAY		14/10/08	Survey Type: MANUAL
3	DV-03-A-02 MILLHEAD ROAD	HOUSES & BUNGALOWS		DEVON
	HONITON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		116	
	Survey date: FRIDAY		25/09/15	Survey Type: MANUAL
4	EX-03-A-01 MILTON ROAD	SEMI-DET.		ESSEX
	CORRINGHAM			
	STANFORD-LE-HOPE			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		237	
	Survey date: TUESDAY		13/05/08	Survey Type: MANUAL
5	FA-03-A-02 ROSEBANK AVENUE & SPRINGFIELD DRIVE	MIXED HOUSES		FALKIRK
	FALKIRK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		161	
	Survey date: WEDNESDAY		29/05/13	Survey Type: MANUAL
6	NE-03-A-02 HANOVER WALK	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	SCUNTHORPE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		432	
	Survey date: MONDAY		12/05/14	Survey Type: MANUAL
7	NY-03-A-06 HORSEFAIR	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	BOROUGHBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		115	
	Survey date: FRIDAY		14/10/11	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	SH-03-A-04	TERRACED		SHROPSHIRE
		ST MICHAEL'S STREET		
		SHREWSBURY		
		Suburban Area (PPS6 Out of Centre)		
		No Sub Category		
		Total Number of dwellings:	108	
		Survey date: THURSDAY	11/06/09	Survey Type: MANUAL
9	WS-03-A-04	MIXED HOUSES		WEST SUSSEX
		HILLS FARM LANE		
		BROADBRIDGE HEATH		
		HORSHAM		
		Edge of Town		
		Residential Zone		
		Total Number of dwellings:	151	
		Survey date: THURSDAY	11/12/14	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

Bancroft Consulting Jarodale House, Sherwood Nottingham

Licence No: 539501

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES

Ranking Type: TOTALS Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. 8 WS-03-A-04 Tot: 0.371

85th Percentile = No. 2 EX-03-A-01 Tot: 0.713

Median Values

Arrivals: 0.317

Departures: 0.224

Totals: 0.541

Mean Values

Arrivals: 0.318

Departures: 0.206

Totals: 0.525

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	SH-03-A-04	TERRACED	SHREWSBURY	SHROPSHIRE	108	Thu	11/06/09	0.463	0.296	0.759	1.86
2	EX-03-A-01	SEMI-DET.	STANFORD-LE-HOPE	ESSEX	237	Tue	13/05/08	0.439	0.274	0.713	2.53
3	DV-03-A-02	HOUSES & BUNGA	HONITON	DEVON	116	Fri	25/09/15	0.388	0.233	0.621	2.25
4	CH-03-A-02	HOUSES/FLATS	CREWE	CHESHIRE	174	Tue	14/10/08	0.322	0.236	0.558	2.81
5	FA-03-A-02	MIXED HOUSES	FALKIRK	FALKIRK	161	Wed	29/05/13	0.317	0.224	0.541	1.66
6	NY-03-A-06	BUNGALOWS & SE	BOROUGHBRIDGE	NORTH YORKSHIRE	115	Fri	14/10/11	0.296	0.174	0.470	3.50
7	NE-03-A-02	SEMI DETACHED	SCUNTHORPE	NORTH EAST LINCOLNS	432	Mon	12/05/14	0.257	0.162	0.419	1.00
8	WS-03-A-04	MIXED HOUSES	HORSHAM	WEST SUSSEX	151	Thu	11/12/14	0.252	0.119	0.371	2.28
9	CH-03-A-06	SEMI-DET./BUNG	CREWE	CHESHIRE	129	Tue	14/10/08	0.132	0.140	0.272	2.59

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

Bancroft Consulting Jarodale House, Sherwood Nottingham

Licence No: 539501

Site Reference: EX-03-A-01 Multi-Modal Site
 Created: Version: 2008(b)v6.2.1 21/07/08
 Latitude/Longitude: 51.53517, 0.445885
 Land Use Type: 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 Region/Area: SOUTH EASTESSEX
 Version/Creation Date: 2008(b)v6.2.1 21/07/08

Description: SEMI-DET.
 Street: MILTON ROAD
 District: CORRINGHAM
 Town: STANFORD-LE-HOPE
 Post Code: SS17 8JU

Location: Edge of Town
 Location Sub Category: Residential Zone
 Use Class: C3

Population within 500m: 3521
 Population within 1 Mile: 15,001 to 20,000
 Population within 5 Miles: 125,001 to 250,000
 Car ownership within 5 Miles: 0.6 to 1.0

Public Transport Provision Summary

Day	Period	Total buses/trams within 400m	Total Trains within 1000m	Total Services
Monday-Friday	0700-1900	46		46
Monday-Friday	0700-1000	10		10
Monday-Friday	1600-1900	12		12
Saturday	0700-1900	46		46
Sunday	0700-1900			

Is site associated with a travel plan: No
 If not, are there any plans to implement a Travel Plan in the future? No
 Is survey data available before the implementation of the Travel Plan?
 Is the location of the site hilly or flat: Flat
 Urban Regeneration: No

Site area 6.84 hect
 Number of dwellings 237
 Housing Density 34.65

No. of developments for this Site: 1
 No. of survey Days for this Site: 1

Comments

This site is located on the north edge of Corringham. The site is within close proximity to the A13, the Stanford-le-Hope Bypass, which leads north-east towards Basildon and south-west towards Grays. The A13 also leads south-west towards the M25 and continues west into Central London.

Bus (or tram) site accessibility

- Is there at least 1 bus (or tram) stop within the site frontage or within 400m of the site frontage? : Yes
- If yes to question 3, where it is necessary to cross a road between the development and the stop, is there a conveniently placed crossing facility? : Yes
- If yes to question 3, are there at least 2 buses (or trams) per hour (per direction between 0700 and 1900) with routes serving significant areas of population within a 5 kilometre radius? (Mon-Sat): Yes
- If yes to question 5, what are the service characteristics? (please complete the outline information below)

Destination (town/area)	Number per hour	Approx. journey time
Basildon Bus Station	2	14

11. Please enter general comments/views about the relevance, quality and importance of public transport services relating to this development.

There is no train station within 1km of the site.

Design features encouraging non-car modes

12. Pedestrians

None

13. Pedal cycles

None

14. Public transport

There is a local bus service available.

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2001
Nearest Primary School	0.5 kilometres
Nearest Secondary School	0.2 kilometres
Nearest Local Shop/Corner Shop	0.4 kilometres
Nearest Main Supermarket	1.6 kilometres
Nearest Doctors Surgery	1.0 kilometres
Nearest Hospital with Minor Injuries/A & E	1.6 kilometres
Nearest Sports/Leisure Centre	0.3 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	
Number of people employed within Census Output Area	299
Number of households within Census Output Area	131
Number of people living within Census Output Area	386
Area of Census Output Area (hectares)	24.00
Population density within Census Output Area (per hectare)	16.43

SITE PHOTO



Site reference: EX-03-A-01 Multi-Modal survey site
 Trade name: MILTON ROAD

Site area (h/a): 6.84
 Site area excluding public open spaces (h/a): 6.84

Open since 1901

Occupied dwellings 237
 Unoccupied dwellings
 Total dwellings

Housing Density 34.65
 Privately owned units 237
 Non-Privately owned units 0
 Name of nearest site ANTHONY DRIVE
 Distance to nearest similar site 0 Km

Average Bedrooms Per Unit 3.03
 No of units with 1 bedroom 0
 No of units with 2 bedrooms 8
 No of units with 3 bedrooms 218
 No of units with 4+ bedrooms 11
 Total bedrooms 717
 Unit Density 34.6

Residential unit types

	Private	Non-Private	Total
Detached houses	2	0	2
Semi-detached houses	224	0	224
Terraced houses	0	0	0
Bungalows	11	0	11
Flats (in houses)	0	0	0
Flats (in blocks)	0	0	0
Other (specify below)			

Other:

Comments

The nearest similar site is located 0.8km away.

Multi-Modal survey site

On-Site parking

Total no. of parking spaces	599
Parking Spaces Per Hectare	87.573
Parking Spaces Per dwelling	2.527
Arrivals Per Parking Space	1.18

Number of spaces

On-Street	86
Driveway	290
Garages	203
Communal parking spaces	20

Off-Site parking details

Is there off-site parking available

Yes

Off-Site parking included in the counts

No

Free On-Street parking available nearby

Yes

If yes, considered easy to find a space

Yes

If prepared to pay, easy to find somewhere to park off-site all day

No

Parking restrictions

Area subject to parking restrictions (controlled parking zone - CPZ)

No

Off-Street parking

Off-Street parking available

NO

Park & Ride

Park & Ride Type Facility providing relevant means of accessing the site

No

Site reference: EX-03-A-01 Survey date: 13/05/08 Day of week: Tuesday
 Multi-Modal survey site
 Vehicles surveyed: Total vehicles
 Survey type: Manual Count
 AM weather: Hot and Clear
 PM weather: Hot and Clear

Initial car park occupancy: Final car park occupancy:

BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE

Parking Capacity

Data proportions in %

Motor cars	86	Motor cycles	0	Public service	0
Light goods	11	OGV (1)	1	OGV (2)	0
				Taxis	2

Time	Arr 705	Dep 695	Totals	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	30	79	109	(-49)
08:00-09:00	42	124	166	(-131)
09:00-10:00	37	47	84	(-141)
10:00-11:00	29	45	74	(-157)
11:00-12:00	39	28	67	(-146)
12:00-13:00	51	44	95	(-139)
13:00-14:00	48	45	93	(-136)
14:00-15:00	49	44	93	(-131)
15:00-16:00	112	73	185	(-92)
16:00-17:00	96	55	151	(-51)
17:00-18:00	104	65	169	(-12)
18:00-19:00	68	46	114	(10)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Comments

There are no initial and final car park occupancy figures provided as there are garages at the site and therefore these figures could not be counted.
 No PSVs entered or exited the site during this survey.

Site reference: EX-03-A-01 Survey date: 13/05/08 Day of week: Tuesday
 Multi-Modal survey site
 Vehicles surveyed: OGV

Data proportions in % OGV (1) 100 OGV (2) 0

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 6	Dep 8	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	2	2	4	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	2	4	6	(-2)
13:00-14:00	2	2	4	(-2)
14:00-15:00	0	0	0	(-2)
15:00-16:00	0	0	0	(-2)
16:00-17:00	0	0	0	(-2)
17:00-18:00	0	0	0	(-2)
18:00-19:00	0	0	0	(-2)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: EX-03-A-01

Survey date: 13/05/08

Day of week: Tuesday

Multi-Modal survey site

Vehicles surveyed: Taxis

Time	Arr 16	Dep 12	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	4	2	6	(2)
08:00-09:00	1	2	3	(1)
09:00-10:00	1	0	1	(2)
10:00-11:00	0	0	0	(2)
11:00-12:00	1	1	2	(2)
12:00-13:00	1	1	2	(2)
13:00-14:00	1	0	1	(3)
14:00-15:00	1	2	3	(2)
15:00-16:00	1	0	1	(3)
16:00-17:00	2	1	3	(4)
17:00-18:00	2	2	4	(4)
18:00-19:00	1	1	2	(4)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: EX-03-A-01

Survey date: 13/05/08

Day of week: Tuesday

Multi-Modal survey site

Vehicles surveyed: Cycles

Time	Arr 26	Dep 28	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	2	2	4	(0)
08:00-09:00	0	2	2	(-2)
09:00-10:00	1	0	1	(-1)
10:00-11:00	0	1	1	(-2)
11:00-12:00	0	0	0	(-2)
12:00-13:00	1	0	1	(-1)
13:00-14:00	0	1	1	(-2)
14:00-15:00	0	2	2	(-4)
15:00-16:00	4	5	9	(-5)
16:00-17:00	3	1	4	(-3)
17:00-18:00	7	8	15	(-4)
18:00-19:00	8	6	14	(-2)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: EX-03-A-01

Survey date: 13/05/08

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Pedestrians

Time	Arr 252	Dep 245	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	11	32	43	(-21)
08:00-09:00	21	71	92	(-71)
09:00-10:00	17	22	39	(-76)
10:00-11:00	3	11	14	(-84)
11:00-12:00	11	6	17	(-79)
12:00-13:00	9	4	13	(-74)
13:00-14:00	10	8	18	(-72)
14:00-15:00	5	13	18	(-80)
15:00-16:00	89	24	113	(-15)
16:00-17:00	31	15	46	(1)
17:00-18:00	18	20	38	(-1)
18:00-19:00	27	19	46	(7)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: EX-03-A-01 Survey date: 13/05/08 Day of week: Tuesday
 Multi-Modal survey site
 People Surveyed: Public transport Users

Time	Arr 15	Dep 9	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	1	3	4	(-2)
09:00-10:00	1	3	4	(-4)
10:00-11:00	1	1	2	(-4)
11:00-12:00	0	1	1	(-5)
12:00-13:00	4	1	5	(-2)
13:00-14:00	4	0	4	(2)
14:00-15:00	0	0	0	(2)
15:00-16:00	0	0	0	(2)
16:00-17:00	2	0	2	(4)
17:00-18:00	2	0	2	(6)
18:00-19:00	0	0	0	(6)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: EX-03-A-01 Survey date: 13/05/08 Day of week: Tuesday
 Multi-Modal survey site
 People Surveyed: Bus/Tram Passengers

Time	Arr 15	Dep 9	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	1	3	4	(-2)
09:00-10:00	1	3	4	(-4)
10:00-11:00	1	1	2	(-4)
11:00-12:00	0	1	1	(-5)
12:00-13:00	4	1	5	(-2)
13:00-14:00	4	0	4	(2)
14:00-15:00	0	0	0	(2)
15:00-16:00	0	0	0	(2)
16:00-17:00	2	0	2	(4)
17:00-18:00	2	0	2	(6)
18:00-19:00	0	0	0	(6)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: EX-03-A-01

Survey date: 13/05/08

Day of week: Tuesday

Multi-Modal survey site

People Surveyed: Total people

Time	Arr 1246	Dep 1266	Totals	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	46	134	180	(-88)
08:00-09:00	87	273	360	(-274)
09:00-10:00	63	92	155	(-303)
10:00-11:00	40	70	110	(-333)
11:00-12:00	57	45	102	(-321)
12:00-13:00	83	61	144	(-299)
13:00-14:00	78	66	144	(-287)
14:00-15:00	68	68	136	(-287)
15:00-16:00	269	153	422	(-171)
16:00-17:00	167	98	265	(-102)
17:00-18:00	160	114	274	(-56)
18:00-19:00	128	92	220	(-20)
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				