

APPENDIX A. Transport Assessment Scoping Note and Trip Rate Review



Technical Note

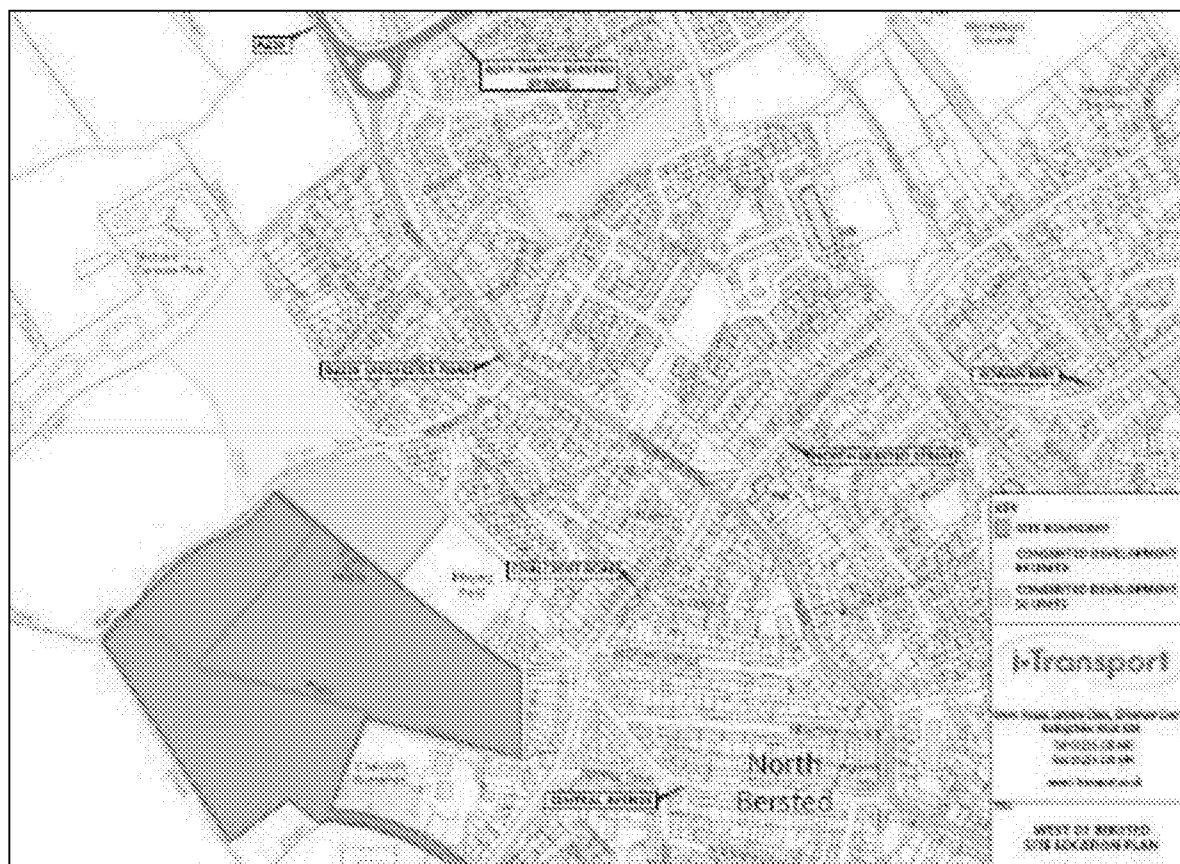
Project No: ITB14224
Project Title: Nursery Fields, Land at Chalcraft Lane, Bersted
Title: Trip Rate Review Note
Ref: DS/IN/ITB14224-008
Date: 13 August 2020

SECTION 1 Introduction

1.1 Introduction

- 1.1.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed development at Nursery Fields, on land to the West of Bersted and to the north of Chalcraft Lane.
- 1.1.2 The site forms a part of the wider 'West of Bersted' Strategic Allocation, which is identified in the Adoption Arun Local Plan 2011 – 2031 (2018) under policy H SP2a (SD3). The whole West of Bersted allocation has been identified as being able to deliver at least 2,500 dwellings over the plan period.
- 1.1.3 This SD3 West of Bersted allocation is also required to meet a number of infrastructure and design requirements, including: a new three-form primary school and nursery places; a new 3G pitch facility; two new sports pitches and facilities; a community hub (including shops, health care facilities and library); new road, pedestrian and cycle linkages; and new employment provision.
- 1.1.4 The location of the proposed development parcel is shown in **Image 1.1**

Image 1.1: Extract of Site Location Plan



Source: Consultants' image

1.2 Background

- 1.2.1 A Transport Assessment Scoping Note (TASN) has been prepared and submitted to West Sussex County Council, as the local highway authority, to enable discussion and agreement of the proposed approach and key parameters for the Transport Assessment (TA). WSCC has provided initial feedback under pre-application reference PRE-52-20.
- 1.2.2 The scoping note proposed the use of trip rates derived as part of the Arun Transport Study and which formed the evidence base for development allocated through the development (including the West of Bersted SD3 allocation). In examining the Arun Local Plan, the Inspector stated that 'realistic trip rates' (ref: para 199, Report to Arun District Council, 4 July 2018) have been applied and that '... the Council has applied robust and consistent parameters relating to base flows, trip generation and assessing severe impacts' (ref: para 126, Report to Arun District Council, 4 July 2018). The Inspector concludes that the approach is sound.

- 1.2.3 However, through the pre-application response to the TASN, WSCC has requested that further consideration be given to the use of these trip rates to ensure that they are appropriate for the development site.
- 1.2.4 In their response, WSCC also indicated that an initial review of the TRICS database for solely privately owned houses derived a higher trip rate than proposed for use in the TA. It should be noted that the use of solely privately owned houses would not be appropriate in this instance; Policy SD3 requires on-site provision of affordable housing and apartments will also be provided on-site.

SECTION 2 Proposed Residential Trip Rates

- 2.1 Transport Assessment Scoping Note (TASN) proposed the use of the residential trip rates set out in the Arun Transport Study Stage 3 Report.
- 2.2 The Transport Study identifies trip rates obtained from the TRICS database to calculate origin and destination trip rates for residential developments for the AM Peak (0800-0900) and PM Peak (1700-1800) modelled hours. Separate trips rates are derived for houses and apartments and then combined to derive a trip rate reflective of housing mix. A summary of the residential trip rates used in the modelling report are set out in **Table 2.1** below:

Table 2.1: Vehicle Trip Rates from Arun Transport Study Stage 3 Report

Time	Trip Rate (per dwelling)		
	Arrivals	Departures	Two-Way
Residential – Weekday Morning Peak	0.091	0.259	0.350
Residential – Weekday Evening Peak	0.243	0.100	0.343

Source: Arun Transport Study

- 2.3 On this basis, the anticipated number of trips expected to be generated by the proposed development (210 dwellings) is set out in **Table 2.2**.

Table 2.2: Forecast Trip Generation (210 dwellings)

Time	Trip Generation (210 dwellings)		
	Arrivals	Departures	Two-Way
Residential – Weekday Morning Peak	19	54	73
Residential – Weekday Evening Peak	51	21	72

Source: Consultants' calculations

- 2.4 **Table 2.2** demonstrates that the proposed development is anticipated to generate 72-73 two-way vehicle movements during the morning and evening peak periods. This equates to on average circa just over one vehicle movement every minute during the busiest periods of the day.
- 2.5 Section 3 of this report reviews the suitability of these trip rates to inform the TA.

SECTION 3 Trip Rate Review

3.1.1 A review of the TRICS database has been undertaken to ascertain whether the proposed trip rates are suitable for use in the TA. Multi-modal residential trip rates have been selected as the 'Main Land Use' and 'Mixed Private / Affordable Housing' has been selected as the 'Sub Land Use'. This best represents the mixture of dwelling and tenure type which are likely to be provided on site, with Policy AH SP2 of the Arun Local Plan (ALP) requiring a minimum of 30% on-site affordable provision.

3.1.2 The TRICS database has been filtered to ensure that only sites similar in nature to that of the proposed development have been used. The following filters have been applied:

- Location: South East;
- Location: Edge of Town and Suburban only;
- Size: 150 – 500 units;
- Days: Monday – Friday.

3.1.3 The search has identified a total of 12 surveyed sites; the trip rates derived from the surveys are summarised in **Table 3.1**. A full copy of the TRICS data, including all selection parameters, is provided within **Appendix A**.

Table 3.1: Morning and Evening Peak Hour Trip Rates (vehicles per dwelling)

Time Period	Arrivals	Departures	Two Way
08:00 – 09:00	0.132	0.353	0.485
17:00 – 18:00	0.300	0.144	0.444

Source: TRICS 7.7.2

3.1.4 These rates represent a typical Mixed Private / Non-Private development containing a mixture of houses and flats. However, they do not fully take account of the characteristics of the proposed development at North Bersted, in so far as the allocation includes a number of local facilities at the centre of the site. The facilities include a new three-form primary school and nursery places; a local centre (including shops, health care facilities and library); a new 3G pitch facility; two new sports pitches and facilities; new road, pedestrian and cycle linkages; and new employment provision.

3.1.5 In addition, the site is located in an accessible location that provides a range of modal choices for residents. In effect, the site is a sustainable urban extension of an already established suburban area. There are a good range of existing everyday local facilities and services within a reasonable walking and cycling distance of the site, which include: convenience stores, sports and community facilities and

primary and secondary educational facilities. The Stagecoach 700 'Coastliner' bus service is also readily accessible from the site and provides a 20-minute frequency to Chichester, Portsmouth, Bognor Regis and Littlehampton for access to a wider range of facilities and services.

3.2 Site Specific Residential Trip Generation

3.2.1 A detailed assessment has been undertaken on each of the TRICS sites used to determine the trip rates presented in **Table 3.1**, to ascertain whether the site is representative of the proposed development. Consideration has been given to the scale, housing mix, tenure, the location of the sites and their accessibility to local facilities and public transport.

3.2.2 **Tables 3.2 to 3.13** provides a summary of the site characteristics and presents the trip rates derived from the site-specific surveys contained within the TRICS database. The individual TRICS outputs of each site are provided at **Appendix B**.

Table 3.2: Site Characteristics and Site-Specific Trip Rates – South Coast Road, Peacehaven

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
South Coast Road, Peacehaven	The site is located at the south-eastern edge of Peacehaven, close to the coast. The development includes a mixture of private and affordable houses and flats.	Located off the A259 South Coast Road, which heads east and west between Peacehaven and Newhaven.	Primary School – 1.5km Secondary School – 1.7km Local Shop – 0.4km Supermarket – 3.0km Doctors – 1.3km	Circa 3.0km from Newhaven station which provides rail services to Brighton and Seaford. Less than 2 services per hour to local destinations.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.197	0.346	0.543
Evening	17:00 – 18:00	0.410	0.212	0.622

Source: TRICS Database (v7.7.2)

Table 3.3: Site Characteristics and Site-Specific Trip Rates – Hampstead Lane, Hailsham

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Hampstead Lane, Hailsham	The site is located to the East of Hailsham Bypass. The development includes a mixture of private and affordable houses and flats.	Located just to the east of Hailsham Bypass and to the north of Hempsted Lane which provides a route from the bypass to the town centre.	Primary School – 1.2km Secondary School – 2.0km Local Shop – 1.3km Supermarket – 2.5km Doctors – 2.2km	Circa 7.0km from Polgate station which provides rail services to Lewes and Eastbourne. Circa 500m to stops providing access to Eastbourne and Heathfield.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.113	0.364	0.477
Evening	17:00 – 18:00	0.531	0.150	0.681

Source: TRICS Database (v7.7.2)

Table 3.4: Site Characteristics and Site-Specific Trip Rates – Hunts Pond Road, Fareham

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Hunts Pond Road, Fareham	The site is located in a residential area to the west of Fareham. The development includes a mixture of private and affordable houses and flats.	Located to the west of the A27 which provides access to local destinations. The M27 lies to the north of the site and can be accessed within a 3.5km drive of the site.	Primary School - 0.9 km Secondary School - 5.1 km Local Shop/ Corner Shop - 1.1 km Supermarket - 1.6 km Doctors Surgery - 1.7 km	Circa 2.5km from Swanwick Station which provides rail services to Southampton and Portsmouth. Hourly bus services to Fareham and Southampton available within 450m of site frontage.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.149	0.445	0.594
Evening	17:00 – 18:00	0.290	0.113	0.403

Source: TRICS Database (v7.7.2)

Table 3.5: Site Characteristics and Site-Specific Trip Rates – Romsey Road, Winchester

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Romsey Road, Winchester	The site is located on the south western edge of Winchester. The development includes a mixture of private and affordable houses and flats.	Located to the north of Romsey Road which provides a key route between Chandlers Ford and Winchester City Centre. The M3 lies to the south east of the site and can be accessed within a 3.5km drive.	Primary School – 0.3 km Secondary School – 1.1 km Local Shop/ Corner Shop - 1 km Supermarket -1.5 km Doctors Surgery - 1.7 km	Circa 3.1km from Winchester Station which provides rail services to Eastleigh, Southampton, Basingstoke, Woking and London. Bus services are available within 500m of site with a frequency of 10 mins and an hourly service to Romsey.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.166	0.420	0.586
Evening	17:00 – 18:00	0.338	0.256	0.594

Source: TRICS Database (v7.7.2)

Table 3.6: Site Characteristics and Site-Specific Trip Rates – Rawlings Lane, Alton

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Rawlings Lane, Alton	The site is located on the northern edge of Alton. The development includes a mixture of private and affordable houses and flats.	Located off Gilbert White Way, a residential distributor road, which provides access to other local and residential roads. The A31 lies 4.7km to the south of the site and the M3 is circa 15km to the north.	Primary School – 0.7 km Secondary School - 1.5 km Local Shop/ Corner Shop - 0.7 km Supermarket -1.9 km Doctors Surgery - 1.7 km	Circa 1.9km from Alton Station which provides rail services to Woking and London. Bus services are available within 400m of site which provide a circular service around Alton. There are four service per day.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.193	0.386	0.579
Evening	17:00 – 18:00	0.358	0.188	0.546

Source: TRICS Database (v7.7.2)

Table 3.7: Site Characteristics and Site-Specific Trip Rates – Aldermaston Road, Basingstoke

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Aldermaston Road, Basingstoke	The site is located at the northern edge of Basingstoke, north of ring road. The development includes a mixture of private and affordable houses and flats.	Located off Aldermaston Road, which heads south east a short distance to the junction with the A339 Ringway North, and north into the countryside.	Primary School – 1.1km Secondary School – 1.8km Local Shop – 1.1km Supermarket – 1.0km Doctors – 1.1km	Circa 2.0km from Basingstoke Railway Station. Circa 8 buses per hour operate from within 400m of the site serving destinations including Newbury and Chineham
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.208	0.475	0.683
Evening	17:00 – 18:00	0.335	0.144	0.479

Source: TRICS Database (v7.7.2)

Table 3.8: Site Characteristics and Site-Specific Trip Rates – Barnfield Way, Hedge End

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Barnfield Way, Hedge End	The site is to the south of Hedge End. The development includes a mixture of private and affordable houses and flats.	Located off Barnfield Way, a new residential link Road. The development is located 650m from Junction 8 of the M27.	Primary School – 1km Secondary School – 1.7km Local Shop – 1.2km Supermarket – 1.6km Doctors – 2.3km	Circa 2.6km from Bursledon Railway Station providing for journeys to Southampton. Circa 2 buses per day operate from within 400m of the site to Eastleigh and Hamble
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.149	0.331	0.480
Evening	17:00 – 18:00	0.354	0.210	0.564

Source: TRICS Database (v7.7.2)

Table 3.9: Site Characteristics and Site-Specific Trip Rates – St Anne's Drive, Redhill

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
St Anne's Drive, Redhill	The site is situated at the eastern edge of Redhill around 400 metres to the north-east of the edge of the town. The development includes a mixture of private and affordable houses and flats.	Local routes head towards all parts of the town, with the A23 to the west. The M25 lies to the north of the site and can be accessed within an 8km drive of the site.	Primary School – 0.5 km Secondary School – 0.1 km Local Shop/ Corner Shop – 1km Supermarket – 0.8 km Doctors Surgery – 0.9 km	Circa 1km from Redhill Station which provides frequent services to London Victoria and Crawley. Circa 2 – 3 buses operate per hour within 400m of the site.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.100	0.280	0.380
Evening	17:00 – 18:00	0.186	0.082	0.238

Source: TRICS Database (v7.5.1)

Table 3.10: Site Characteristics and Site-Specific Trip Rates – Epsom Road, Guildford

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Epsom Road, Guildford	This site is located in a residential area to the east of the centre of Guildford on Epsom Road. The development includes a mixture of private and affordable houses and flats.	The site is accessed from the A25 Epsom Road and local routes head towards all parts of the town. The A3 lies 3km to the north of the site.	Primary School – 0.6 km Secondary School – 1.2 km Local Shop/ Corner Shop – 0.6 km Supermarket – 3.5 km Doctors Surgery – 1 km	Circa 7 – 8 buses per hour operate within 400m of the site. Circa 1.6km from the site is London Road Station.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.045	0.261	0.306
Evening	17:00 – 18:00	0.216	0.095	0.311

Source: TRICS Database (v7.7.2)

Table 3.11: Site Characteristics and Site-Specific Trip Rates – Summersdale Road, Chichester

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Summersdale Road, Chichester	This site is located in a north-eastern suburb of Chichester, with local roads heading around the residential area. The site was originally a hospital; at the time of the survey, parts of the hospital were still functioning.	The A27 is located a 2km drive to the south of the site. Local routes heading to various parts of town.	Primary School – 0.9 km Secondary School - 1.6 km Local Shop/ Corner Shop – 0.3 km Supermarket – 0.9 km Doctors Surgery – 0.2 km	Circa 6 buses per hour operate within 400m of the site. Circa 1.8km from the site is Chichester Railway Station which provides services to Brighton, Portsmouth and London Victoria.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.131	0.294	0.425
Evening	17:00 – 18:00	0.238	0.140	0.378

Source: TRICS Database (v7.7.2)

Table 3.12: Site Characteristics and Site-Specific Trip Rates – Upper Shoreham Road

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Upper Shoreham Road, Shoreham By Sea	This site is located in a residential area at the eastern edge of Shoreham by Sea. The development includes a mixture of private and affordable terraced houses and flats.	The A27 is located just to the north of the site, providing for local and strategic east and west journeys. Other local routes head towards various parts of town.	Primary School – 0.8 km Secondary School - 1.0 km Local Shop/ Corner Shop – 0.2 km Supermarket – 0.6 km Doctors Surgery – 0.8 km	Circa 9 – 10 buses per hour operate within 400m of the site. Circa 1.5km from the site is Shoreham By Sea Station which provides services to Brighton and Chichester.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.099	0.333	0.432
Evening	17:00 – 18:00	0.359	0.292	0.510

Source: TRICS Database (v7.7.2)

Table 3.13: Site Characteristics and Site-Specific Trip Rates – Broyle Road, Chichester

Site	Development Characteristics	Local Highway Network	Local Services and Facilities	Public Transport Network
Broyle Road, Chichester	This site is located in a residential area north of Chichester. The development includes a mixture of private and affordable terraced houses and flats.	The site is located adjacent to the A286 which provides one of the main routes into Chichester from the north. Other local routes head towards various parts of town.	Primary School – 1.3km Secondary School – 2.7 km Local Shop/ Corner Shop – 0.6 km Supermarket – 5.2km Doctors Surgery – 1.2 km	Circa hourly buses per hour operate within 400m of the site to Chichester town centre. Circa 2.1km from the site is Chichester Station which provides services to Brighton, Southampton, Portsmouth and London.
Time Period		Arrivals	Departures	Two Way
Morning	08:00 – 09:00	0.107	0.298	0.405
Evening	17:00 – 18:00	0.302	0.127	0.429

Source: TRICS Database (v7.7.2)

3.2.3 **Tables 3.2 to 3.13** demonstrate that the morning and evening period trip rates vary significantly between each of the sites selected. This variation in trip rates is not unexpected given the differing characteristics between the sites. For example, Hunts Pond is located 0.9km from the nearest primary school, 5.1km from the nearest secondary education facility and 2.5km from the nearest railway station; as such the site experiences a higher peak hour trip generation than other sites. By comparison, the St Anne's site has primary education located within 0.5km of the site, secondary education within 0.1km and the nearest railway station within 1.0km, resulting in the vehicular trip rate being considerably lower.

3.2.4 Consideration has been given to the distance to local services and facilities (including the proposed mixed-uses within the development site (which will be within circa 400m walking distance)), the local and strategic road network, the provision of bus services and the availability of rail services. Using these parameters, the following sites were identified as having similar characteristics to the proposed development:

- SC-03-M-03 – 500 dwellings, St Anne's Drive, Redhill, Surrey;
- SC-03-M-04 – 130 dwellings, Epsom Road, Surrey;
- WS-03-M-04 – 214 dwellings, Summersdale Road, Chichester; and
- WS-03-M-16 – 252 dwellings, Broyle Road, Chichester.

3.2.5 The primary factors in the deselection of the other sites identified in the search is set out in **Table 3.14**.

Table 3.14: Reasons for Site Deselection

	Reason for Deselection
South Coast Road, Peacehaven	• Remote to secondary education; and • Less frequent bus services.
Hampstead Lane, Hailsham	• Remote a wide range of everyday local facilities and services; and • Limited accessibility to rail services.
Hunts Pond Road, Fareham	• Remote to a wide range of everyday local facilities and services including primary and secondary education; • Limited accessibility to rail services; and • Infrequent bus services.
Romsey Road, Winchester	• Remote to a wide range of everyday local facilities and services; and • Limited accessibility to rail services.
Rawlings Lane, Alton	• Remote to a wide range of everyday local facilities and services; • Less frequent bus services.
Aldermaston Road, Basingstoke	• Remote to a wide range of everyday local facilities and services; and • Severance to facilities caused by dual carriageway ring road.
Barnfield Way, Hedge End	• Remote to a wide range of everyday local facilities and services; • Severance to facilities in Bursledon (such as supermarket and Railway Station caused due to M3 motorway); and • Less frequent bus services;
Upper Shoreham Road, Shoreham	• Limited sustainable connectivity/indirect routes to railway station; and • Direct access via Holmbush Roundabout to relatively uncongested section of Strategic Road Network.

3.2.6 **Table 3.15**, below, summarises the trip rates derived from the surveys associated with the site selections identified in paragraph 3.2.4.

Table 3.15: Trip Rates (vehicles per dwelling) - Specific Site Selections

Time Period	Arrivals	Departures	Two Way
08:00 – 09:00	0.098	0.282	0.380
17:00 – 18:00	0.226	0.092	0.318

Source: TRICS Database (v7.7.2)

3.2.7 For the purposes of comparison, the trip rates for the weekday morning and evening peaks are including within the Arun Transport Study are repeated in **Table 3.16**, below.

Table 3.16: Trip Rates (vehicles per dwelling) – Arun Transport Study

Time Period	Arrivals	Departures	Two Way
08:00 – 09:00	0.091	0.259	0.350
17:00 – 18:00	0.243	0.100	0.343

3.2.8 On the basis that the trip rates presented in **Table 3.16** are derived from surveys of sites that are most representative of the local characteristics of the proposed development, these trip rates would be suitable to inform the residential trip generation of the Transport Assessment. However, it is noted that the use of these surveys results in a higher trip rate than those used in the Arun Transport Study while the Arun Transport Study has a higher trip rate in the PM period. Therefore, a combination of the highest trip rates for each period will be used to ensure a robust assessment. The trip rates to be used are summarised in **Table 3.17**.

Table 3.17: Trip Rates for Nursery Fields TA

Time	Trip Rate (per dwelling)		
	Arrivals	Departures	Two-Way
Residential – Weekday Morning Peak	0.098	0.282	0.380
Residential – Weekday Evening Peak	0.243	0.100	0.343

Source: TRICS v7.2.2

3.2.9 On this basis, the forecast trip generation of the proposed development based on 210 homes is set out in **Table 3.18**.

Table 3.18: Forecast Trip Generation (210 dwellings)

Time	Trip Generation (210 dwellings)		
	Arrivals	Departures	Two-Way
Residential – Weekday Morning Peak	21	59	80
Residential – Weekday Evening Peak	51	21	72

Source: Consultants' calculations

SECTION 4 Summary

- 4.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed development at Nursery Fields, on land to the West of Bersted and to the north of Chalcraft Lane.
- 4.2 Through the Transport Assessment Scoping process, WSCC requested that the trip rates applied in the Arun Transport Study (ATS) were assessed to determine whether they were suitable for the TA accompanying the development proposals, on the basis that the trip rates can be refined in accordance with site specific characteristics.
- 4.3 In examining the Arun Local Plan, the Inspector stated that 'realistic trip rates' (ref: *para 199, Report to Arun District Council, 4 July 2018*) have been applied and that '... the Council has applied robust and consistent parameters relating to base flows, trip generation and assessing severe impacts' (ref: *para 126, Report to Arun District Council, 4 July 2018*). The Inspector concludes that the approach is sound.
- 4.4 Nevertheless, residential trip rates have been obtained from the TRICS database for mixed private/non-private dwellings. A detailed assessment has been undertaken on the survey sites to demonstrate that the trip rate proposed is reflective of the character of the proposed development.
- 4.5 The assessment demonstrated that the morning peak hour trip rate used in the Arun Transport Study is slightly lower than that derived as part of the site-specific assessment, while the evening peak hour has slightly higher trip rates. Therefore, in the interests of a robust assessment, a mixture of the greatest trip rates for both the morning and evening peak periods established through the Arun Transport Study and site-specific assessment will be used to inform the assessment.

APPENDIX A. TRICS OUTPUTS – ALL SITES

Calculation Reference: AUDIT-236601-200812-0845

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL VEHICLES

Selected regions and areas:

02 SOUTH EAST	
ES EAST SUSSEX	2 days
HC HAMPSHIRE	5 days
SC SURREY	2 days
WS WEST SUSSEX	3 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: 157 to 500 (units:)
 Range Selected by User: 150 to 500 (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 23/10/19

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:

Tuesday	1 days
Wednesday	6 days
Thursday	5 days

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

Selected survey types:

Manual count	12 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)	4
Edge of Town	8

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	10
Out of Town	1
No Sub Category	1

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	12 days
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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:

5,001 to 10,000	2 days
10,001 to 15,000	6 days
15,001 to 20,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	1 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	3 days
75,001 to 100,000	2 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	2 days
1.1 to 1.5	9 days
1.6 to 2.0	1 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	11 days
No	1 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	12 days
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This data displays the number of selected surveys with PTAL Ratings.

i-Transport Grove House Basingstoke

Licence No: 236601

LIST OF SITES relevant to selection parameters

1	ES-03-M-07	MIXED HOUSING	EAST SUSSEX
	SOUTH COAST ROAD		
	PEACEHAVEN		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	188	
	Survey date: THURSDAY	12/11/15	Survey Type: MANUAL
2	ES-03-M-11	MIXED HOUSES & FLATS	EAST SUSSEX
	HEMPSTEAD LANE		
	HAILSHAM		
	UPPER HORSEBRIDGE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	354	
	Survey date: WEDNESDAY	13/07/16	Survey Type: MANUAL
3	HC-03-M-06	HOUSES & FLATS	HAMPSHIRE
	HUNTS POND ROAD		
	NEAR FAREHAM		
	TITCHFIELD		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	328	
	Survey date: WEDNESDAY	04/11/15	Survey Type: MANUAL
4	HC-03-M-09	MIXED HOUSES & FLATS	HAMPSHIRE
	ROMSEY ROAD		
	WINCHESTER		
	STANMORE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	157	
	Survey date: THURSDAY	07/06/18	Survey Type: MANUAL
5	HC-03-M-10	MIXED HOUSES & FLATS	HAMPSHIRE
	RAWLINGS LANE		
	ALTON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	176	
	Survey date: TUESDAY	05/03/19	Survey Type: MANUAL
6	HC-03-M-11	MIXED HOUSES & FLATS	HAMPSHIRE
	ALDERMASTON ROAD		
	BASINGSTOKE		
	Edge of Town		
	No Sub Category		
	Total No of Dwellings:	238	
	Survey date: THURSDAY	07/03/19	Survey Type: MANUAL
7	HC-03-M-12	MIXED HOUSES & FLATS	HAMPSHIRE
	BARNFIELD WAY		
	NEAR SOUTHAMPTON		
	HEDGE END		
	Edge of Town		
	Out of Town		
	Total No of Dwellings:	181	
	Survey date: WEDNESDAY	23/10/19	Survey Type: MANUAL
8	SC-03-M-06	HOUSES & FLATS	SURREY
	ST ANNE'S DRIVE		
	REDHILL		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	500	
	Survey date: WEDNESDAY	11/12/13	Survey Type: MANUAL

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LIST OF SITES relevant to selection parameters (Cont.)

9	SC-03-M-07	HOUSES/ FLATS	SURREY
	EPSOM ROAD		
	GUILDFORD		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	199	
	Survey date: THURSDAY	24/10/13	Survey Type: MANUAL
10	WS-03-M-04	HOUSES & FLATS	WEST SUSSEX
	SUMMERSDALE ROAD		
	CHICHESTER		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	214	
	Survey date: THURSDAY	08/05/14	Survey Type: MANUAL
11	WS-03-M-12	HOUSES & FLATS	WEST SUSSEX
	UPPER SHOREHAM ROAD		
	SHOREHAM BY SEA		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	192	
	Survey date: WEDNESDAY	27/04/16	Survey Type: MANUAL
12	WS-03-M-16	MIXED FLATS & HOUSES	WEST SUSSEX
	BROYLE ROAD		
	CHICHESTER		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	252	
	Survey date: WEDNESDAY	21/03/18	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.

i-Transport Grove House Basingstoke

Licence No: 236601

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

MULTI-MODAL 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	12	248	0.073	12	248	0.274	12	248	0.347
08:00 - 09:00	12	248	0.132	12	248	0.353	12	248	0.485
09:00 - 10:00	12	248	0.126	12	248	0.154	12	248	0.280
10:00 - 11:00	12	248	0.111	12	248	0.142	12	248	0.253
11:00 - 12:00	12	248	0.119	12	248	0.127	12	248	0.246
12:00 - 13:00	12	248	0.131	12	248	0.121	12	248	0.252
13:00 - 14:00	12	248	0.125	12	248	0.131	12	248	0.256
14:00 - 15:00	12	248	0.110	12	248	0.144	12	248	0.254
15:00 - 16:00	12	248	0.230	12	248	0.162	12	248	0.392
16:00 - 17:00	12	248	0.236	12	248	0.144	12	248	0.380
17:00 - 18:00	12	248	0.300	12	248	0.144	12	248	0.444
18:00 - 19:00	12	248	0.270	12	248	0.147	12	248	0.417
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.963			2.043			4.006

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:	157 - 500 (units:)
Survey date range:	01/01/12 - 23/10/19
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	5
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.

APPENDIX B. TRICS OUTPUTS – SITE SPECIFIC

Calculation Reference: AUDIT-236601-200812-0813

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING

VEHICLES

Selected regions and areas:

02 SOUTH EAST
SC SURREY 2 days
WS WEST SUSSEX 2 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: 199 to 500 (units:)
Range Selected by User: 150 to 500 (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 23/10/19

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:

Wednesday 2 days
Thursday 2 days

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

Selected survey types:

Manual count 4 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) 3
Edge of Town 1

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 4

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 4 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®.

Secondary Filtering selection (Cont.):Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 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:

50,001 to 75,000	2 days
125,001 to 250,000	2 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	1 days
1.1 to 1.5	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	4 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	4 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

1	SC-03-M-06	HOUSES & FLATS	SURREY
	ST ANNE'S DRIVE		
	REDHILL		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	500	
	Survey date: WEDNESDAY	11/12/13	Survey Type: MANUAL
2	SC-03-M-07	HOUSES/ FLATS	SURREY
	EPSOM ROAD		
	GUILDFORD		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	199	
	Survey date: THURSDAY	24/10/13	Survey Type: MANUAL
3	WS-03-M-04	HOUSES & FLATS	WEST SUSSEX
	SUMMERSDALE ROAD		
	CHICHESTER		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	214	
	Survey date: THURSDAY	08/05/14	Survey Type: MANUAL
4	WS-03-M-16	MIXED FLATS & HOUSES	WEST SUSSEX
	BROYLE ROAD		
	CHICHESTER		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	252	
	Survey date: WEDNESDAY	21/03/18	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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
ES-03-M-07	site location not representative
ES-03-M-11	site location not representative
HC-03-M-06	site location not representative
HC-03-M-09	site location not representative
HC-03-M-10	site location not representative
HC-03-M-11	site location not representative
HC-03-M-12	site location not representative
WS-03-M-12	site location not representative

i-Transport Grove House Basingstoke

Licence No: 236601

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

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	4	291	0.050	4	291	0.182	4	291	0.232
08:00 - 09:00	4	291	0.098	4	291	0.282	4	291	0.380
09:00 - 10:00	4	291	0.106	4	291	0.142	4	291	0.248
10:00 - 11:00	4	291	0.087	4	291	0.115	4	291	0.202
11:00 - 12:00	4	291	0.090	4	291	0.104	4	291	0.194
12:00 - 13:00	4	291	0.082	4	291	0.106	4	291	0.188
13:00 - 14:00	4	291	0.090	4	291	0.105	4	291	0.195
14:00 - 15:00	4	291	0.090	4	291	0.111	4	291	0.201
15:00 - 16:00	4	291	0.176	4	291	0.120	4	291	0.296
16:00 - 17:00	4	291	0.187	4	291	0.112	4	291	0.299
17:00 - 18:00	4	291	0.226	4	291	0.092	4	291	0.318
18:00 - 19:00	4	291	0.222	4	291	0.089	4	291	0.311
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.504			1.560			3.064

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.

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Parameter summary

Trip rate parameter range selected:	199 - 500 (units:)
Survey date range:	01/01/12 - 23/10/19
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	5
Surveys manually removed from selection:	8

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.

Nursery Fields, Land at Chalcraft Lane, Bersted
Transport Assessment Scoping Note

Client:

i-Transport Ref: DS/IN/ITB14224-001

Date: 13 May 2020

Nursery Fields, Land at Chalcraft Lane, Bersted

Transport Assessment Scoping Note

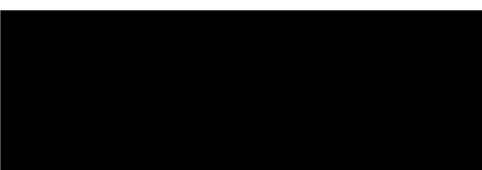
Client:

i-Transport Ref: DS/IN/ITB14224-001

Date: 13 May 2020

i-Transport LLP

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RG24 8AG



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Quality Management

Report No.	Comments	Date	Author	Authorised
ITB14224-001	Draft	30/04/2020	IN/AI	DS
ITB14224-001	Issue	12/05/2020	IN/AI	DS

ARUN DISTRICT COUNCIL BE/148/20/OUT

File Ref: T:\Projects\14000 Series\14224\ITB

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SECTION 3	DEVELOPMENT PROPOSALS	5
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SECTION 5	TRAFFIC IMPACT ASSESSMENT	15
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Figures

FIGURE 1	SITE LOCATION PLAN
FIGURE 2	LOCAL FACILITIES AND SERVICES PLAN

Drawings

507-011 REV H	PROPOSED ACCESS ARRANGEMENT
ITB14224-GA-002	SWEPT PATH ANALYSIS – SUPER LARGE REFUSE VEHICLE

Appendices

APPENDIX A.	EMERGING MASTERPLAN
APPENDIX B.	DISTRIBUTION AND ASSIGNMENT MODEL

SECTION 1 INTRODUCTION

1.1 Introduction

- 1.1.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed development consisting of 210 dwellings at Nursery Fields, on land to the

BERKSHIRE DISTRICT COUNCIL BE/148/20/OUT

- 1.1.5 The location of the proposed development parcel and nearby consented development is shown in **Image 1.2**

Image 1.2: Extract of Site Location Plan

Source: Consultants' image

1.2 **Scope of Report**

- 1.2.1 In line with the requirements of the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG), this Transport Assessment Scoping Note (TASN) has been produced to enable discussion and agreement of the proposed approach and key parameters for the Transport Assessment (TA) with

ARUN DISTRICT COUNCIL BE/148/20/OUT

❖

SECTION 2 TRANSPORT POLICY CONTEXT

2.1 Introduction

2.1.1 This section of the TA will provide an overview of relevant national and local transport planning policy documents, which provide the framework against which the transport and highways aspects of the proposed development will be assessed.

2.1.2 The key national documents to be referred to within the TA are:

- National Planning Policy Framework (NPPF);
- National Planning Practice Guidance (NPPG);

2.1.3 The key local policy documents to be referred to within the TA are:

- Arun District Council Adopted Local Plan 2011-2031;
ARUN DISTRICT COUNCIL BE/148/20/OUT
-

SECTION 3 DEVELOPMENT PROPOSALS

3.1.1 The planning application will be in outline form with only access to be determined as a detailed matter. The development proposals for the site are still emerging, however, it is anticipated the development will comprise up to 210 residential dwellings.

3.1.1.1 The TA will present a masterplan and illustrative site layout to demonstrate how the development can be accommodated on the site, however, matters relating to the internal layout will be determined at the reserved matters stage.

3.1.1.2 Nevertheless, the layout will be designed in accordance with the guidance contained within the DfT's 'Manual for Streets' 1 and 2 and

3.2.2 It is also proposed to provide a number of pedestrian and cycle links to the existing network surrounding the site including:

- Access onto Chalcraft Lane adjacent to the vehicular access;
- Access to footpath 136 which runs through the centre of the site;
- Access to footpath 137 which runs along the western boundary of the site;
- Access to footpath 134 which runs along the northern boundary of the site;
- Access to Jubilee Recreation Ground; and
- A connection to the Bognor Regis / Chichester Cycle Route via Tara Perry Close.

3.2.3 Consequently, it is proposed to provide a permeable and well-connected development which prioritises non-motorised users and minimises distances to local services and facilities.

3.2.4 Given the scale of the development, a second point of emergency access will also be provided. This is likely to be in the form of a widened and uprated pedestrian/cycle link, potentially via Tara Perry Close or through an extension of the cycleway along Public Right of

3.4 **Waste and Recycling Collection**

- 3.4.1 The refuse collection arrangements will be designed with regard to the guidance in Section 6.8 of Manual for Streets (MfS) guidance and the Building Regulations. For example, where appropriate, bin collection areas will be provided such that a refuse vehicle will not have to enter any smaller cul-de-sacs of 55m or less in length. The layout will demonstrate a connected network of streets to enable progressive movement for refuse vehicles and to limit the need for turning.
- 3.4.2 The masterplan will include street widths and turning heads of sufficient size to allow a refuse vehicle to enter, turn and exit the development in forward gear.
- 3.4.3 Refuse vehicles will not enter cul-de-sacs of less than 55m in length. In these locations bin collection points will be provided to meet the carry distance requirements given in Section 6 of MfS, i.e. 25m from collection point to refuse vehicle and 30m from individual dwellings to the collection point.

3.5 **Emergency Vehicles**

- 3.5.1 The emergency vehicle access requirements for the development will comply with Section 5.4 and 5.5 of the

SECTION 4 ACCESSIBILITY

4.1 Introduction

4.1.1 This section of the TA will consider the accessibility of the site by walking, cycling and public transport to local services and facilities, including education, employment, health, leisure and shopping.

4.1.2 To consider the propensity for residents to walk or cycle to local facilities, consideration has been given to the distances that people are prepared to travel by walking and cycling.

Walking Distances

4.1.3 Paragraph 4.4.1 of the Manual for Streets states:

"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents."

4.1.4 This is corroborated by the National Travel Survey (NTS) 2018 which identifies the mode share journeys of different lengths (Chart 6.1) and confirms that the vast majority (80%) of trips of up to one mile (1.6km) are undertaken on foot.

Table 4.1: Proportion of Trips per Year by Journey Purposes (all modes)

Source: National Travel Survey, England, 2018

- 4.1.5 A walking distance of up to 1.6km is identified to offer the greatest potential to replace car trips, and this is therefore considered to be a 'reasonable' walking distance.
- 4.1.6 It is important to note that 2km is not however a maximum walking distance. Historically, the Design Manual for Roads and Bridges (DMRB) TD91/05 "Provision for Non-Motorised Users" at paragraph 2.3 has stated that:

"Walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles. Walking and rambling can also be undertaken as a leisure activity, often over longer distances".

ARUN DISTRICT COUNCIL BE/148/20/OUT

4.1.7

Cycling Distances

4.1.10 DMRB TA 91/05 "Provision For Non-Motorised Users" paragraph 2.11 states:

"Cycling is used for accessing a variety of different destinations, including educational facilities, shops and places of work, up to a range of around 5 miles. Cycling is also undertaken as a leisure activity, often over much longer distances. As well as being a mode of transport in its own right, cycling frequently forms part of a journey in combination with cars and public transport."

4.1.11 Paragraph 1.5 in the Department for Transport's (DfT) Local Transport Note 2/08 'Cycle Infrastructure Design' (October 2008) states that:

"Urban networks are primarily for local journeys. In common with other modes, many utility cycle journeys are under three miles (4.8km) (ECF, 1998), although for commuter journeys, a trip distance of over 5 miles (8km) is not uncommon."

4.1.12 Data provided within the National Travel Survey demonstrates that the average distance per journey by bike is approximately 4.4km, with the current average length of an employment and leisure cycle trip some 5.2km.

4.1.13 For the purpose of this assessment, a 5km cycling distance is considered to represent a 'reasonable' cycle distance, with 8km considered to be 'maximum' cycling distance.

4.2 Accessibility to Local Facilities

4.2.1 Bersted offers a good range of local facilities and services which future residents of the site are likely to visit on a day to day basis. These are summarised in **Table 4.1** and identified in **Figure 2**.

Table 4.1: Key Destinations and Services

Purpose	Destination	Total Distance (m)	Walking Journey Time (mins)	Cycle Journey Time (mins)
Leisure	Chalcraft Nursery	250	3	1
	Jubilee Recreation Ground	270	3	1
	Bersted Village Hall	270	3	1
	Newtown Sports & Social Club	1000	12	4
	The Arena Sports Centre	1150	14	4
	The Royal Oak Public House	950	11	4
Retail	Nisa Local & Post Office	1000	12	4
	Tesco Express	1050	13	4
	Spar Euro Garage Bognor Regis	1450	17	5
	Co-op Food	1950	23	7
	Chichester Road Shops	900	11	3
Employment	South Bersted Business Park	2350	28	9
	Durban Park	2450	29	9
	Castlegrove Business Park	2550	30	10
	Arun Business Park	2850	34	11
Education	The Regis School	1150	14	4
	Stepping Stone Pre-School	1200	14	5
	Southway Primary School	1200	14	5
	Bognor School	1450	17	5
	Barton's Primary School	1450	17	5
	Nyewood CofE Infants School	1550	18	6
	Nyewood CofE Junior School	1550	18	6
Healthcare	Kamsons Pharmacy	900	11	3

4.2.2 As shown in **Table 4.1** and illustrated on **Figure 2** there are a range of local facilities and services which are within a 'reasonable' walking and cycling distance from the site.

4.2.3 **Table 4.1** demonstrates that there are a wide range of everyday facilities within a comfortable or reasonable walking distance of residents including education, convenience retail, healthcare, a range of leisure facilities and employment opportunities. All of the services and facilities outlined in **Table 4.1** are within a reasonable cycling distance.

ARUN DISTRICT COUNCIL BE/148/20/OUT

4.2.4 As set out in Section 3, the proposed development will form part of the wider '

Image 4.1: Extract from PROW Map

ARUN DISTRICT COUNCIL BE/148/20/OUT

Source:

Image 4.2: Proposed PIA Study Area



Source: Consultants' image

SECTION 5 TRAFFIC IMPACT ASSESSMENT

5.1 Trip Generation

- 5.1.1 The adopted The Arun Local Plan (2011-2031) was supported by a Transport Study Stage 3 Report prepared by Systra. The report identifies trip rates obtained from the TRICS database to calculate origin and destination trip rates for residential developments for the AM Peak (0800-0900) and PM Peak (1700-1800) modelled hours. A summary of the residential trip rates used in the modelling report are set out in Table 5.1 below:

Table 5.1: Vehicle Trip Rates from Arun Transport Study Stage 3 Report

Time	Trip Rate (per dwelling)		
	Arrivals	Departures	Two-Way

Residential --

Table 5.3: Proportion of Peak Hour Trips by Journey Purpose (Car Driver Only)

Trip Purpose	AM Peak (0800-0900)	PM Peak (1700-1800)
Commuting/Business	37.6%	43.9%
All Other Journey Purposes	62.4%	56.1%
Total	100%	100%

Source: Car driver trip start time by trip purpose (Monday to Friday only): Great Britain, 2014/18, National Travel Survey, DfT, 2019

5.2.2 Some 38% of the total vehicular trips generated by the residential development will be for employment journeys in the morning peak hour period. The remaining 62% of the vehicle trips will be all other purposes, including education, shopping, leisure and personal business trips. In the evening peak hour, 44% of journeys are employment related with other journeys comprising 56% of the total vehicular trips.

5.2.3 For the purpose of this assessment, the analysis has been undertaken on the basis that 44% of the total vehicular trips generated by the residential development will be for employment journeys and the remaining 56% of the vehicle trips will be for all other purposes for both the morning and evening peak hours. This provides a robust estimate because it assumes a greater proportion of non-local journeys.

Trip Distribution

5.2.4 To provide an accurate assessment of the likely distribution of traffic from the site, separate methodologies have been applied to consider the destinations of commuting and business trips to other trip purposes:

ARUN DISTRICT COUNCIL BE/148/20/OUT

- For commuting and business trips, the 2011 National Census Journey to

Table 5.4: Distribution of Car Drivers

Destination	Percentage of Combined Trips (%)
Bognor Regis	21.1%
North Bersted	18.0%
Aldwick	13.5%
Chichester	10.8%
Littlehampton	4.6%
Pagham	3.8%
Felpham	3.5%
North Mundham	3.3%

5.2.10 **Table 5.5** provides a summary of the assignment of development generated trips.

Table 5.5: Summary of Proposed Development Traffic Assignment

Description of Route out of Development Site		% Traffic	Vehicle Movements		
			In	Out	Two-Way
Morning Peak					
First Route	Chalcraft Lane N	62.7%	12	34	46
	Chalcraft Lane S	37.3%	7	20	27
Second Route	Chalcraft Lane N	62.7%	12	34	46
	Chalcraft Lane S	20.0%	4	11	15

5.2.11 Based on the above, it can be seen that approximately 63% of development traffic will route to/from the north of the access on Chalcraft Lane, equating to circa 45-46 two-way movements in the morning peak and evening peaks. To the south of the access on Chalcraft Lane it is anticipated that there the development will generate 27 two-way movements in the morning peak and evening peaks. On this basis, the traffic impact on the local highway network equates to less than one vehicle movement every minute to the north of the access and approximately one vehicle movement every two minutes to the south of the access during the busiest periods of the day.

5.2.12 A copy of the full distribution and assignment model is included as **Appendix B**.

5.3 Committed Development

1.1.1 The traffic impact assessment will take into account the cumulative traffic impact of other developments in the vicinity of the site, including:

- Landform Southwest of New Barn Lane – 99 dwellings;
- Church Commissioners land Southeast of New Barn Lane – 50 dwellings;
- Land North of Sefter Road, Pagham - 280 dwellings;
ARUN DISTRICT COUNCIL BE/148/20/OUT
- Land South of Summer Lane &

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5.4.3

Table 5.7: Calculated Local Peak Period Growth Rates

Growth Period	Time Period	Growth Rate
2018-2023	AM Peak	1.0255
	PM Peak	1.0203
2018-2025	AM Peak	1.0345
	PM Peak	1.0280

Source: TEMPRO and Consultant Calculated

- 5.4.6 The calculated growth rates equate to approximately 2% growth between 2018 and 2023 in both peak periods and 3% growth in the peak periods between 2018 and 2025.
- 5.4.7 It is also proposed to undertake a sensitivity test for the future year of 2031. Using the same methodology, growth factors for 2033 have been calculated and are presented in **Table 5.8**.

Table 5.8: Calculated Local Peak Period Growth Rates 2018 - 2031

Growth Period	Time Period	Growth Rate
2018-2031	AM Peak	1.0586
	PM Peak	1.0495

Source: TEMPRO and Consultant Calculated

- 5.4.8 The calculated growth rates equate to approximately 5-6% growth between 2018 and 2031 in the peak periods.

5.5 Junction Capacity Assessments

- 5.5.1 As part of the Transport Assessment detailed junction capacity assessments will be undertaken at key junctions where the development is likely to have an impact and if necessary, identify improvements necessary to mitigate the impact of the development.

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- 5.5.2 The assessment will be carried out in accordance with the

ARUN DISTRICT COUNCIL BE/148/20/OUT

- ◆ Chalcraft Lane /

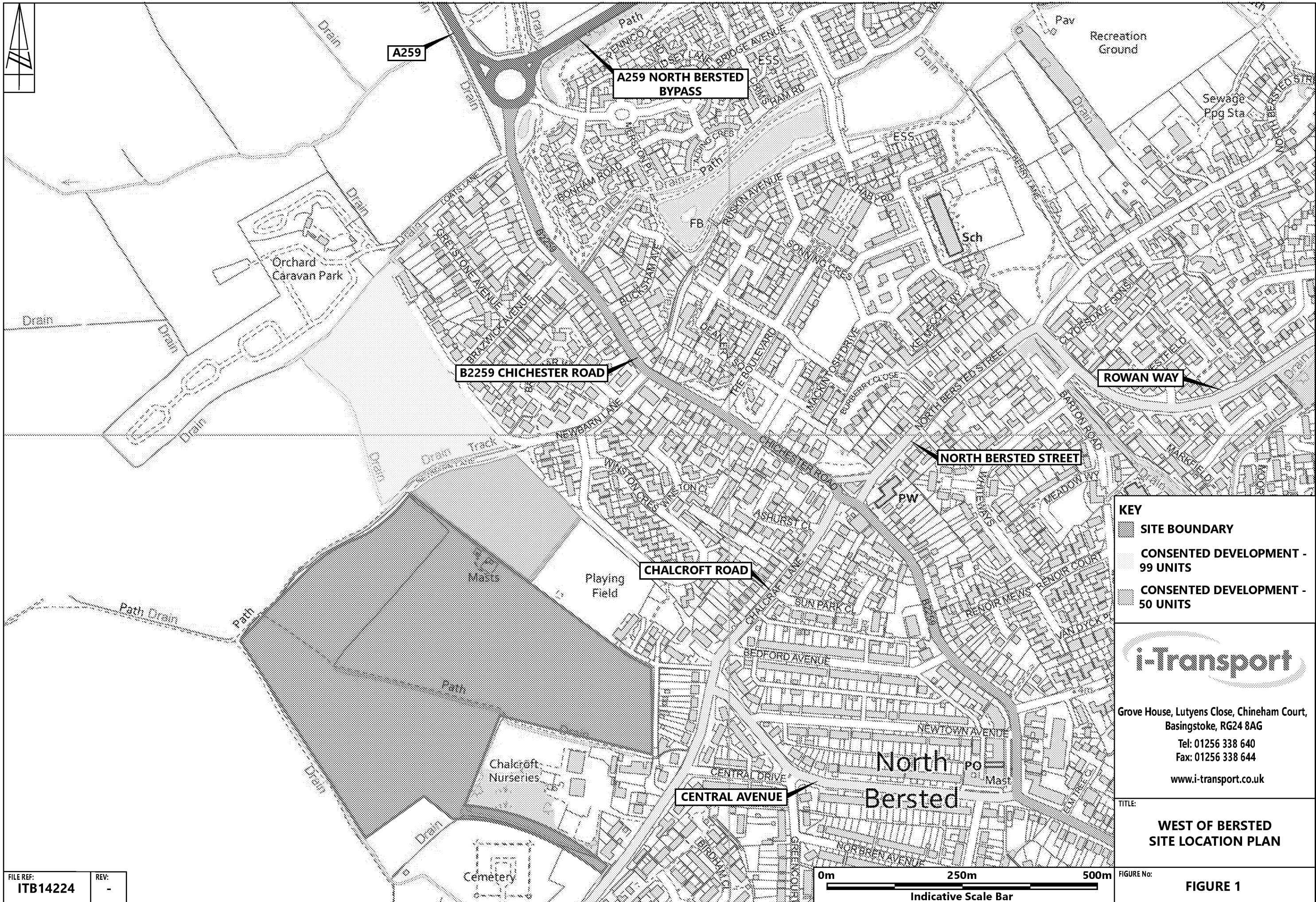
5.5.6 **Table 5.9** summarises the junctions affected by the

SECTION 6 SUMMARY

- 6.1.1 Landform Bersted Ltd has appointed i-Transport LLP to provide highways and transport advice for the proposed development consisting of 210 dwellings at Nursery Fields on Land to the

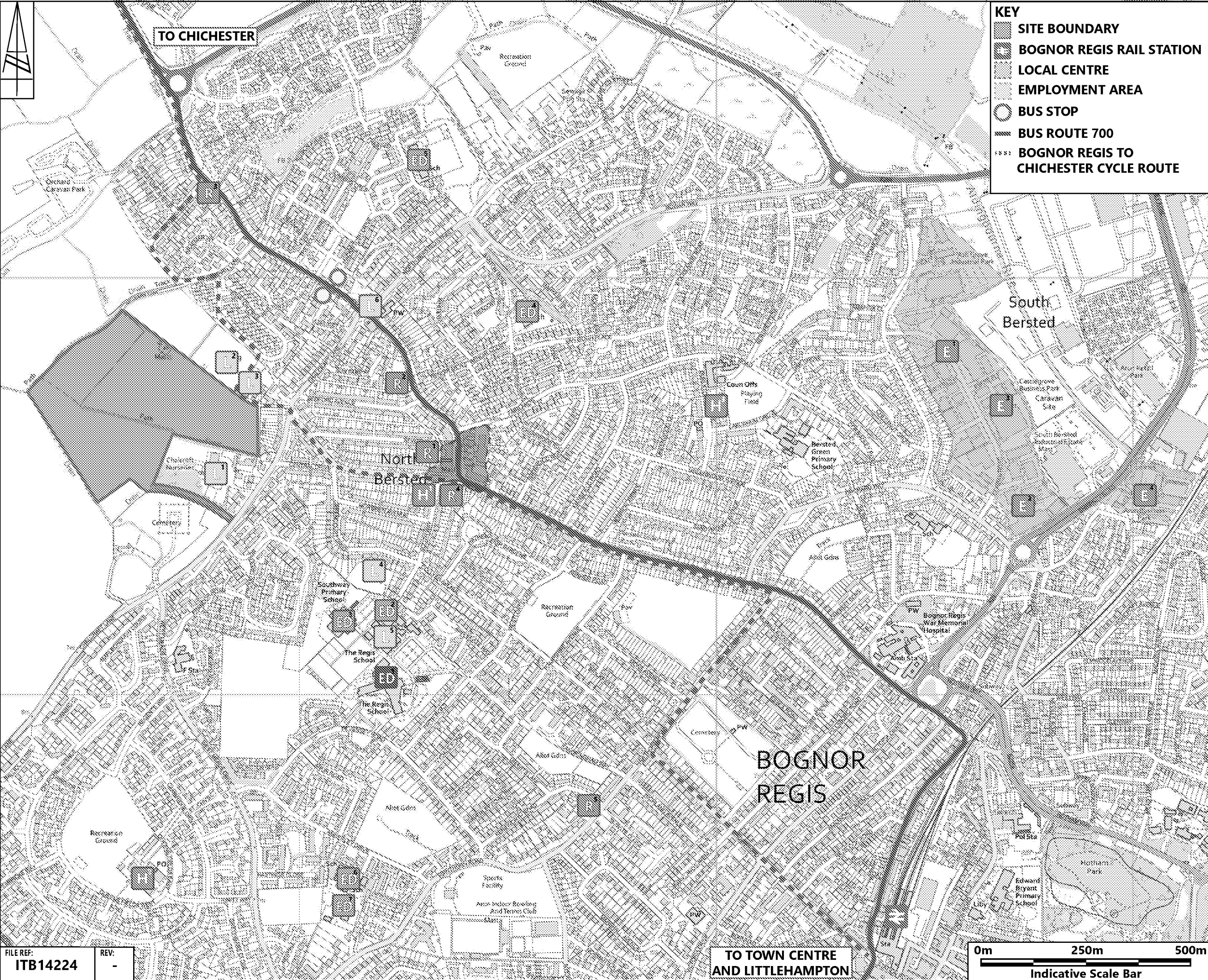
REF: DS/IN/ITB14224-001
COUNCIL BE/148/20/OUT

FIGURES



FILE REF:
ITB14224

REV:
-



- KEY**
- SITE BOUNDARY
 - BOGNOR REGIS RAIL STATION
 - LOCAL CENTRE
 - EMPLOYMENT AREA
 - BUS STOP
 - BUS ROUTE 700
 - BOGNOR REGIS TO CHICHESTER CYCLE ROUTE

- LEISURE**
- CHALCROFT NURSERY
 - JUBILEE RECREATION GROUND
 - BERSTED VILLAGE HALL
 - NEWTOWN SPORTS AND SOCIAL CLUB
 - THE ARENA SPORTS CENTRE
 - THE ROYAL OAK PUB
- EMPLOYMENT**
- SOUTH BERSTED BUSINESS PARK
 - DURBAN PARK
 - CASTLEGROVE BUSINESS PARK
 - ARUN BUSINESS PARK
- RETAIL**
- NISA LOCAL & POST OFFICE
 - TESCO EXPRESS
 - SPAR
 - CHICHESTER ROAD SHOPS
 - CO-OP FOOD
- EDUCATION**
- THE REGIS SCHOOL
 - STEPPING STONE PRESCHOOL
 - SOUTHWAY PRIMARY SCHOOL
 - BOGNOR SCHOOL
 - BARTON'S PRIMARY SCHOOL
 - NYEWOOD CofE INFANT AND JUNIOR SCHOOLS
- HEALTHCARE**
- KAMSONS PHARMACY
 - WEST MEADS SURGERY
 - BERSTED GREEN SURGERY

i-Transport

Grove House, Lutyens Close, Chineham Court,
Basingstoke, RG24 8AG
Tel: 01256 338 640
Fax: 01256 338 644
www.i-transport.co.uk

TITLE:

**WEST OF BERSTED
LOCAL FACILITIES PLAN**

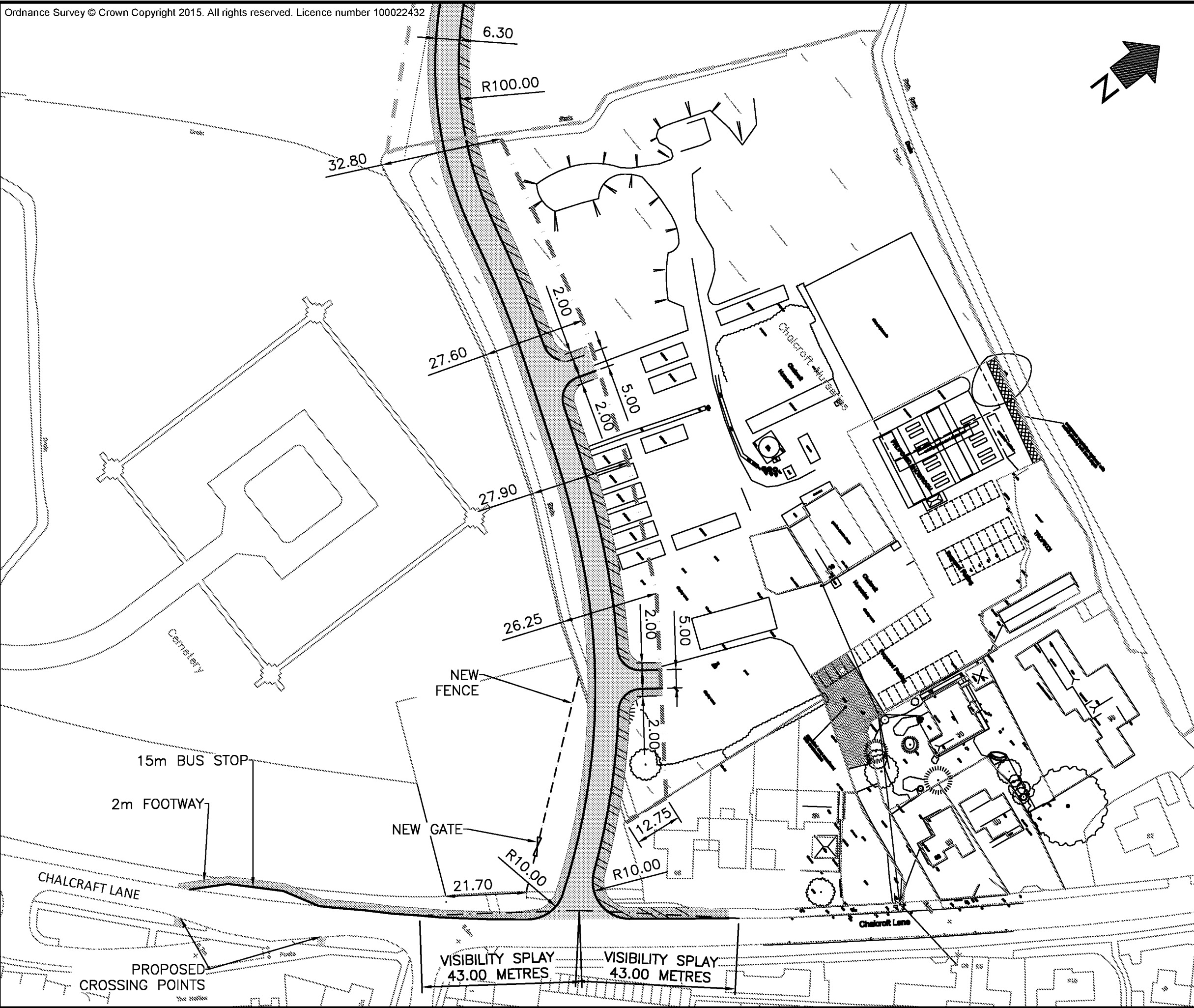
FIGURE No: **FIGURE 2**

FILE REF: **ITB14224**
REV: **-**

0m 250m 500m
Indicative Scale Bar

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DRAWINGS



LEGEND

- PROPOSED ACCESS ROAD
- PROPOSED FOOTWAY
- PROPOSED SHARED-USE FOOTWAY CYCLEWAY
- PROPOSED TACTILE PAVING
- PROPOSED KERB
- PROPOSED FOOTWAY EDGING
- LAND BOUNDARY
- ACCESS LAND
0.49 HA (1.21 ACRES)

H	24/02/20	AMENDMENTS TO DETAIL	AS	PG	PG
G	25/11/19	SETTING DIMENSIONS ADDED	AS	PG	PG
F	29/01/19	REALIGNMENT OF ACCESS ROAD	AS	PG	PG
E	14/11/18	ACCESS ROAD WIDENED	AS	PG	PG
D	15/10/18	FENCE & GATED ADDED	AS	PG	PG
C	26/07/18	AMENDMENTS TO ACCESS ROAD	AS	PG	PG
B	19/12/17	AMENDMENTS TO ACCESS ROAD STUBS	AS	PG	PG
A	11/04/16	PROPOSED ACCESS ROAD REALIGNED	AS	PG	PG
-	07/03/16	ORIGINAL ISSUE	AS	PG	PG
Rev	Date	Description	Drm	Chk	App

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CAD PRECISION LTD

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PSP consulting

M: +44 7887 701715
E: Patrick.Gurner@pspconsulting.co.uk

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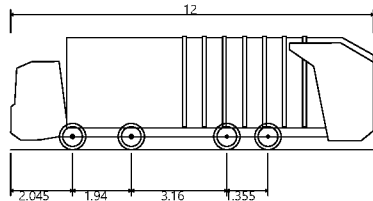
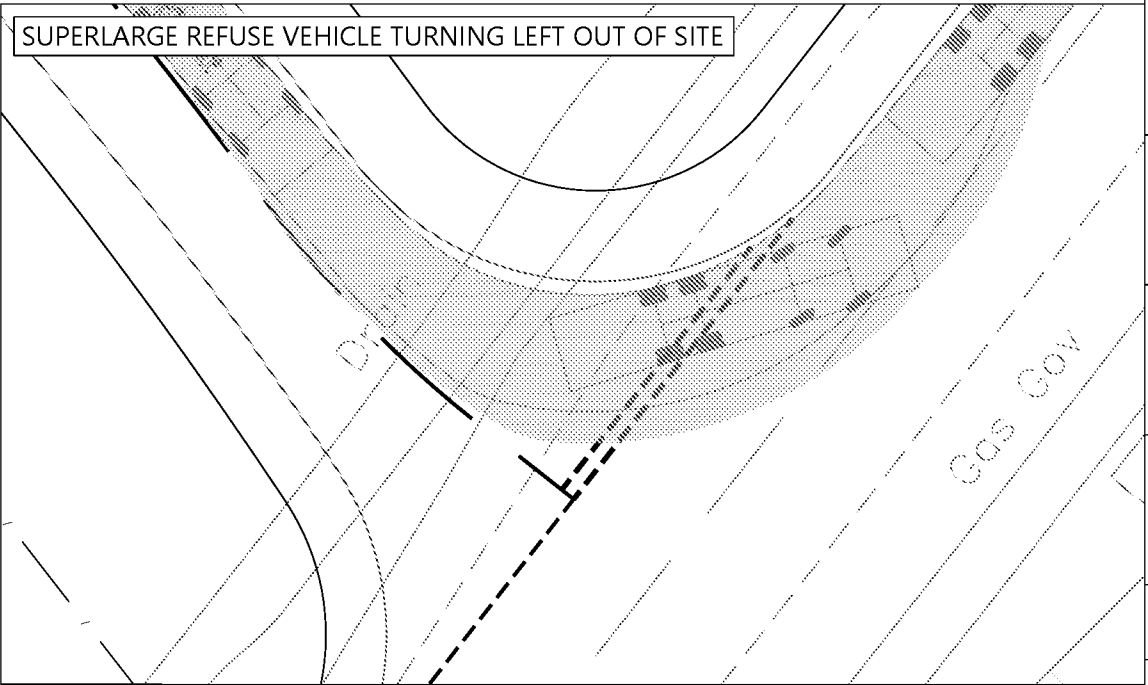
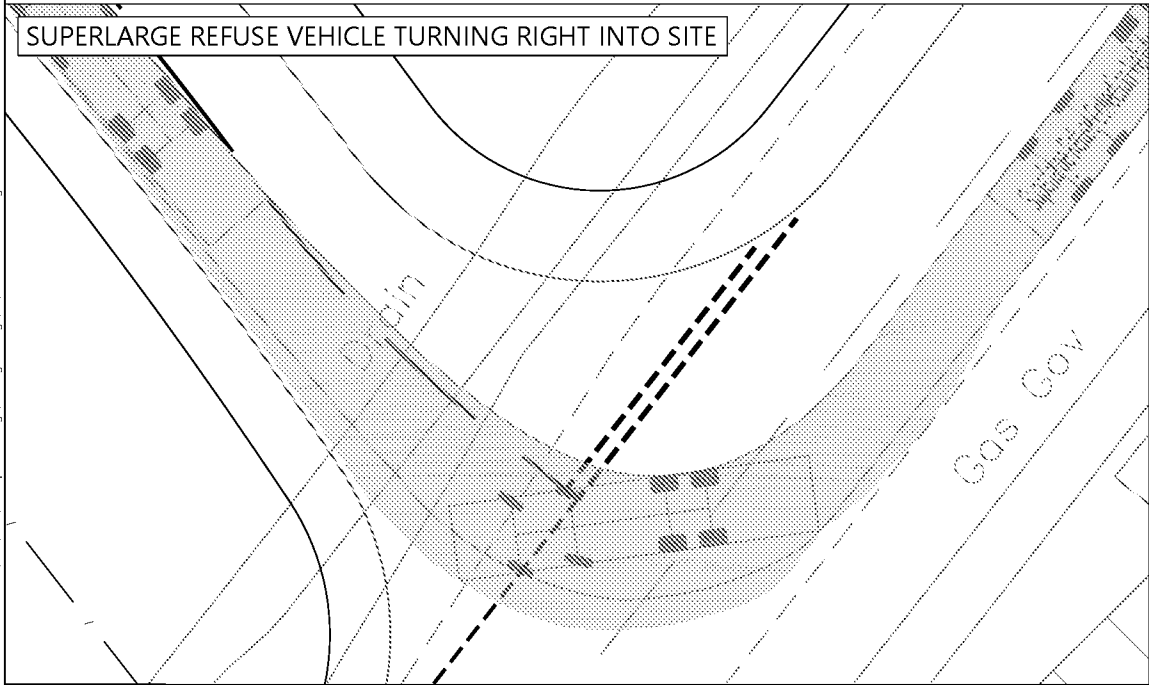
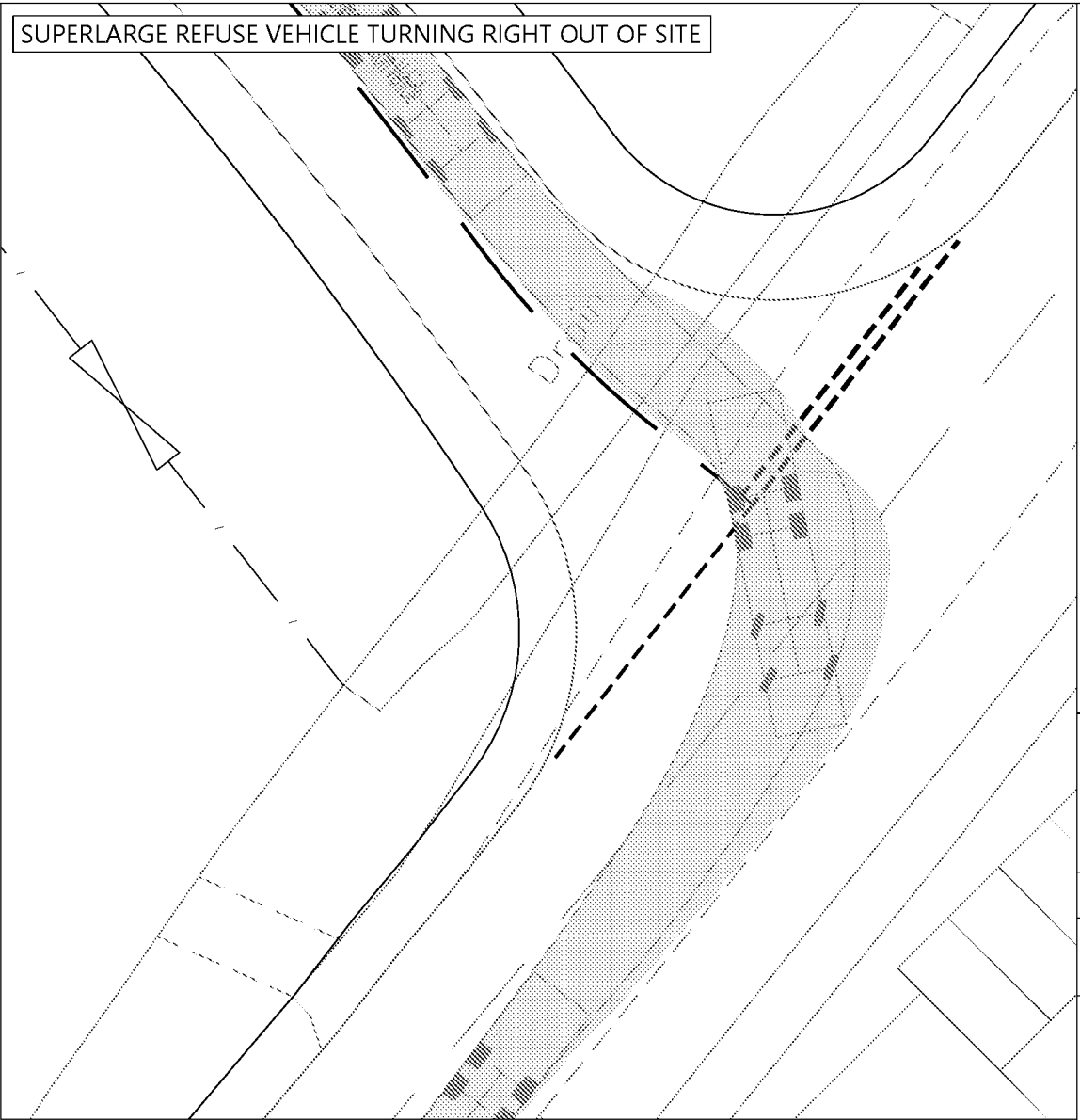
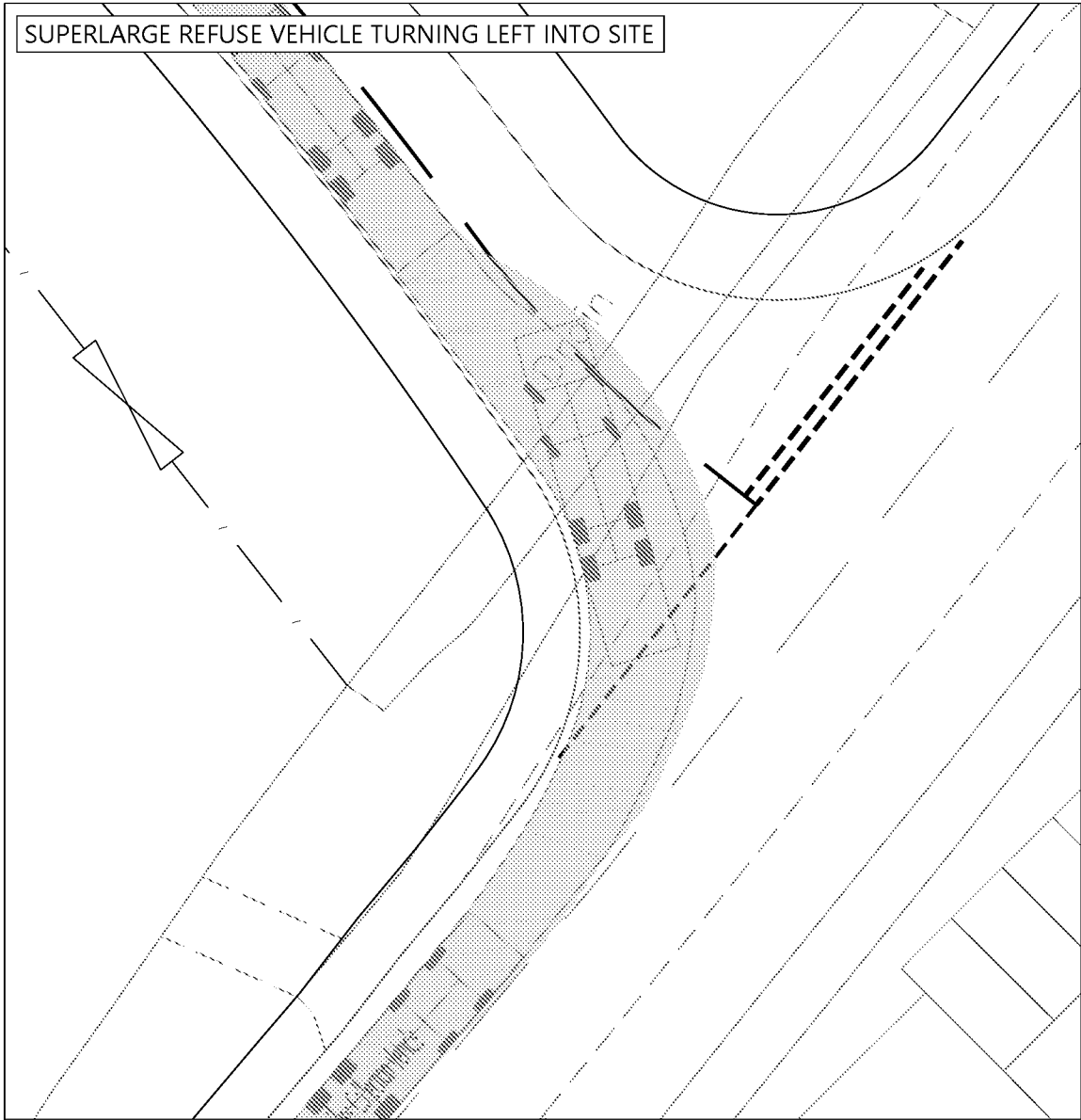
LANDFORM
ESTATES

Project
NORTH BERSTED, BOGNOR REGIS

Drawing Title
PLAN 4
CHALCRAFT NURSERY ACCESS

Drawing Status
FOR INFORMATION

Drawn AS	Designed PG	Date MAR 2015	Scale 1:1000	Size A3
Drawing No. 507-011	Rev H			



Superlarge Refuse Collection Vehicle	
Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.750m
Min Body Ground Clearance	0.300m
Track Width	2.490m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	10.800m

REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS:	FOR INFORMATION
---------	-----------------



Grove House, Lutyens Close, Chineham
Basingstoke, Hampshire, RG24 8AG
Tel: 01256 338640
www.i-transport.co.uk

TITLE:	SWEPT PATH ANALYSIS - SUPERLARGE REFUSE VEHICLE
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PROJECT:	LAND WEST OF BERSTED
----------	----------------------

CLIENT:	LANDFORM ESTATES
---------	------------------

DRAWN: JD	CHECKED: IN	APPROVED: DS
PROJECT No: ITB14224	SCALE @ A3: 1:250	DATE: 21.04.20

DRAWING No: ITB14224-GA-002	REV: -
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APPENDIX A. EMERGING MASTERPLAN



Key

- Site boundary
- Existing trees and woodland
- Proposed trees and woodland
- Indicative SUDs ponds
- Pedestrian/cycle links
- Residential
- Existing nursery retained and expanded to include further employment uses, farm shop, and cafe
- Key frontages
- Open space
- Sports pitches
- Allotments
- Key routes
- Sustrans cycle route

Land Budget:

Residential	ha
R03	0.77
R04	1.95
R05	2.45
R06	1.58
R07	0.25
	7.00

Open Space	ha
Allotments	0.19
Outdoor Sports Facilities	1.05
Open Space	5.22
total open space	6.46

Access corridor 0.58 ha

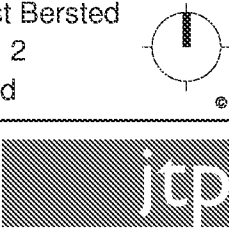
Site Boundary 14.04 ha

Dwellings	30 dph
Private 70%	147
Affordable 30%	63
Total	210

PLAN 3
February 2020

Chalcraft Lane, West Bersted
Potential Application 2
Landform Estates Ltd

Drawing No: 01304_SK_004
Scale @ A2: 1:2500 Rev B



APPENDIX B. DISTRIBUTION AND ASSIGNMENT MODEL

Table 3: Public Transport Use by Broad Destination
Percentage of Public Transport Use by Broad Destination

Broad Destination	% Car by Destination	Proportion by car	All Categories	Working from Home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other
Aldwick	58%	0.9%	33	0	0	0	2	0	0	19	4	5	3	0
Angmering	75%	0.7%	20	0	0	2	1	0	0	15	2	0	0	0
Arundel	82%	1.3%	33	0	0	0	1	0	0	27	4	0	1	0
Bognor Regis	56%	20.8%	782	0	0	1	56	7	5	439	87	75	111	1
Brighton	48%	0.6%	27	0	2	4	1	0	0	13	2	3	2	0
Chichester	76%	19.2%	534	0	0	6	48	2	10	405	40	17	3	3
Crawley	86%	1.1%	28	0	0	2	0	0	0	24	0	0	2	0
Fareham	85%	0.5%	13	0	0	0	1	0	0	11	1	0	0	0
Feilpham	70%	3.0%	92	0	0	1	3	0	3	64	5	12	4	0
Fishbourne	77%	1.4%	39	0	0	2	2	0	0	30	4	1	0	0
Ford	89%	1.9%	45	0	0	2	0	0	0	40	3	0	0	0
Havant	88%	1.7%	40	0	0	1	0	0	2	35	2	0	0	0
Horsham	96%	2.6%	56	0	0	0	0	0	0	54	2	0	0	0
Littlehampton	80%	5.0%	132	0	0	1	7	1	2	105	11	2	3	0
London	57%	1.2%	44	0	0	16	0	0	0	25	1	0	2	0
Midhurst	85%	0.5%	13	0	0	0	1	0	0	11	1	0	0	0
North Bersted	49%	4.9%	213	0	0	0	1	1	1	104	11	36	59	0
North Mundham	79%	7.0%	187	0	0	0	1	0	4	148	28	4	2	0
Other - East	88%	1.4%	33	0	0	1	1	0	0	29	0	1	1	0
Other - North	90%	2.5%	59	0	0	0	2	0	0	53	0	2	2	0
Other - West	82%	0.9%	22	0	0	2	0	0	1	18	1	0	0	0
Pagham	73%	2.6%	74	0	0	0	1	0	1	54	12	6	0	0
Portsmouth	84%	2.3%	58	0	0	4	0	0	0	49	4	1	0	0
Selsey	68%	1.1%	34	0	0	0	3	0	2	23	6	0	0	0
Shoreham-by-Sea	88%	0.7%	16	0	1	0	0	0	1	14	0	0	0	0
Southbourne	80%	1.6%	41	0	0	0	0	0	1	33	6	0	0	1
West Wittering	84%	2.3%	58	0	0	0	2	0	0	49	7	0	0	0
Westergate / East	78%	2.7%	73	0	0	5	2	1	1	57	3	1	3	0
Westhampnett	79%	3.8%	102	0	0	0	4	0	2	81	12	2	1	0
Worthing (north)	81%	1.4%	37	0	0	0	0	0	1	30	3	2	1	0
Worthing (south)	75%	2.3%	65	0	0	6	3	0	1	49	3	1	2	0
Total	-	100%	3003	0	3	56	143	12	38	2108	265	171	202	5

16. Table 10: Proportion of District Council routes by proportion of car
Table 10: Proportion of District Council routes by proportion of car

Destination	Total		Proportion of route		By Route		Route 1	Route 2	Route 3	Route 4	Route 5	Route 6
	Proportion of Car	Driving + Car	Proportion of route	Proportion of Car	Proportion of Car	Proportion of Car						
Aldwick	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Angmering	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Arundel	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Bognor Regis	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Brighton	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Chichester	30.3	30.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Crawley	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Fareham	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Felpham	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Fishbourne	30.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Ford	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Havant	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Horsham	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Littichampton	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
London	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Midhurst	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
North Bersted	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
North Mundham	10.3	30.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Other - East	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Other - North	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Other - West	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Pagham	10.3	30.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Portsmouth	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Selsey	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Shoreham-by-Sea	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Southbourne	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
West Wittering	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Westergate / Eastergate	10.3	30.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Westhampnett	10.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Worthing north	30.3	3.0	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Worthing south	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
Total	30.3	30.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3

Route 1 (Site Areas)	Proportion of Car	45%
/DANLH[L]L[L] b	68.8%	30.9%
/DANLH[L]L[L] {	31.2%	14.0%
Total	100%	45%

Route 2	Proportion of Car	45%
/DANLH[L]L[L] b	68.8%	30.9%
/DANLH[L]L[L] {	20.3%	9.1%
° a rLp[5]L[L] {	10.9%	4.9%
Total	100%	45%

Route 3	Proportion of Car	45%
. tZzZz	10.4%	4.7%
. tZzZz	0.5%	0.2%
. tZzZz b	35.9%	16.1%
/rLp[5]L[L] {	10.4%	4.7%
/DANLH[L]L[L] b	3.0%	1.4%
I rZLp[5]L[L] {	1.5%	0.7%
[DANLH[L]L[L] b	17.3%	7.8%
[DANLH[L]L[L] {	1.5%	0.7%
b . rLp[5]L[L] b	19.4%	8.7%
Total	100%	45%

Route 4	Proportion of Car	45%
! tZzZz b	31.0%	13.9%
! tZzZz b	1.9%	0.9%
DANLH[L]L[L] b	10.4%	4.7%
I rZLp[5]L[L] {	3.0%	1.4%
[b	34.2%	15.3%
wXp[5]L[L] b	19.4%	8.7%
Total	100%	45%

Route 5	Proportion of Car	45%
/DANLH[L]L[L] {	10.4%	4.7%
DANLH[L]L[L] b	1.9%	0.9%
[b	87.7%	39.4%
Total	100%	45%

Route 6	Proportion of Car	45%
LIN	100.0%	44.9%
Total	100%	45%

Location	Route 1	Route 2	Route 3	Route 4	Route 5	Route 6	Time (minutes)	Average Time (minutes)	2011 Census Total Population	P/T	P/T x 2	% of Total	Car Driver mode split		% of Car Driver	% By Route	% of Car Driver
Aldwick	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road S	Aldwick Road S	Gossamer Lane W	LIN	5	6	11,282	2051	373	24.7%	57.6%	14.2%	23.7%	50%	11.9%
	Chalcraft Lane S	W Meads Drive S	B2166 W	Aldwick Road S	Gossamer Lane W	LIN	6									50%	11.9%
Angmering Arundel	Chalcraft Lane N	Chalcraft Lane N	N Bersted Street N	Rowan Way E	LIN	LIN	35	35	7,614	218	6	0.4%	75.0%	0.3%	0.5%	100%	0.5%
	Chalcraft Lane N	Chalcraft Lane N	N Bersted Street N	Rowan Way E	LIN	LIN	28	28	3,475	124	4	0.3%	81.8%	0.2%	0.4%	100%	0.4%
Bognor Regis	Chalcraft Lane S	W Meads Drive S	B2166 S	LIN	LIN	LIN	8	9	24,064	2674	297	19.7%	65.2%	12.8%	21.4%	50%	10.7%
	Chalcraft Lane N	Chalcraft Lane N	Central Avenue S	Greencourt Drive S	Collier Avenue S	LIN	10									50%	10.7%
Chichester	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	26	26	31,654	1217	47	3.1%	75.8%	2.4%	3.9%	50%	2.0%
	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road N	LIN	LIN	LIN	26									50%	2.0%
Feipham	Chalcraft Lane N	Chalcraft Lane N	Chichester Road S	Hotham Way S	LIN	LIN	14	14	9,746	696	50	3.3%	69.6%	2.3%	3.8%	100%	3.8%
Fishbourne	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	26	25	2325	93	4	0.2%	76.9%	0.2%	0.3%	50%	0.2%
	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road N	LIN	LIN	LIN	24									50%	0.2%
Ford	Chalcraft Lane N	Chalcraft Lane N	N Bersted Street N	Rowan Way E	LIN	LIN	22	22	12731	579	26	1.7%	88.9%	1.5%	2.6%	100%	2.6%
Havant	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	40	40	8882	222	6	0.4%	87.5%	0.3%	0.5%	100%	0.5%
Littlehampton	Chalcraft Lane N	Chalcraft Lane N	N Bersted Street N	Rowan Way E	LIN	LIN	24	24	27795	1158	48	3.2%	79.5%	2.5%	4.2%	100%	4.2%
North Bersted	Chalcraft Lane N	Chalcraft Lane N	B2259 N	LIN	LIN	LIN	4	4	8496	2124	531	35.1%	48.8%	17.2%	28.7%	100%	28.7%
North Mundham	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	24	19	1201	63	3	0.2%	79.1%	0.2%	0.3%	60%	0.2%
	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road N	LIN	LIN	LIN	14									40%	0.1%
Pagham	Chalcraft Lane S	Chalcraft Lane S	Hewarts Lane S	LIN	LIN	LIN	10	10	5941	594	59	3.9%	73.0%	2.9%	4.8%	60%	2.9%
	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road S	Aldwick Road S	Gossamer Lane W	LIN	10									40%	1.9%
Selsey	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road N	LIN	LIN	LIN	35	35	10737	307	9	0.6%	67.6%	0.4%	0.7%	100%	0.7%
Southbourne	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	35	35	6265	179	5	0.3%	80.5%	0.3%	0.5%	100%	0.5%
West Wittering	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	35	33	2700	83	3	0.2%	84.5%	0.1%	0.2%	50%	0.1%
	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road N	LIN	LIN	LIN	30									50%	0.1%
Westergate / Eastergate	Chalcraft Lane N	Chalcraft Lane N	N Bersted Street N	Rowan Way E	LIN	LIN	16	16	9783	611	38	2.5%	78.1%	2.0%	3.3%	70%	2.3%
	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	16									30%	1.0%
Westhampnett	Chalcraft Lane N	Chalcraft Lane N	B2259 N	A259 N	LIN	LIN	24	24	709	30	1	0.1%	79.4%	0.1%	0.1%	50%	0.1%
	Chalcraft Lane S	Chalcraft Lane S	Lower Bognor Road N	LIN	LIN	LIN	24									50%	0.1%
Total									87,835	13,023	1,511	100%			100%		100%

Route 1 (Site Access)	Proportion of Cars	55%
/DIAI13[LI b	57.7%	31.8%
/DIAI13[LI {	42.3%	23.3%
Total	100%	55%

Route 2	Proportion of Cars	55%
/DIAI13[LI b	57.7%	31.8%
/DIAI13[LI {	19.7%	10.9%
° a rLp1510t {	22.6%	12.4%
Total	100%	55%

Route 3	Proportion of Cars	55%
. r333	10.7%	5.9%
. r332	11.9%	6.5%
. r33 b	33.1%	18.2%
/rI113 11I5 {	10.7%	5.9%
/DIAI13[LI b {	3.8%	2.1%
I r2111[LI {	2.9%	1.6%
[IXr1. IXIIXwXp b	3.1%	1.7%
[IXr1. IXIIXwXp {	13.8%	7.6%
b . r11ro {11r1 b	10.1%	5.5%
Total	100%	55%

Route 4	Proportion of Cars	55%
! r3 b	4.5%	2.5%
! r33Awdp {	25.7%	14.1%
D1r11IX11510t {	10.7%	5.9%
I IXDI ° L=	3.8%	2.1%
[lb	45.3%	25.0%
wIX111° L=9	10.1%	5.5%
Total	100%	55%

Route 5	Proportion of Cars	55%
/IX111 11I5 {	10.7%	5.9%
DIX11I r1[LI °	25.7%	14.1%
[lb	63.6%	35.1%
Total	100%	55%

Route 6	Proportion of Cars	55%
LIN	100.0%	55.1%
Total	100%	55%

Route 1 (Site Access)	JTW 45%	Gravity 55%	Total
/D\A\U\ [U\ b	30.9%	31.8%	62.7%
/D\A\U\ [U\ {	14.0%	23.3%	37.3%
Total	44.9%	55.1%	100.0%

Route 2	JTW 45%	Gravity 55%	Total
/D\A\U\ [U\ b	30.9%	31.8%	62.7%
/D\A\U\ [U\ {	9.1%	10.9%	20.0%
° a T\p\5\U\ {	4.9%	12.4%	17.3%
Total	45%	55%	100.0%

Route 3	JTW 45%	Gravity 55%	Total
. \Z\Z\	4.7%	5.9%	10.6%
. \Z\Z\	0.2%	6.5%	6.7%
. \Z\ b	16.1%	18.2%	34.4%
/T\U\ \U\ {	4.7%	5.9%	10.6%
/D\U\ \U\ \U\ {	1.4%	2.1%	3.5%
I T\U\ [U\ {	0.7%	1.6%	2.3%
[IX\T\ IX\U\ \U\ b	7.8%	1.7%	9.5%
[IX\T\ IX\U\ \U\ {	0.7%	7.6%	8.3%
b. T\U\ o\ \U\ b	8.7%	5.5%	14.3%
Total	45%	55%	100.0%

Route 4	JTW 45%	Gravity 55%	Total
! \Z\ b	13.9%	2.5%	16.4%
! \Z\ \U\ \U\ {	0.9%	14.1%	15.0%
D\T\ U\IX\5\U\ {	4.7%	5.9%	10.6%
I IX\U\ ° U\	1.4%	2.1%	3.5%
[U\	15.3%	25.0%	40.3%
\U\U\ ° U\9	8.7%	5.5%	14.3%
Total	45%	55%	100.0%

Route 5	JTW 45%	Gravity 55%	Total
/IX\U\! \U\ {	4.7%	5.9%	10.6%
DIX\U\I\T\ [U\ °	0.9%	14.1%	15.0%
[U\	39.4%	35.1%	74.4%
Total	45%	55%	100.0%

Route 6	JTW 45%	Gravity 55%	Total
LIN	44.9%	55.1%	100.0%
Total	0.0%	0.0%	100.0%

	就業 Trips %	通勤 Trips %	% All Trips Combined
Aldwick	100	300	300
Angmering	100	100	100
Arundel	100	100	100
Bognor Regis	50	300	100
Brighton	100	100	100
Chichester	50	100	300
Crawley	100	100	100
Fareham	100	100	100
Felpham	300	100	100
Fishbourne	100	100	100
Ford	100	300	100
Havant	100	100	300
Horsham	300	100	300
Littlehampton	100	100	100
London	100	100	100
Midhurst	100	100	100
North Bersted	100	300	300
North Mundham	100	100	100
Other - East	100	100	100
Other - North	300	100	300
Other - West	100	100	100
Pagham	300	100	100
Portsmouth	300	100	300
Selsey	100	100	100
Shoreham-by-Sea	100	100	100
Southbourne	100	100	300
West Wittering	300	100	300
Westergate / Eastergate	300	300	100
Westhampnett	300	100	300
Worthing north	100	100	100
Worthing south	300	100	300
WIXU	100	100	300

