

**Project: Long Stratton, Norwich**

**Client: Rosconn Strategic Land**

***Technical Note: TN01 Preliminary Transport & Access Review***

*Project No: 21-0194*

*Date: 22 March 2021*

## **1. Introduction**

- 1.1 Cotswold Transport Planning (CTP) has been commissioned by Rosconn Strategic Land to undertake a high-level review of land south of Flowerpot Lane, in Long Stratton, Norfolk. Long Stratton sits on the A140 approximately 12 miles south of Norwich and 12 miles north of Diss.
- 1.2 The whole site is identified as site 4033 and could accommodate up to 700 dwellings. The northern part of site which forms part of site 4033 but also has its own reference, site 4034, could accommodate 150 dwellings. The whole site has frontage onto Flowerpot Lane over approximately 150m and onto the A140 over approximately 250m.
- 1.3 One of the objectives of this high-level review is to identify an access strategy that could serve site 4034 in isolation or if the whole site were to come forward. A flexible approach is therefore required and to provide some future resilience it is likely that an allowance will need to be made for some form of vehicular connection between the two sites. As a minimum this would need to provide a through route for buses, pedestrians, and cycles but there may also be merit in considering a route for all vehicles to relieve pressure at the A140 / Flowerpot Lane traffic signals where capacity constraints have been identified by the Highway Authority.
- 1.4 Long Stratton has a good range of services and facilities that are mainly located along the A140 where it passes through the village centre. On the western side of the village there are primary and secondary schools, a GP surgery, a library, and a leisure centre. Long Stratton has a strong employment base, with the main offices of South Norfolk Council and Saffron Housing Trust, along with a wide variety of businesses at Tharston Industrial Estate.





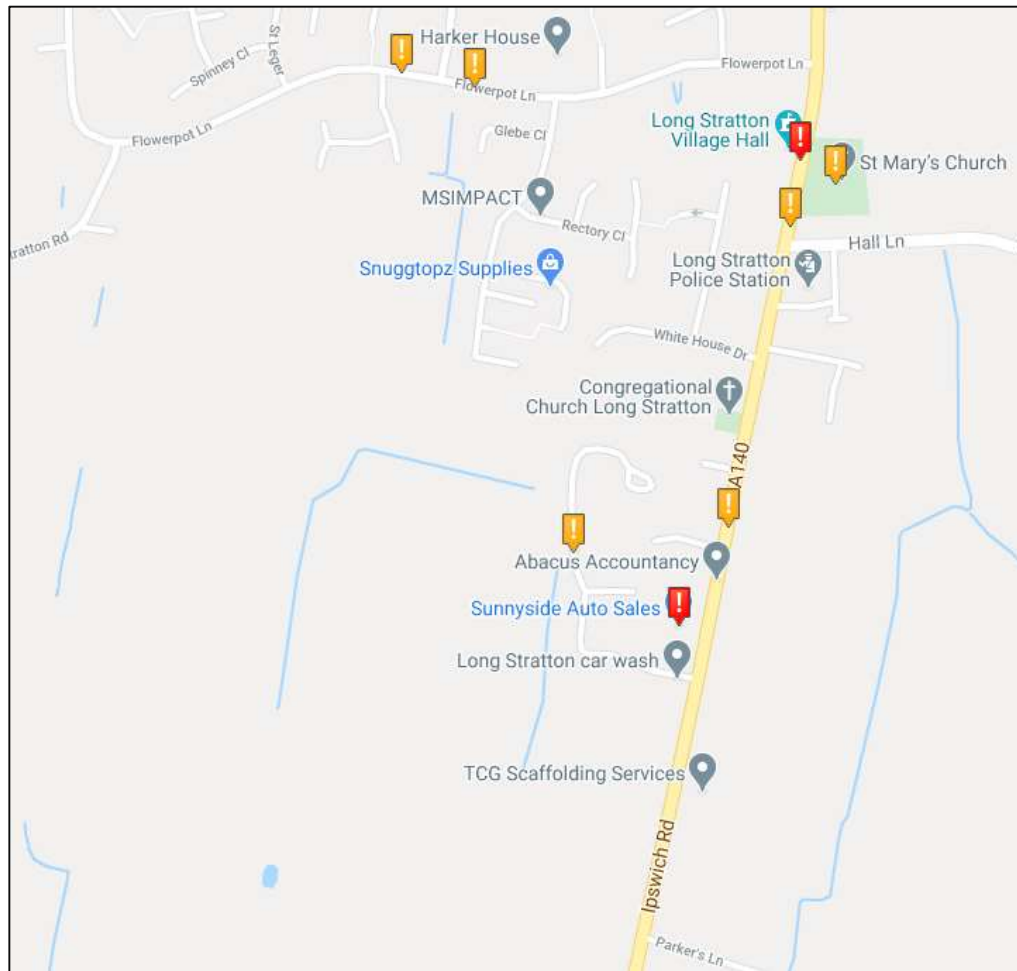
- centre of the village have long been recognised as a problem, leading to a long running campaign for a bypass of the town.
- 2.2 Along the site frontage, the A140 has a 7.3m carriageway, has a straight alignment, and is subject to a 50mph speed restriction. The 30mph limit begins just to the north of the site boundary and south of Lime Tree Avenue where there is also a bus stop for northbound services. The bus stop for southbound services is approximately 60m north of Lime Tree Avenue.
- 2.3 There is a narrow footway on the west side of the A140 that extends along the whole of the frontage to Site 4033. Approximately midway along the frontage of Site 4033, on the east side of the A140, is an existing scaffolding business. This is accessed from the A140 via a simple priority junction.
- 2.4 Flowerpot Lane is a single carriageway residential road approximately 6.5m wide. It is subject to a 20mph limit between the A140 and the eastern corner of the frontage to Site 4034. At this point the speed limit changes to 30mph and extends along the site frontage until it becomes derestricted just beyond the junction with Chequers Road.
- 2.5 To the west, Flowerpot Lane becomes Stratton Road and is the route to a number of villages including Wacton, Great Moulton, and Pottergate Street. To the east, it forms a three-arm traffic signal junction with the A140.
- 2.6 Chequers Road extends in a northerly direction and essentially forms the western boundary of Long Stratton. The only substantial developed area to the west of Chequers Road is Tharston Industrial Estate which is a main employment area with a wide variety of businesses.
- 2.7 Flowerpot Lane is a residential road with direct frontage access. There are six simple priority junctions along its length providing access to residential areas on both sides of the road. There is a continuous footway on the north side of Flowerpot Lane between the A140 and Chequers Road. The footway on the southern side of Flowerpot Lane begins at Manor Road and stops at the eastern corner of the frontage to Site 4034. There is a zebra crossing on Flowerpot Lane just to the west of St Mary's Road.



- 2.8 Long Stratton Health Centre and a residential care home are located on the northside of Flowerpot Lane just to the east of St Mary's Road.
- 2.9 The nearest bus stops to the site are on Flowerpot Lane just to the east of Manor Road and at the southern end of Manor Road.
- 2.10 Manor Road is the most direct route to Manor Field Infant School and Nursery and Long Stratton High School. It is subject to a 20mph speed limit and has footways on both sides.
- 2.11 At its northern end, Manor Road forms a junction with Swan Lane where there are a wide variety of services and facilities including South Norfolk Council offices, Saffron Housing Trust offices, Long Stratton Leisure Centre, St Mary's Church of England Junior school, the Long Stratton Medical Partnership, and the Mayfields Care Home.
- 2.12 The main shopping facilities within the village are located along the A140 where there is Co-op supermarket in the village centre.

Highway Safety

- 2.13 A high-level review of highway safety has been undertaken using the Crashmap website for the most recent five-year period available.
- 2.14 An extract from Crashmap showing the recorded personal injury accidents between 2015 and 2019 is presented in Figure 2.



**Figure 2: Extract from Crashmap**

- 2.15 Figure 2 indicates that there have only been two slight collisions on Flowerpot Lane either side of the Manor Road junction. There have been no collisions recorded at the A140 / Flowerpot Lane traffic signals and none on the A140 where it passes the frontage to Site 4033.
- 2.16 This collision record is not considered indicative of a specific road safety issue on the local highway network and significantly there have been no collisions along the site frontages on the A140 or Flowerpot Lane.

### 3. Public Transport, Pedestrians and Cyclists

#### Bus Services

- 3.1 There are three main bus services operating in Long Stratton, Routes 1, 2, and 38.



- 3.2 Routes 1 and 2 are run by a combination of Simonds Coach and Travel and Konect Bus and operate between Norwich and Diss via Long Stratton. There are 12 services per day, Monday to Friday, operating at about an hourly frequency between 7.15am and 5.30pm. There are seven services on a Saturday between 9am and 7pm and six Sunday services to Norwich only operating every hour and half between 9am and 5.15pm.
- 3.3 Route 38 is run by First Norfolk and Suffolk and operates between Norwich and Long Stratton. There are 14 services per day, Monday to Saturday, operating at an hourly frequency throughout the day which reduces to two-hourly in the evening until the last service at 11.15pm. There is no Sunday service.
- 3.4 The closest bus stops to Site 4034 are on Flowerpot Lane and Manor Road which are approximately 250m and 280m respectively from the centre of the site.
- 3.5 The closest bus stops to Site 4033 are on the A140 which are approximately 450m to the northbound stop and 540m to the southbound stop from the centre of the site.

#### Walking and Cycling

- 3.6 In relation to walking and cycling, Long Stratton is a relatively compact settlement, with a concentration of shops and commercial facilities along the A140 through the village centre and community facilities and employment along Swan Lane and Chequers Road.
- 3.7 The volume and nature of through traffic on the A140 is seen as a barrier to people walking and cycling for everyday activities. The South Norfolk Place Making Guide also identifies poor permeability into the centre of Long Stratton as an issue.
- 3.8 Many of the roads to the west of the village centre are however considered conducive to encouraging walking and cycling as there is a continuous footway network and many of the residential roads including Flowerpot Lane and Manor Road are subject to a 20mph speed restriction. Although there are no dedicated cycle facilities, the characteristics of the road network make it suitable for on-carriageway cycling.

#### **4. Local Facilities**

- 4.1 Long Stratton has a good range of services and facilities that are mainly located along the A140 where it passes through the village centre. On the western side of the village there are primary and secondary schools, a GP surgery, a library, and a leisure
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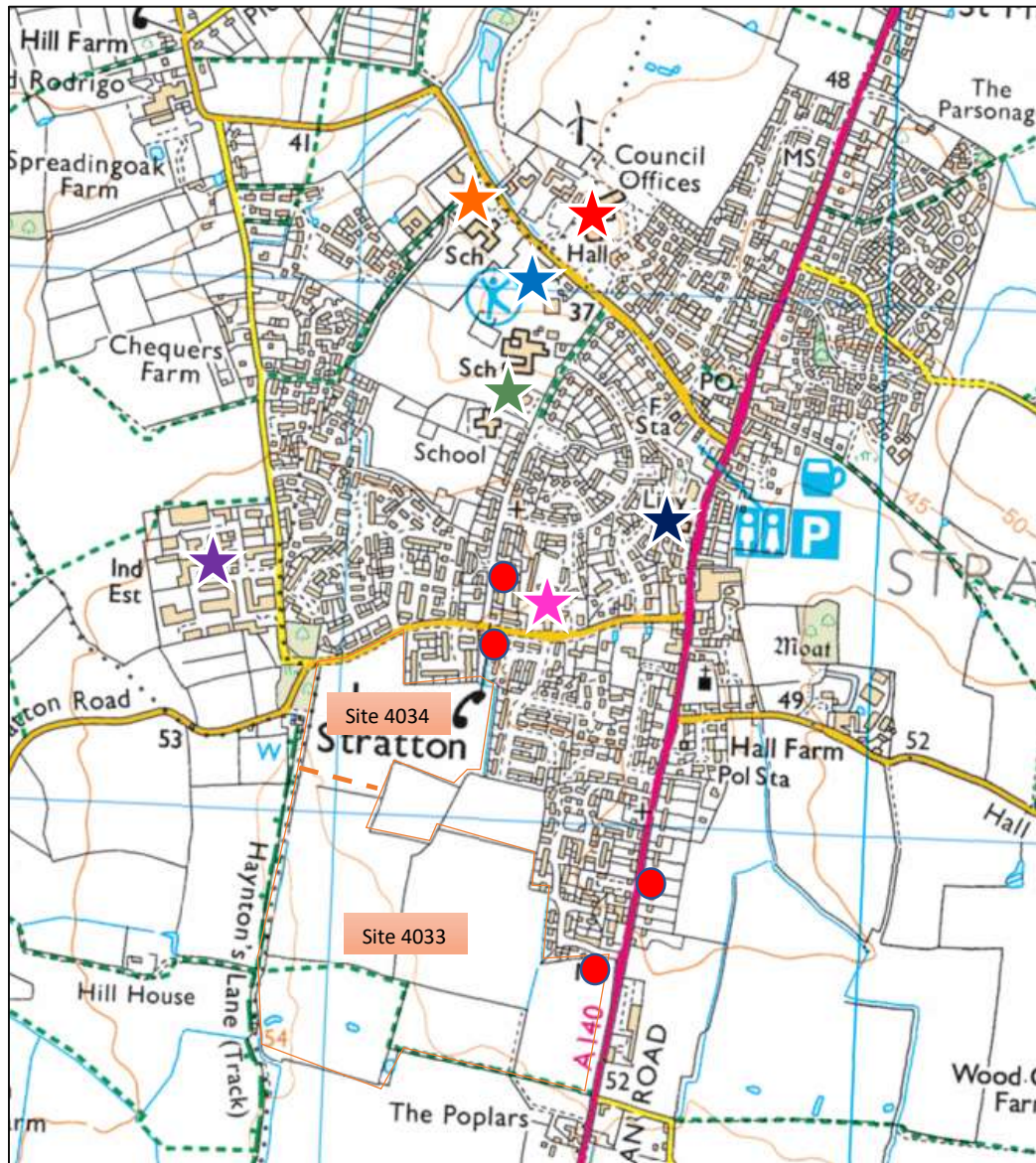
centre. Long Stratton has a strong employment base, with the main offices of South Norfolk Council and Saffron Housing Trust, along with a wide variety of businesses at Tharston Industrial Estate.

- 4.2 A local facilities plan is presented in Figure 3 and Table 1 below shows the distance and walk and cycle times to each facility. Distance is measured from the centre of Site 4034 and walk times are based on an average walking speed of 1.4 m/s and average cycle speed of 5m/s (12mph). Measured from the centre of Site 4033 the distance to each facility would increase by around 350m or a four-minute walk or a one-minute cycle.

Local Facility	Distance (m)	Walk Time	Cycle Time
Manor Field Infant School	700	8 mins	2 mins
Long Stratton High School	800	9.5 mins	3 mins
GP Surgery (Flowerpot Lane)	500	6 mins	1.5 mins
Bus Stop (Flowerpot Lane)	320	4 mins	1 min
Bus Stop (Manor Road)	360	4 mins	1 min
South Norfolk Council Offices	1150	13.5 mins	4 mins
Leisure Centre	1150	13.5 mins	4 mins
Tharston Industrial Estate	600	7 mins	2 mins
Co-op Foodstore	950	11 mins	3 mins
St Mary's Junior School	1250	14.5 mins	4 mins
Long Stratton Medical Partnership	1250	14.5 mins	mins

**Table 1: Distance & Walk / Cycle Times to Local Facilities**





**Key**

- |  |   |  |                            |  |                               |
|--|---|--|----------------------------|--|-------------------------------|
|  | Manor Field Infant School & Long Stratton High School |  | GP Surgery Flowerpot Lane  |  | South Norfolk Council Offices |
|  | Leisure Centre  |  | Tharston Industrial Estate |  | Co-op Foodstore               |
|  | St Mary's Junior School & LS Medical Partnership      |  | Closest Bus Stops to Site  |  |                               |

**Figure 3: Local Facilities Plan**

4.3 The Institution of Highways and Transportation (IHT) reports in its publication, 'Guidelines for Providing for Journeys on Foot' (2000) that,





*“Approximately 80% of walk journeys and walk stages in urban areas are less than one mile. The average length of a walk journey is one kilometre (km) (0.6 miles). This differs little by age or sex and has remained constant since 1975/76”.*

- 4.4 In the same document, suggested acceptable walk distances for pedestrians without mobility impairment are also identified for some common facilities. For commuting / school trips, 500m is identified as being a desirable walking distance, 1,000m as acceptable and 2,000m as the preferred maximum.
- 4.5 The infant school, the high school and the main industrial estate are all within 1,000m of the centre of Site 4034, which is identified as being within an acceptable walking distance for commuters and schools. The bus stops on Flowerpot Lane and Manor Road are within the desired walking distance, while all other facilities identified in Table 1 are within the preferred maximum distance of 2,000m. Even if these facilities are measured from the centre of the larger site to the south (Site 4033), they would still all be within the preferred maximum walking distance of 2,000m.
- 4.6 5km is typically considered to represent a reasonable cycle distance for commuters. Measured from the centre of both sites, all of Long Stratton falls well within this threshold and cycling would therefore be a realistic option for many people living at the proposed development sites. The terrain in Long Stratton is mainly flat making it ideal for cycling and the presence of 20mph zones in residential areas to the west of the A140, make on carriageway cycling suitable for all age groups.

## **5. Allocation LNGS1 and the Proposed Bypass**

- 5.1 Policy LNGS1 of the Long Stratton Area Action Plan (LSAAP) will deliver at least 1,800 new homes together with supporting employment and community facilities on land to the east of the A140. It will also deliver a new bypass, which is predicted to significantly reduce through traffic in the village centre including a high proportion of Heavy Goods Vehicles (HGV). The LSAAP states that the bypass will need to be complete prior to completion of the 250<sup>th</sup> unit.
- 5.2 It is understood that the outline business case for the bypass was submitted to DfT at the beginning of 2021 and the target date for work to start on construction is mid-2023, with the road open to traffic before the end of 2024.



- 5.3 The overall vision is that delivery of a bypass will enable a safer and more inviting village centre with increased shops and services. The removal of through traffic will result in substantial environmental benefits and allow the centre to be revitalised through an increase in walking and cycling in support of wider policies to promote sustainable forms of transport.
- 5.4 Upon completion of the bypass, the A140 between the northernmost and southernmost bypass junctions will no longer be part of the primary route network and it is acknowledged in the LSAAP that any additional accesses onto the existing A140 will either need to be between these two junctions or be designed to be part of the junctions themselves. The implication of this is that a new junction on the A140 to serve Site 4033 would not be contrary to policy.

## 6. Proposed Access Strategy

- 6.1 The principle of the preliminary access strategy is that it could serve site 4033 if it were to come forward for development. A flexible approach is required and to provide some future resilience it is likely that an allowance will need to be made for some form of vehicular connection between the two sites.
- 6.2 As a minimum this would need to provide a through route for buses, pedestrians, and cycles to promote the permeability of the site for sustainable modes, but there may also be merit in considering a route for all vehicles to relieve pressure at the A140 / Flowerpot Lane traffic signals where capacity constraints have been identified by the Highway Authority.
- 6.3 At this stage preliminary junction layouts have been prepared based on OS Mapping. To take the design to the next stage a topographical survey will be undertaken to confirm both the horizontal and vertical designs.

### Flowerpot Lane Priority Junction

- 6.4 A simple priority junction is proposed on Flowerpot Lane as shown in Drawing CTP-21-0194 SK01 Rev A presented in **Appendix A**. This form of junction is consistent with existing junctions on Flowerpot Lane and is considered to have the capacity to cater for the development traffic if site 4034 comes forward in isolation or as part of the larger site to the south.



- 6.5 2m footways are proposed on both sides of the access road and these extend onto Flowerpot Lane to provide connections to existing footways. To the east of the access the footway extends along the site frontage to the point where it crosses Flowerpot Lane to connect with the existing footway on the northern side. To the west a link on the northern verge is proposed to connect to the existing footway.

#### A140 – Traffic Signal Junction

- 6.6 The traffic signal option is shown on Drawing CTP-21-0194-SK02 Rev A and presented in **Appendix B**. Access to the existing scaffolding business is maintained by a fourth arm on the east side of the A140. It is noted that the site of the scaffolding business forms part of Policy LNGS1 of the LSAAP and therefore may not need to be retained in the future. However, including it at this stage ensures that if this access is retained, it would not prevent access to the site being delivered.
- 6.7 The island on the southern arm has been designed to accommodate a potential pedestrian / cycle crossing to access the allocated land to the east of the A140 if required in the future. A controlled pedestrian / cycle crossing is proposed across the development arm where 3.5m shared facilities are proposed on both sides of the access road.

#### A140 – Roundabout Junction

- 6.8 The roundabout option is shown on Drawing CTP-21-0194-SK03 Rev A and presented in **Appendix C** and as with the signals, access to the existing scaffolding business is maintained by a fourth arm on the east side of the A140.
- 6.9 As with the signals a 3.5m shared cycleway / footway is proposed on both sides of the development access road.
- 6.10 The junction type will be determined at the planning application stage and will be guided by discussions with the Highway Authority and based on detailed junction modelling that would be presented in a supporting Transport Assessment. Nonetheless, the two options presented are considered to demonstrate that at this stage, access to the site from the A140 can be provided.

## **7. Preliminary Trip Generation Calculation**

- 7.1 The latest version of the TRICS database (version 7.7.4) has been used to estimate the trip generation to the potential development sites. TRICS provides trip rate
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information for a range of land uses throughout the United Kingdom and in this instance sites in the *houses privately owned* category of the *residential* land use have been used.

- 7.2 Site selection has been refined to include developments in the range 100 to 800 units. Sites in Greater London, Ireland, Scotland, and Wales have been excluded and only sites with an edge of town or neighbourhood centre locations have been included.
- 7.3 TRICS identified 27 sites matching the criteria of which 23 had an edge of town location and four a neighbourhood centre location.
- 7.4 The peak hour trip rates are shown in the table below. Trip rates are expressed as trips per dwelling. The TRICS data is attached to this note as **Appendix D**.

AM Peak (08:00-09:00)		PM Peak (17:00-18:00)	
Arrivals	Departs	Arrivals	Departs
0.138	0.387	0.338	0.152

**Table 2: Proposed Residential Vehicle Trip Rates from TRICS**

- 7.5 The trip rates presented above have been applied to the number of residential units proposed and the resultant trip generation is set out in the table below.

Proposed Development	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)	
	Arrivals	Departs	Arrivals	Departs
Site 4034: 150 Units	21	58	51	23
Site 4033: 550 Units	76	213	186	84
<b>Total</b>	<b>97</b>	<b>271</b>	<b>237</b>	<b>107</b>

**Table 3: Potential Residential Vehicle Trip Generation**



## 8. Qualitative Assessment of Traffic Impact

### Site 4034

- 8.1 If Site 4034 were to come forward in isolation the preliminary trip generation calculation indicates that it would generate 79 and 74 two-way trips in the AM and PM peak hours respectively. Subject to junction modelling, it is considered that the proposed site access on Flowerpot Lane as well as the existing highway network could accommodate an increase in traffic of this magnitude as it would correspond to just over one additional vehicle a minute in the peak hours.
- 8.2 This site is well located to encourage walking and cycling to many of the main facilities located within the village including the infant and high schools on Manor Road, Tharston Industrial Estate on Chequers Road, and the employment, leisure, and health care facilities on Swan Lane. The village centre, where there is a range of retail and commercial facilities including a foodstore, is also accessible on foot and by bicycle.
- 8.3 A residential travel plan would be prepared as a supporting document to the planning application. This would incentivise the use of sustainable travel modes and seek to promote walking and cycling to replace short car journeys. Measures set out in the travel plan together with a likely increase in the amount of home working, should help to reduce the overall impact of car travel particularly during the peak hours.
- 8.4 As such, it is considered that there are no transport reasons why site 4034 could not come forward for development of 150 residential units, and that the site is immediately deliverable, subject to planning permission being granted.

### Site 4033

- 8.5 Table 3 indicates that if the whole site was brought forward it would generate 368 and 344 new vehicle trips upon completion of the development in the AM and PM peak hours respectively.
- 8.6 On the assumption that the bypass is open to traffic prior to full occupation of Site 4033 – target date for bypass opening to traffic is late 2024 - most development trips would be expected to use the new junction on the A140 to then travel south towards Diss, the A14, and Ipswich or to access the southernmost junction of the bypass to then travel north towards Norwich.



- 8.7 Trips with a destination in Long Stratton would travel north on the A140 and pass through the Flowerpot Lane traffic signals, a junction that has been identified by the Highway Authority as having capacity constraints. However, once the bypass is open to traffic and the level of through traffic is significantly reduced, the A140 / Flowerpot Lane junction would mainly be catering for local traffic and could be expected to operate far more efficiently than it does currently.
- 8.8 For the development of site 4033 it will be essential to provide connections between the A140 and Flowerpot Lane for buses, pedestrians, and cyclists. This would provide an opportunity to deliver a direct bus route through the site, ensuring that all new dwellings are within 400m of a bus stop. The bus route could either be an extension of an existing service or part of a new route serving the allocation to the east of the A140.
- 8.9 A detailed public transport strategy for the site would be developed through discussions with the public transport team at Norfolk County Council and the bus operators.
- 8.10 A connection between the A140 and Flowerpot Lane will also enhance the permeability for pedestrians and cyclists by enabling high quality and direct connections that are essential design features if people are to be encouraged to replace short car journeys with active travel modes.
- 8.11 There may also be merit in providing a route through the site for all vehicles as this would allow people with a destination to the west of the village to avoid the A140 / Flowerpot Lane traffic signals. This would include the Tharston Industrial Estate, the schools on Manor Road and the South Norfolk Council offices on Swan Lane. This would ease pressure at the existing traffic signals and potentially allow some development to come forward on Site 4033 in advance of completion of the bypass which is expected before the end of 2024.
- 8.12 A Transport Assessment would be prepared to present the impact of Sites 4033 and 4034 and the scope of the junction modelling and any triggers for highway improvements would be agreed throughout the planning application process with the Highway Authority.





## 9. Summary and Conclusions

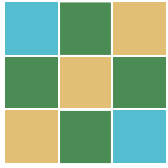
- 9.1 This Technical Note presents a high-level review of potential residential sites in Long Stratton, Norfolk. The sites are identified in the Greater Norwich Local Plan as potential sites for development. The whole site is identified as site 4033 and could accommodate up to 700 dwellings. The northern part of site which forms part of site 4033 but also has its own reference, site 4034, could accommodate 150 dwellings. The whole site has frontage onto Flowerpot Lane over approximately 150m and onto the A140 over approximately 250m.
- 9.2 Long Stratton has a good range of services and facilities that are mainly located along the A140 where it passes through the village centre. On the western side of the village there are primary and secondary schools, a GP surgery, a library, and a leisure centre. Long Stratton has a strong employment base, with the main offices of South Norfolk Council and Saffron Housing Trust, along with a wide variety of businesses at Tharston Industrial Estate.
- 9.3 Based on IHT guidance, it has been demonstrated that most facilities are with an acceptable walk distance of the smaller site and all facilities are within the preferred maximum walk distance of both sites.
- 9.4 Long Stratton is a relatively compact settlement and therefore cycling is a realistic option for many people. All the local facilities are well within the 5km distance threshold for cycling and could be reached in a maximum of five-minutes. Cycling is further encouraged by a flat terrain and the presence of 20mph zones in residential areas to the west of the A140, making on carriageway cycling suitable for all age groups.
- 9.5 These sites are being promoted in the context of Policy LN1 of the Long Stratton Area Action Plan (LSAAP) which will deliver at least 1,800 new homes together with supporting employment and community facilities on land to the east of the A140. It will also deliver a new bypass, which is predicted to significantly reduce through traffic in the village centre including a high proportion of Heavy Goods Vehicles.
- 9.6 The outline business case for the bypass was submitted to DfT at the beginning of 2021 and the target date for work to start on construction is mid-2023, with the road open to traffic before the end of 2024.



- 9.7 This review indicates that both sites could be adequately served through the provision of new junctions on Flowerpot Lane and the A140 subject to a detailed junction modelling.
- 9.8 A simple priority junction is proposed on Flowerpot Lane which is consistent with existing junction forms on Flowerpot Lane and is considered to have the capacity to cater for the development traffic if site 4034 comes forward in isolation or as part of the larger site to the south.
- 9.9 If Site 4034 were to come forward the preliminary trip generation calculation indicates that it would generate 79 and 74 two-way trips in the AM and PM peak hours respectively. Subject to junction modelling, it is considered that the proposed site access on Flowerpot Lane as well as the existing highway network could accommodate an increase in traffic of this magnitude without significant detriment as it would correspond to just over one additional vehicle a minute in the peak hours.
- 9.10 This site is well located to encourage walking and cycling to many of the main facilities located within the village including the infant and high schools on Manor Road, Tharston Industrial Estate on Chequers Road, and the employment, leisure, and health care facilities on Swan Lane. The village centre, where there is a range of retail and commercial facilities including a foodstore, is also accessible on foot and by bicycle.
- 9.11 It is therefore concluded that there are no transport or highways reasons why site 4034 cannot be allocated for development and be brought forward immediately.
- 9.12 Two options have been prepared to serve the larger site from the A140 in the form of a roundabout or a traffic signal junction. Ultimately the junction type will be determined at the planning application stage and will be guided by discussions with the Highway Authority and based on detailed junction modelling that would be presented in a supporting Transport Assessment. However, the two options presented are both considered suitable arrangements to provide access to the site.
- 9.13 Connections will be provided between the A140 and Flowerpot Lane for buses, cyclists, and pedestrians to promote the use of sustainable travel modes and enhance the permeability of the site.



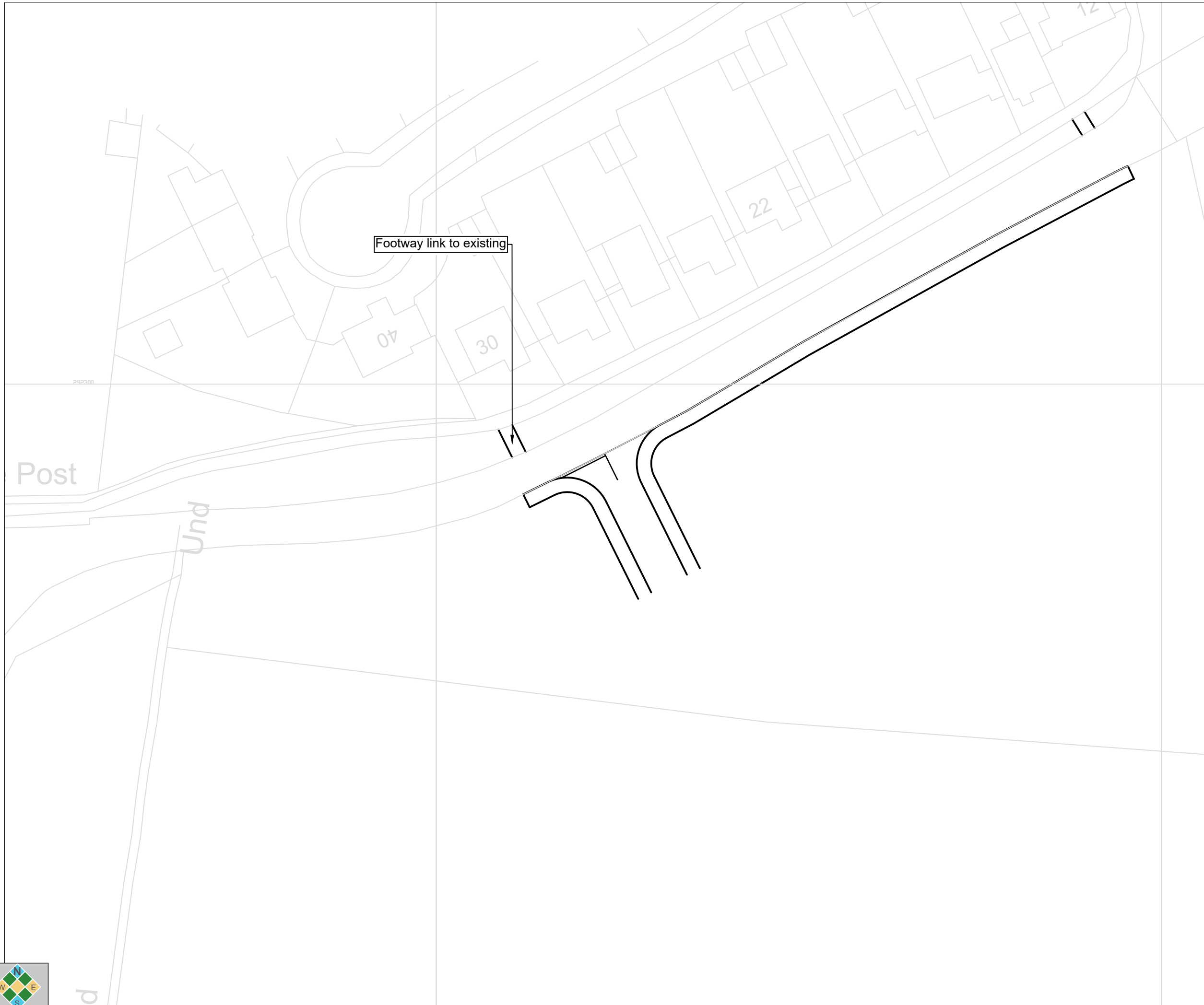
- 9.14 There may also be merit in providing an all-vehicle connection as this would take some pressure off the A140 / Flowerpot Lane traffic signals, where the Highway Authority has identified capacity issues. This would ease pressure at the existing traffic signals and potentially allow some development to come forward in advance of completion of the bypass which is expected before the end of 2024.
- 9.15 It is therefore concluded that there are no transport or highways reasons by site 4033 cannot be allocated for development. Subject to more detailed discussions, there is potential for some development of site 4033 to come forward immediately, alongside the section of the site identified as 4034 through inclusion of this new vehicle link between the A140 and Flowerpot Lane.
- 9.16 This high-level review indicates that both potential development sites represent sustainable locations for development and a suitable access strategy could be provided to serve both sites to the west of the A140. The final junction forms and highway layout would be subject to pre-application discussions with the Highway Authority and a detailed modelling exercise that would be presented in a Transport Assessment.



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## Appendix A

Flowerpot Lane Priority Junction:  
Drawing No. CTP-21-0194 SK01  
Rev A



**Notes:**

1. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.
2. Drawing to be read in conjunction with all other drawings. Any discrepancies are to be reported to the engineer 5 working days in advance of undertaking any work.

A	12/03	Dimensions removed	MP	JA
Rev	Date	Details	Drawn by	Checked by



**COTSWOLD  
TRANSPORT  
PLANNING**

CLIENT:  
**Rosconn Group**

PROJECT:  
**Long Stratton  
Norwich**

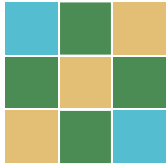
TITLE:  
**Proposed Access Junction  
Flowerpot Lane**

STATUS:  
**INFORMATION**

SCALE @ A3: 1:500	DATE: 10.03.21	DRAWN: MP	CHECKED: JA	APPROVED: CE
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JOB NO: <b>CTP-21-0194</b>	DRAWING NO: <b>SK01</b>	REVISION: -
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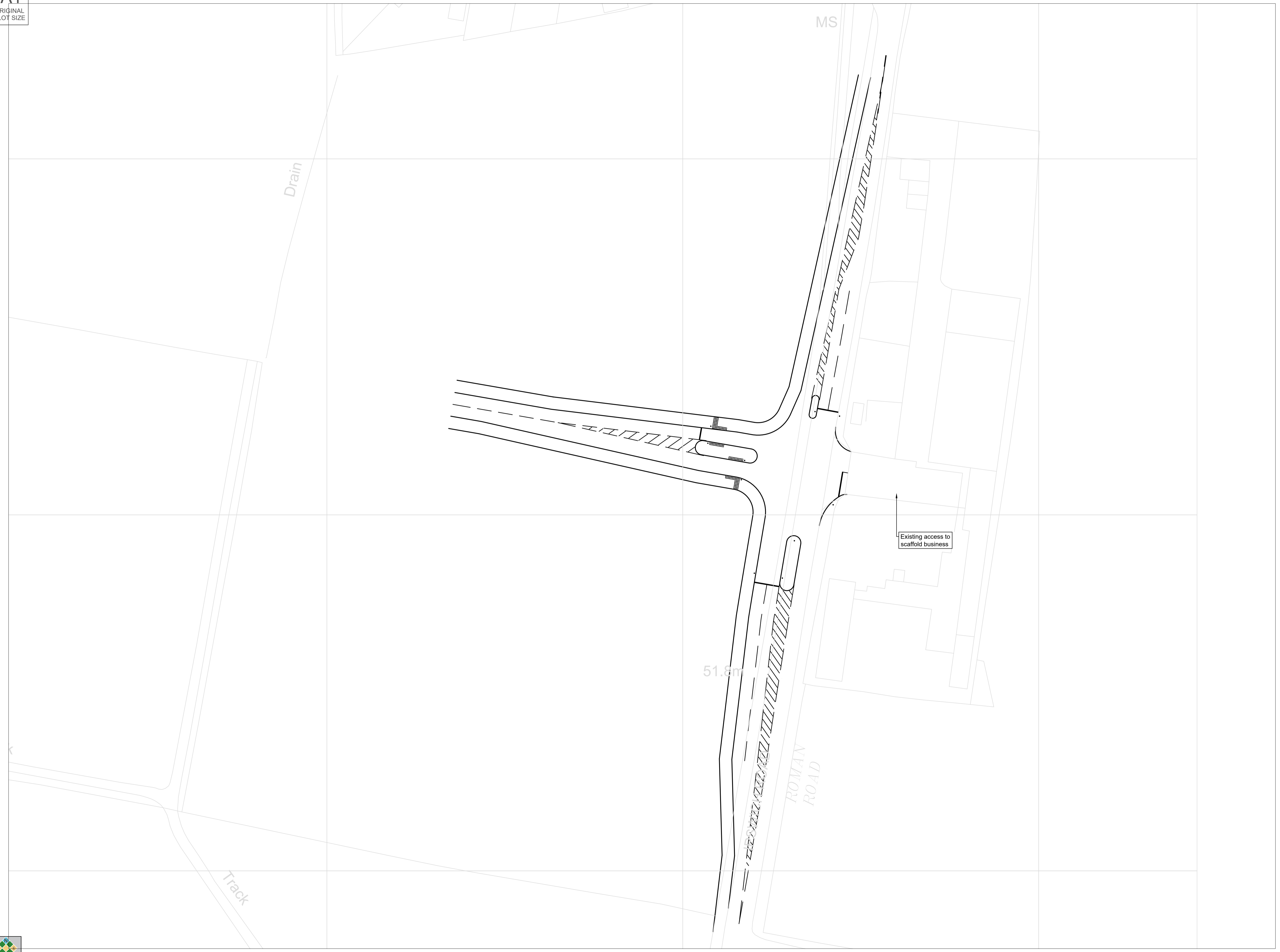
COTSWOLD  
TRANSPORT  
PLANNING

## Appendix B

AI40 Traffic Signals: Drawing No.  
CTP-21-0194 SK02 Rev A



A1  
ORIGINAL  
PLOT SIZE



Rev	Date	Details	Drawn By	Checked By
A	12/03/20	Dimensions removed	MP	JA



CLIENT:  
**ROSCONN GROUP**

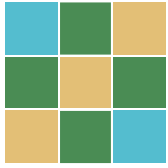
PROJECT:  
**LONG STRATTON  
NORWICH**

TITLE:  
**POTENTIAL SIGNALISED  
ACCESS JUNCTION FROM  
A140 IPSWICH ROAD**

STATUS:  
**PRELIMINARY**

SCALE:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:500	10/03/20	MP	JA	CE
JOB NO:	DRAWING NO:	REVISION:		
CTP-21-0194	SK02	A		





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TRANSPORT  
PLANNING

## Appendix C

AI40 Roundabout: Drawing No.  
CTP-21-0194 SK03 Rev A

A1  
ORIGINAL  
PLOT SIZE



A	12/03/20	Geometry amended to allow 100m forward visibility	MP	JA
Rev	Date	Details	Drawn By	Checked By



CLIENT:  
**ROSCONN GROUP**

PROJECT:  
**LONG STRATTON  
NORWICH**

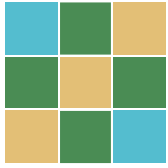
TITLE:  
**POTENTIAL ROUNDABOUT  
ACCESS JUNCTION FROM  
A140 IPSWICH ROAD**

STATUS:  
**PRELIMINARY**

SCALE: 1:500	DATE: 10/03/20	DRAWN: MP	CHECKED: JA	APPROVED: CE
JOB NO: CTP-21-0194	DRAWING NO: SK03	REVISION: A		



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## Appendix D

TRICS Data

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

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

**TOTAL VEHICLES**Selected regions and areas:

<b>02 SOUTH EAST</b>		
ES	EAST SUSSEX	2 days
HF	HERTFORDSHIRE	1 days
KC	KENT	3 days
SC	SURREY	2 days
WS	WEST SUSSEX	4 days
<b>04 EAST ANGLIA</b>		
CA	CAMBRIDGESHIRE	1 days
NF	NORFOLK	3 days
<b>05 EAST MIDLANDS</b>		
DS	DERBYSHIRE	1 days
<b>06 WEST MIDLANDS</b>		
ST	STAFFORDSHIRE	1 days
<b>07 YORKSHIRE &amp; NORTH LINCOLNSHIRE</b>		
NE	NORTH EAST LINCOLNSHIRE	1 days
<b>09 NORTH</b>		
DH	DURHAM	1 days

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

**Primary Filtering 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: No of Dwellings  
 Actual Range: 110 to 799 (units: )  
 Range Selected by User: 100 to 800 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 08/10/20

*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	6 days
Tuesday	3 days
Wednesday	2 days
Thursday	5 days
Friday	4 days

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

Selected survey types:

Manual count	18 days
Directional ATC Count	2 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:

Edge of Town	16
Neighbourhood Centre (PPS6 Local Centre)	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	15
Village	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.*

### Secondary Filtering selection:

#### Use Class:

C3 20 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 500m Range:

All Surveys Included

#### Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	5 days
5,001 to 10,000	6 days
10,001 to 15,000	6 days
15,001 to 20,000	1 days
20,001 to 25,000	1 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	3 days
25,001 to 50,000	4 days
50,001 to 75,000	3 days
75,001 to 100,000	4 days
125,001 to 250,000	6 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	5 days
1.1 to 1.5	12 days
1.6 to 2.0	3 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	10 days
No	10 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.*

#### PTAL Rating:

No PTAL Present	20 days
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*This data displays the number of selected surveys with PTAL Ratings.*

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

<b>1</b>	<b>CA-03-A-06</b>	<b>MIXED HOUSES</b>	<b>CAMBRIDGESHIRE</b>
	CRAFT'S WAY		
	NEAR CAMBRIDGE		
	BAR HILL		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total No of Dwellings:	207	
	Survey date: FRIDAY	22/06/18	Survey Type: MANUAL
<b>2</b>	<b>DH-03-A-02</b>	<b>MIXED HOUSES</b>	<b>DURHAM</b>
	LEAZES LANE		
	BISHOP AUCKLAND		
	ST HELEN AUCKLAND		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total No of Dwellings:	125	
	Survey date: MONDAY	27/03/17	Survey Type: MANUAL
<b>3</b>	<b>DS-03-A-02</b>	<b>MIXED HOUSES</b>	<b>DERBYSHIRE</b>
	RADBOURNE LANE		
	DERBY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	371	
	Survey date: TUESDAY	10/07/18	Survey Type: MANUAL
<b>4</b>	<b>ES-03-A-03</b>	<b>MIXED HOUSES &amp; FLATS</b>	<b>EAST SUSSEX</b>
	SHEPHAM LANE		
	POLEGATE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	212	
	Survey date: MONDAY	11/07/16	Survey Type: MANUAL
<b>5</b>	<b>ES-03-A-04</b>	<b>MIXED HOUSES &amp; FLATS</b>	<b>EAST SUSSEX</b>
	NEW LYDD ROAD		
	CAMBER		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	134	
	Survey date: FRIDAY	15/07/16	Survey Type: MANUAL
<b>6</b>	<b>HF-03-A-03</b>	<b>MIXED HOUSES</b>	<b>HERTFORDSHIRE</b>
	HARE STREET ROAD		
	BUNTINGFORD		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	160	
	Survey date: MONDAY	08/07/19	Survey Type: MANUAL
<b>7</b>	<b>KC-03-A-04</b>	<b>SEMI-DETACHED &amp; TERRACED</b>	<b>KENT</b>
	KILN BARN ROAD		
	AYLESFORD		
	DITTON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	110	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
<b>8</b>	<b>KC-03-A-07</b>	<b>MIXED HOUSES</b>	<b>KENT</b>
	RECVLVER ROAD		
	HERNE BAY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

<b>9</b>	<b>KC-03-A-08</b>	<b>MIXED HOUSES</b>	<b>KENT</b>
	MAIDSTONE ROAD CHARING		
	Neighbourhood Centre (PPS6 Local Centre) Village		
	Total No of Dwellings:	159	
	Survey date: <i>TUESDAY</i>	22/05/18	<i>Survey Type: MANUAL</i>
<b>10</b>	<b>NE-03-A-02</b>	<b>SEMI DETACHED &amp; DETACHED</b>	<b>NORTH EAST LINCOLNSHIRE</b>
	HANOVER WALK SCUNTHORPE		
	Edge of Town No Sub Category		
	Total No of Dwellings:	432	
	Survey date: <i>MONDAY</i>	12/05/14	<i>Survey Type: MANUAL</i>
<b>11</b>	<b>NF-03-A-06</b>	<b>MIXED HOUSES</b>	<b>NORFOLK</b>
	BEAUFORT WAY GREAT YARMOUTH BRADWELL		
	Edge of Town Residential Zone		
	Total No of Dwellings:	275	
	Survey date: <i>MONDAY</i>	23/09/19	<i>Survey Type: MANUAL</i>
<b>12</b>	<b>NF-03-A-07</b>	<b>MIXED HOUSES &amp; FLATS</b>	<b>NORFOLK</b>
	SILFIELD ROAD WYMONDHAM		
	Edge of Town Out of Town		
	Total No of Dwellings:	297	
	Survey date: <i>FRIDAY</i>	20/09/19	<i>Survey Type: DIRECTIONAL ATC COUNT</i>
<b>13</b>	<b>NF-03-A-16</b>	<b>MIXED HOUSES &amp; FLATS</b>	<b>NORFOLK</b>
	NORWICH COMMON WYMONDHAM		
	Edge of Town Residential Zone		
	Total No of Dwellings:	138	
	Survey date: <i>TUESDAY</i>	20/10/15	<i>Survey Type: DIRECTIONAL ATC COUNT</i>
<b>14</b>	<b>SC-03-A-05</b>	<b>MIXED HOUSES</b>	<b>SURREY</b>
	REIGATE ROAD HORLEY		
	Edge of Town Residential Zone		
	Total No of Dwellings:	207	
	Survey date: <i>MONDAY</i>	01/04/19	<i>Survey Type: MANUAL</i>
<b>15</b>	<b>SC-03-A-06</b>	<b>MIXED HOUSES &amp; FLATS</b>	<b>SURREY</b>
	AMLETS LANE CRANLEIGH		
	Neighbourhood Centre (PPS6 Local Centre) Village		
	Total No of Dwellings:	116	
	Survey date: <i>THURSDAY</i>	08/10/20	<i>Survey Type: MANUAL</i>
<b>16</b>	<b>ST-03-A-07</b>	<b>DETACHED &amp; SEMI-DETACHED</b>	<b>STAFFORDSHIRE</b>
	BEACONSIDE STAFFORD MARSTON GATE		
	Edge of Town Residential Zone		
	Total No of Dwellings:	248	
	Survey date: <i>WEDNESDAY</i>	22/11/17	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

<b>17</b>	<b>WS-03-A-04</b>	<b>MIXED HOUSES</b>	<b>WEST SUSSEX</b>
	HILLS FARM LANE		
	HORSHAM		
	BROADBRIDGE HEATH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	151	
	Survey date: THURSDAY	11/12/14	Survey Type: MANUAL
<b>18</b>	<b>WS-03-A-06</b>	<b>MIXED HOUSES</b>	<b>WEST SUSSEX</b>
	ELLIS ROAD		
	WEST HORSHAM		
	S BROADBRIDGE HEATH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	799	
	Survey date: THURSDAY	02/03/17	Survey Type: MANUAL
<b>19</b>	<b>WS-03-A-08</b>	<b>MIXED HOUSES</b>	<b>WEST SUSSEX</b>
	ROUNDSTONE LANE		
	ANGMERING		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	180	
	Survey date: THURSDAY	19/04/18	Survey Type: MANUAL
<b>20</b>	<b>WS-03-A-09</b>	<b>MIXED HOUSES &amp; FLATS</b>	<b>WEST SUSSEX</b>
	LITTLEHAMPTON ROAD		
	WORTHING		
	WEST DURRINGTON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	197	
	Survey date: THURSDAY	05/07/18	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.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

**TOTAL VEHICLES**

**Calculation factor: 1 DWELLS**

**BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	20	240	0.086	20	240	0.318	20	240	0.404
08:00 - 09:00	20	240	0.138	<b>20</b>	<b>240</b>	<b>0.387</b>	<b>20</b>	<b>240</b>	<b>0.525</b>
09:00 - 10:00	20	240	0.147	20	240	0.177	20	240	0.324
10:00 - 11:00	20	240	0.123	20	240	0.151	20	240	0.274
11:00 - 12:00	20	240	0.130	20	240	0.145	20	240	0.275
12:00 - 13:00	20	240	0.148	20	240	0.148	20	240	0.296
13:00 - 14:00	20	240	0.153	20	240	0.150	20	240	0.303
14:00 - 15:00	20	240	0.161	20	240	0.190	20	240	0.351
15:00 - 16:00	20	240	0.269	20	240	0.173	20	240	0.442
16:00 - 17:00	20	240	0.278	20	240	0.165	20	240	0.443
17:00 - 18:00	<b>20</b>	<b>240</b>	<b>0.338</b>	20	240	0.152	20	240	0.490
18:00 - 19:00	20	240	0.311	20	240	0.171	20	240	0.482
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			2.282			2.327			4.609

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

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

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**Parameter summary**

Trip rate parameter range selected: 110 - 799 (units: )  
 Survey date range: 01/01/12 - 08/10/20  
 Number of weekdays (Monday-Friday): 24  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys automatically removed from selection: 3  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.