

**Land South of
Town House Road
Costessey**

**Transport & Highways
Access Appraisal**

CCE/T331/REP

July 2016

For Taylor Wimpey

Document Review Sheet

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- A. TRICS Output Data

1.0 Introduction

1.1 Background

- 1.1.1 Cannon Consulting Engineers have been commissioned by Taylor Wimpey to undertake a transport and highways access appraisal in relation to the promotion of land south of Town House Road, Costessey, South Norfolk. The land is being promoted for an allocation for residential development within the emerging New Greater Norwich Local Plan Call for Sites.
- 1.1.2 The site extends to approximately 3.8 hectares in total and bordered to the north by Town House Road and by residential development at Lime Tree Avenue to the east. The location of the site is shown on **Figure 1**.
- 1.1.3 This appraisal considers highway access and transport connectivity to provide consideration of the sustainability of the proposed development location.
- 1.1.4 For the purposes of this assessment it is assumed that up to 100 residential dwellings could be accommodated on the site.
- 1.1.5 The key issues addressed in this report are as summarised as follows:
- The site and existing conditions – considerations of the sustainable opportunities that exist to reduce the dependence on travel by private vehicles;
 - Access – consideration of the physical means of direct highway access to the site;
 - Development Trip Generation – consideration of the number of trips likely to be generated by the development by all modes of transport considering Census data;
 - Summary and Conclusion – advocating the site as being suitable and available for residential development.

2.0 Site Location & Existing Conditions

2.1 Introduction

2.1.1 This section outlines the local walking and cycling conditions, public transport and the local highway network in the vicinity of the site.

2.2 Site Location

2.2.1 **Figure 1** shows the location of the site within the eastern area of Costessey, to the northwest of Norwich, and is currently used as pasture. The site is within the planning jurisdiction of South Norfolk Council, with Norfolk County Council as the Local Highway Authority.

2.2.2 The site extends to approximately 3.8 hectares in total and boarded to the north by Town House Road and by residential development at Lime Tree Avenue to the east

2.2.3 The transport accessibility of the development site has been reviewed in the following section, taking account of the available transport infrastructure, relative to the site location.

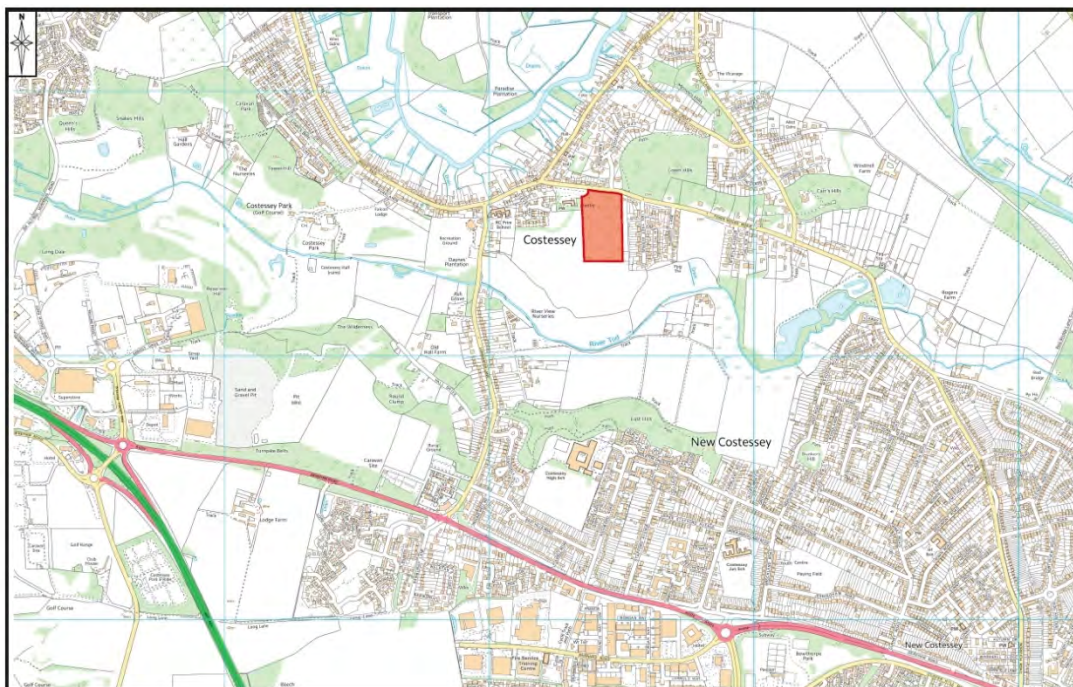


Figure 1: Site Location

2.3 Local Highway Network

2.3.1 **Figure 2** shows the key links and junctions on the local highway network within the vicinity of the site.

2.3.2 Existing access to the site is provided via a gated unpaved track from Town House Road.

- 2.3.3 To the west of the site Town House Road forms a mini-roundabout junction with The Street and West End Road which provides access to Drayton and Taverham to the north of the site, via Costessey Lane and Taverham Lane. West End is traffic calmed as it passes through the village centre and leads west to its junction with Longwater Lane, which is a single carriageway road that lies north-south between West End and the A1074 Dereham Road, where it forms a signalised junction.
- 2.3.4 To the east of the site Town House Road becomes Norwich Road at the bridge over the River Tud. Norwich Road is subject to a 30mph speed limit and leads south to its signalised junction with the A1074 Dereham Road.
- 2.3.5 The A1074 Dereham Road provides a direct link into Norwich City Centre to the east and to the A47(T) to the west. At its dumbbell roundabout junction with the A47(T) it also provides access to the Longwater Retail Park via William Frost Way, and towards employment areas to the south of the A47(T) via Long Lane.

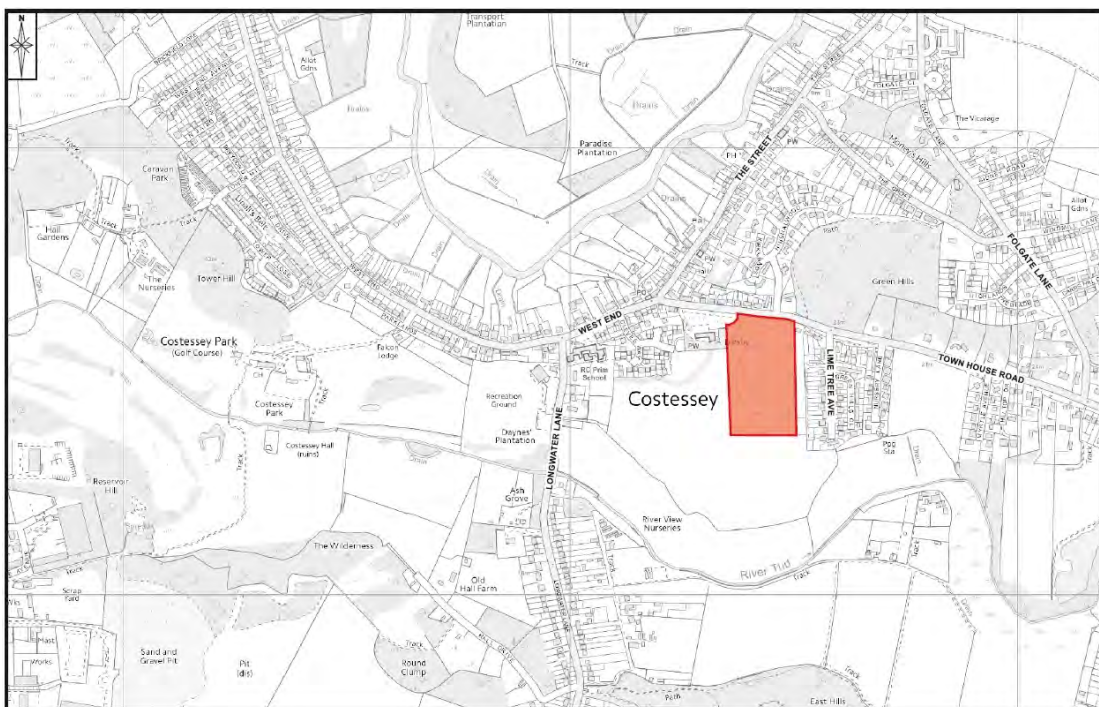


Figure 2: Site Location & Local Highway Network

2.4 Pedestrian and Cycle Facilities

- 2.4.1 A footway is located along northern side of Town House Road, providing a link between Costessey and New Costessey to the south-east. The existing footway is typically 1.0 metres wide in the vicinity of the site. To west of the site at the mini-roundabout junction with The Street and West End footway provision is provided along both sides of the carriageway.

2.4.2 There are no designated cycle facilities on Town House Road within the vicinity of the site. However, the topography of the carriageway lends itself to facilitate cyclists on road. Town House Road and Norwich Road are designated as local cycle routes in the Norwich Area Cycling Map, connecting to the Marriott's Way segregated cycle route which lies to the east, adjacent to the River Wensum and is classified as part of the National Cycle Network Route number 1. **Figure 3** shows these routes.

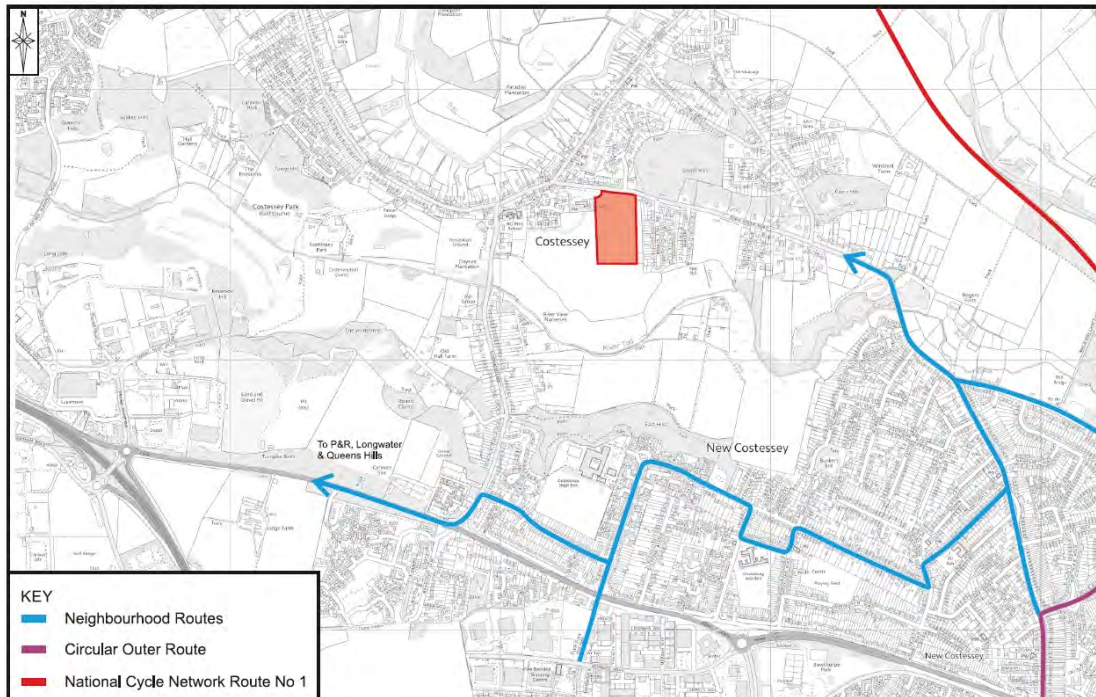


Figure 3: Local Cycle Routes

2.4.3 **Figure 4** shows the cordons for walking and cycle journeys from the site. This demonstrates that the site is within a 20 minute walking and 6 minute cycle ride to employment and retail destinations.

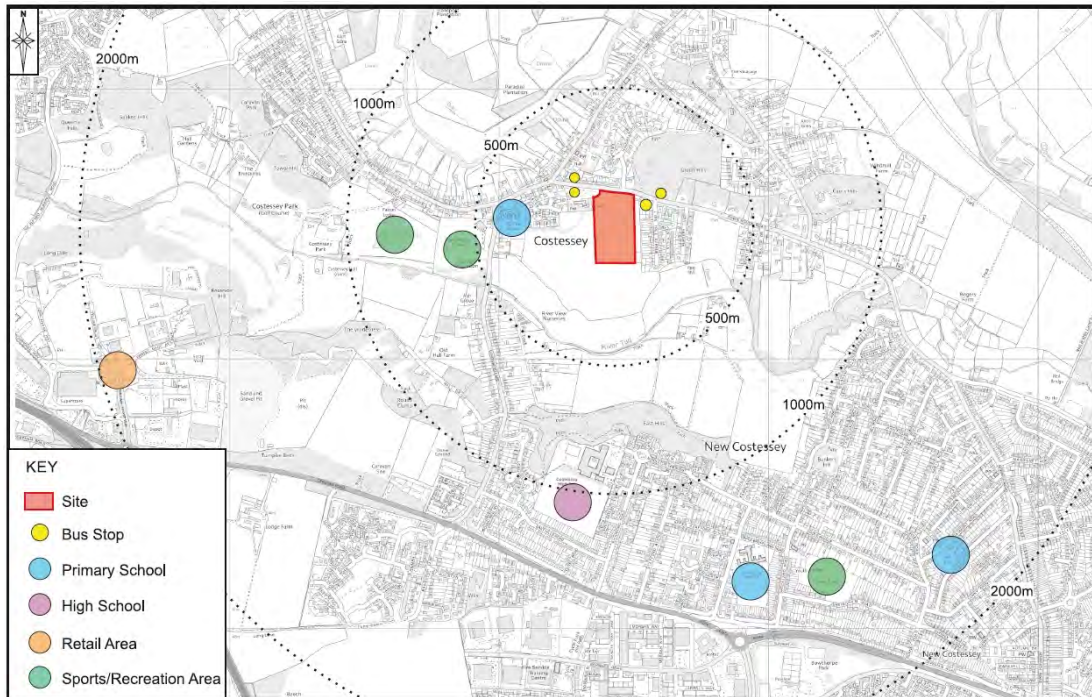


Figure 4: Local Facilities & Amenities

- 2.4.4 Guidance given by the Institution of Highways and Transportation (IHT) in their publication ‘Guidelines for Providing for Journeys on Foot’ (2000) suggests that in terms of commuting, walking to school and recreational journeys, walking distances of up to 2,000 metres can be considered. The desirable and acceptable walking distances are 500 metres and 1,000 metres respectively.
- 2.4.5 For non-commuter journeys the guidance suggests that walking distances of up to 1,200 metres can be considered, with the desirable and acceptable distances being 400 metres and 800 metres respectively.
- 2.4.6 **Table 2.1** summarises the walk journey times that can be considered; are acceptable; and those that are desirable.

IHT Guidelines	Distance		Walk Time	
	Commuting, Walking to School and Recreational	Other Non-Commuter Journeys	Commuting, Walking to School and Recreational	Other Non-Commuter Journeys
Desirable	500m	400m	6.25 mins	5 mins
Acceptable	1,000m	800m	12.5 mins	10 mins
Considered	2,000m	1,200m	25 mins	15 mins

Table 2.1: Walk Journey Times

Source: IHT ‘Guidelines for Providing for Journeys on Foot’ (2000)

2.4.7 Cycling is an important mode of travel at the local level, particularly in replacing short car trips under 5km. The site is located within 5km of New Costessey and the circular cycle routes of Norwich.

2.5 Bus Services

2.5.1 The site is served by a local bus service with the closest stops located either side of the site along Town House Road. Three of the four bus stops comprise a flag and pole facility. A bus shelter is located along the northern side of Town House Road east of the site. The shelter provides timetable information and seating. The stops are served bus number 23A which operates between Costessey and Norwich City Centre, providing a good link to a range of employment, leisure and retail services.

2.5.2 The Institution of Highways and Transportation document ‘Guidelines for Planning for Public Transport in Development’ states that “the maximum walking distance to a bus stop should not exceed 400m and preferably be no more than 300m” (IHT 1999). The whole of the site is accessible within a 300m walk of the stops along Town House Road and is therefore within accordance with this guidance. The bus services operating along Town House Road are summarised in **Table 2.2**.

Number	Route	Operator	Frequency
23A	New Costessey - Costessey – Norwich – Heartsease –Dussindale Park	First	Mon – Fri 2 per Hour Sat 2 per Hour Sun 1 per Hour

Table 2.2: Existing Bus Services

2.5.3 Service 23A provides a passenger journey time of approximately 20 minutes between Costessey and Norwich City Centre. **Figure 5** shows the route of the local bus services.

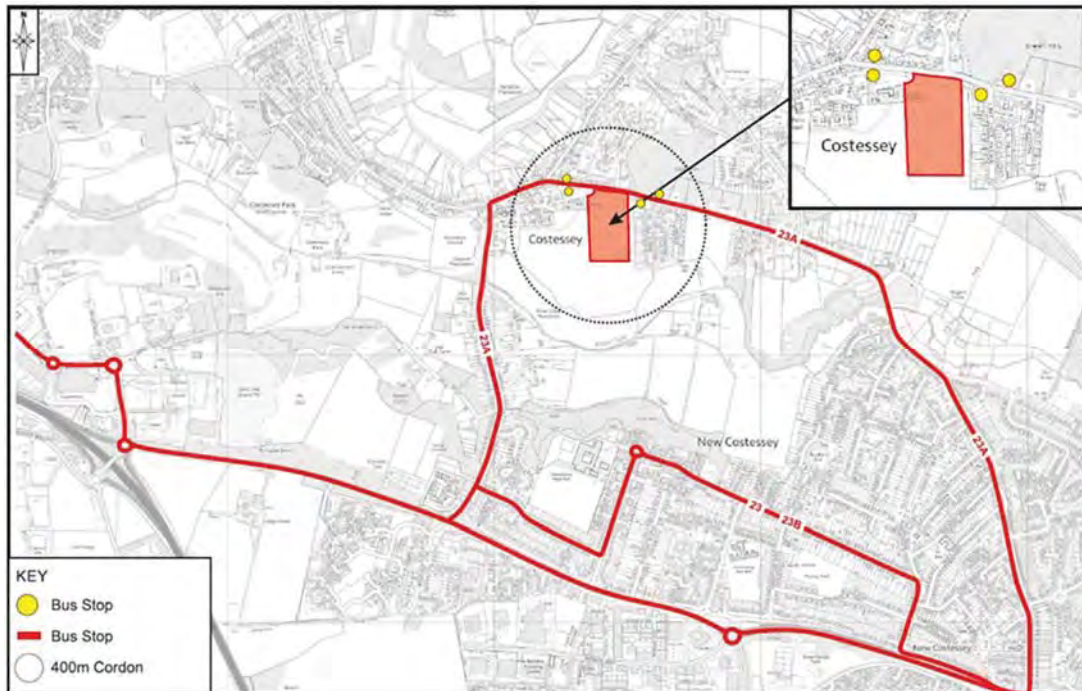


Figure 5: Local Bus Services

3.0 Access

3.1 Introduction

- 3.1.1 A review of the current design guidance concludes that it would be possible to serve a development of 100 units from a single point of access to the existing highway network, achievable from Town House Road.

3.2 Town House Road

- 3.2.1 The conceptual vehicular access arrangements from Town House Road are shown as **Option 1 Drawing T331/200** and **Option 2 Drawing T331/201**. The access options from Town House Road have been considered in the form of a simple priority T junctions. The required junction visibility splays and geometry can be achieved at the proposed point of access within maintainable land under the control of the Local Highway Authority and that under the control of the land owner.
- 3.2.2 Within the development pedestrian access would be provided along both sides of the internal estate road connecting with a new footpath along the southern side of Town House Road towards the east with the existing network adjacent to the Lime Tree Avenue residential estate. A footway connection along the site frontage towards the west.

3.3 Summary

- 3.3.1 The proposed access options has been designed to enable a logical connection with the existing network. Direct access onto Town House Road provides easy and direct connectivity into Costessey and the local bus service.
- 3.3.2 Subject to scoping discussions with the Local Highway Authority the potential point of access will need to be agreed and the necessary junction capacity of the proposed access arrangement will be assessed in a Transport Assessment to accompany any future planning application.

4.0 Development Trip Generation and Assignment

4.1 Introduction

4.1.1 In order to assess the impact of trips associated with the development proposals the quantum of peak hour person and vehicular trips has been calculated. TRICS data has been used to establish likely trip rates and the potential number of trips that could be generated by approximately 100 dwellings on the site.

4.2 Development Trip Rates

4.2.1 To derive a realistic trip rate for the proposed development TRICS 2016(c) v7.2.4 database has been interrogated. Private housing sites in England have been considered. The relevant TRICS outputs are provided in **Appendix A** and the trip rates summarised in **Tables 4.1 and 4.2**.

Use	AM (0800-0900)		PM (1700-1800)	
	Arr	Dep	Arr	Dep
C3 Private Housing	0.212	0.694	0.500	0.252
Total 2-way	0.906		0.752	

Table 4.1: Total Person Trip Rates

Use	AM (0800-0900)		PM (1700-1800)	
	Arr	Dep	Arr	Dep
C3 Private Housing	0.146	0.342	0.286	0.163
Total 2-way	0.488		0.449	

Table 4.2: Vehicular Trip Rates

4.3 Development Trip Generation

4.3.1 Based on the trip rates in **Tables 4.1 and 4.2** the development trip generation has been calculated for the morning and evening peak hours and summarised in **Tables 4.3 and 4.4**.

Use	AM (0800-0900)		PM (1700-1800)	
	Arr	Dep	Arr	Dep
100 dwellings	21	69	50	25
Total two-way	90		75	

Table 4.3: Total People Trip Generation

Use	AM (0800-0900)		PM (1700-1800)	
	Arr	Dep	Arr	Dep
100 dwellings	15	34	29	16
Total two-way	49		45	

Table 4.4: Vehicular Trip Generation

4.3.2 During the AM peak 15 and 34 vehicles are expected to arrive and depart the site respectively. A total of 29 arriving vehicles and 16 departing are expected during the PM peak hour.

4.4 Trip Assignment

Workplace population

4.4.1 The 2011 Census Data for travel to work was interrogated to determine travel and transport patterns for current residents in Costessey. The 2011 Census data is disaggregated into statistical regions for which the Middle Layer Super Output Area (MSOA) South Norfolk 001 encompasses Costessey. The area also encompasses New Costessey and some rural areas surrounding Costessey. For the purpose of this study it is considered this data is appropriate to use to determine likely distributions of traffic to and from the proposed site.

4.4.2 The South Norfolk 001 MSOA data recorded some 12,463 people residing in the area with 6,604 people economically active. Some 543 of the economic workforce living in the MSOA currently travelling to work in the South Norfolk 001 area is 10% of the residents with 551 (10%) recorded as working from home.

Resident Population

- 4.4.3 The South Norfolk 001 MSOA data shows a containment of 10% of workers living and working within the area. Of the remaining residents living in the area, 17% work within the remainder of South Norfolk, 45% work in Norwich and 15% work in Broadland. The remaining 12% of residents work in other locations generally further afield and commute by car.

Destination Location	Total Number of People
Norwich	45%
South Norfolk	17%
South Norfolk 001	11%
Broadland	15%
Remaining	12%

Table 4.5: Main locations of employment for residents living within Costessey

4.5 Transport Modal Share, Assignment and Journey Purpose

Commuting and Business

- 4.5.1 The main destinations for employment of residents living in Costessey are Norwich (45%), South Norfolk (17%), Broadland (15%) and South Norfolk 001 itself (11%). The mode share assumptions for Business and Commuting trips to each of these areas have been based upon the 2011 Census Journey to Work (JTW) data. The mode share for the remaining 12% of journeys to work destinations other than the five identified above have been grouped together and their trip mode share applied accordingly. 'Working from home' has not been included in the analysis and therefore the remaining mode share percentages have been weighted to exclude this.

Destination	Bus	Car	Car Passenger	M/cycle	Cycle	Walk	Other
Norwich	15%	65%	7%	3%	6%	4%	0%
South Norfolk 001	2%	61%	5%	2%	9%	21%	0%
Remainder of South Norfolk	9%	76%	8%	1%	4%	2%	0%
Broadland	3%	84%	5%	3%	4%	1%	0%
Remaining	2%	88%	3%	1%	1%	2%	1%

Table 4.6: 2011 Census Journey to Work Mode Share for Costessey Residents

4.5.2 The proportion of residents who work locally and walk or cycle to work is high at 30%. The car mode share is higher amongst destinations further afield which is to be expected. The other column includes Taxi and train as a mode of transport and it is expected that any train journeys are reached by car in the first instance.

Education

4.5.3 Using information from the Census on primary and school age groups in South Norfolk 001 it has been estimated that 47% of Education related journeys in the AM peak would be travelling to primary schools and 53% of trips would be travelling to secondary.

4.5.4 It has assumed that only secondary trips will be on the network in the PM peak as the majority of primary school trips would be complete by the PM peak. Education Escort journeys are assumed to be related to journeys to primary school as pupils of secondary education age are more likely to travel without an escort. The distribution by mode share was derived on review of the NTS travel to school mode share.

Other

4.5.5 Personal Business, Retail and Visiting have been allocated to the 'Other' category. NTS data was used to establish the modal share for these trips.

4.5.6 **Table 4.7** summarises the trips by journey purpose and mode share generated by the proposed development of up to 100 dwellings.

Mode	Commuting & Business		Education		Other		Total	
	AM	PM	AM	PM	AM	PM	AM	PM
Walk	1	1	36	3	4	8	41	12
Car Driver	18	20	2	0	9	20	29	40
Car passenger	2	2	2	0	6	12	9	14
Bus	2	3	0	0	1	3	4	5
Cycle	1	1	2	0	0	0	4	2
Motorcycle	1	1	0	0	0	0	1	1
Other	0	0	0	0	1	2	1	2
Total	25	28	42	3	21	45	88	76

Table 4.7: Trips by Journey Purpose and Mode Share

4.5.7 **Table 4.7** shows that the total trip rates estimated by the reviewing the Census and NTS data are comparable to the trip rates and resultant trips estimated from the TRICS database which are 90 two way vehicles trips in the AM and 75 two way trips in the PM peak.

4.5.8 Therefore the vehicle trips estimated for the proposed development of 100 dwellings in the TRICS database represents a robust assessment in assessing any likely highway impacts. The multi-modal trip generation assessment allows us to consider the mode shift targets required by policy and the likely impact on trips for monitoring purposes once the development is implemented.

4.5.9 The TRICS output datasheets and the trip generation spreadsheet used to estimate the proposed development traffic is presented in **Appendix A**.

4.6 Summary

4.6.1 The Census data shows that some 10% of residents in the South Norfolk 001 MSOA also work within the area. The walk and cycle mode share already exhibited amongst residents to destinations within the area at 30%.

4.6.2 Journeys to work place destinations further afield are undertaken by car as would be expected in a larger rural catchment.

5.0 Summary and Conclusion

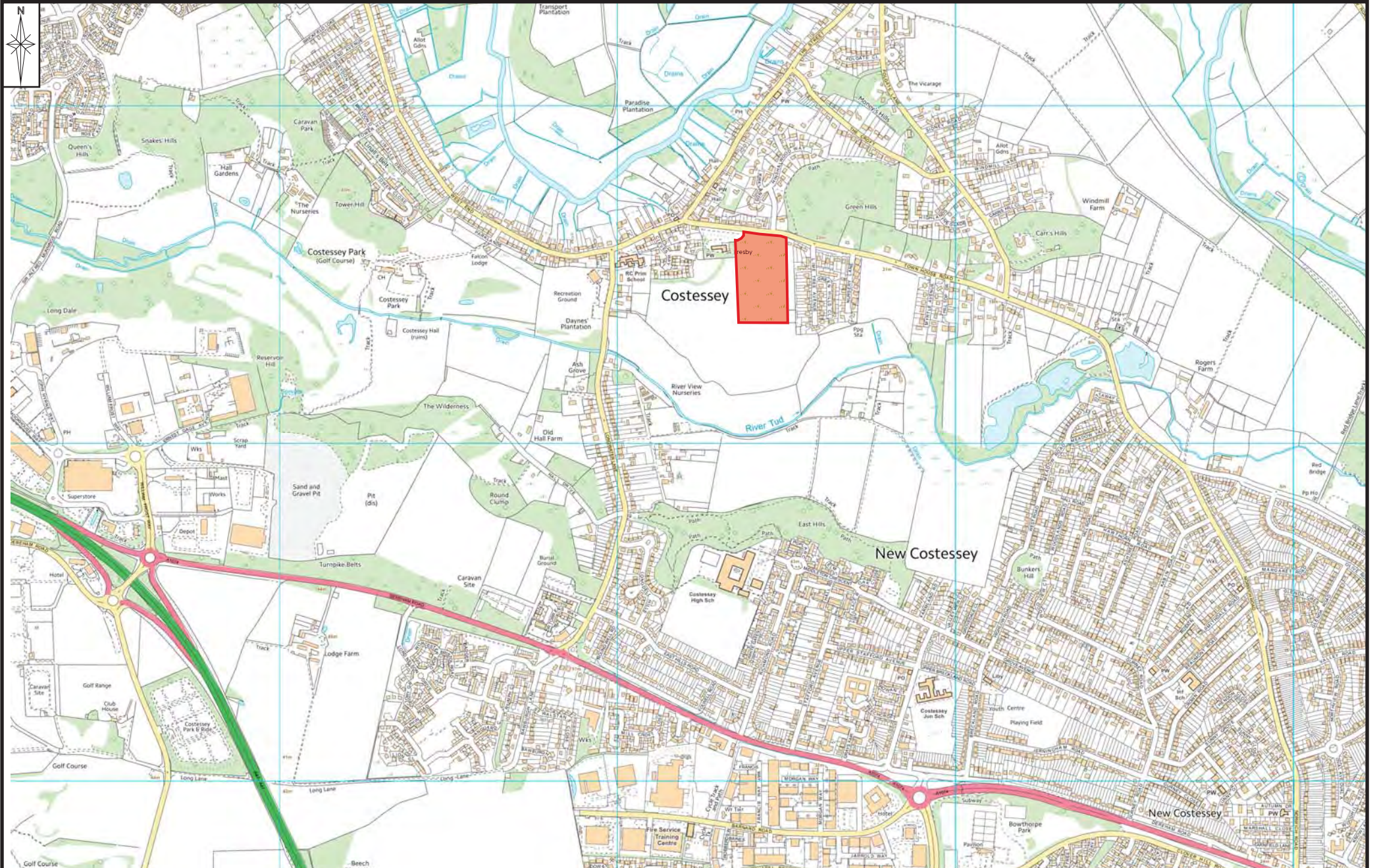
5.1 Summary

- 5.1.1 Cannon Consulting Engineers has been appointed by Taylor Wimpey to undertake a transport and highways access appraisal in relation to the promotion of land south of Town House Road, Costessey, South Norfolk.
- 5.1.2 The site is located on an existing public transport corridor providing regular services between Costessey and Norwich City Centre. There are existing bus stops and a shelter located within easy walking distance of the site.
- 5.1.3 The 2011 Census data shows that some 10% of residents in the South Norfolk 001 MSOA also work within the area. The walk and cycle mode share already exhibited amongst residents to destinations within the area at 30%.
- 5.1.4 The site as considered in this report is expected to accommodate up to 100 dwellings. This level of development could be expected to generate around 50 vehicle movements during both the AM and PM peak hours.
- 5.1.5 A review of the current design guidance concludes that it would be possible to serve a development of 100 units from a single point of access to the existing highway network, off Town House Road.
- 5.1.6 The proposed points of access located on Town House Road could be provided and meets the layout and visibility standards as laid out in current design guidelines.
- 5.1.7 New footpath links are achievable along the south side of Town House Road connecting the site with the existing networks in Costessey.

5.2 Conclusion

- 5.2.1 It is therefore concluded that there is potential to serve the identified site from Town House Road, by providing a safe, vehicular access and egress in accordance with current highway design standards.
- 5.2.2 The future masterplan for the site will seek to further enhance the sustainability of the site for residential development, by providing a continuous network of pedestrian and cycle routes throughout the site, to the adjoining residential areas in Costessey, and providing greater accessibility to both existing and proposed public transport services, shops, services and amenities within close proximity to the site.
- 5.2.3 Any future planning application submitted for the site will be subject to a comprehensive Transport Assessment to consider specific highway impacts and appropriate mitigation measures associated with the development.

Figures & Drawings



Scale: **NTS**
 Date: **24/06/2016**
 Drawn By: **AS**

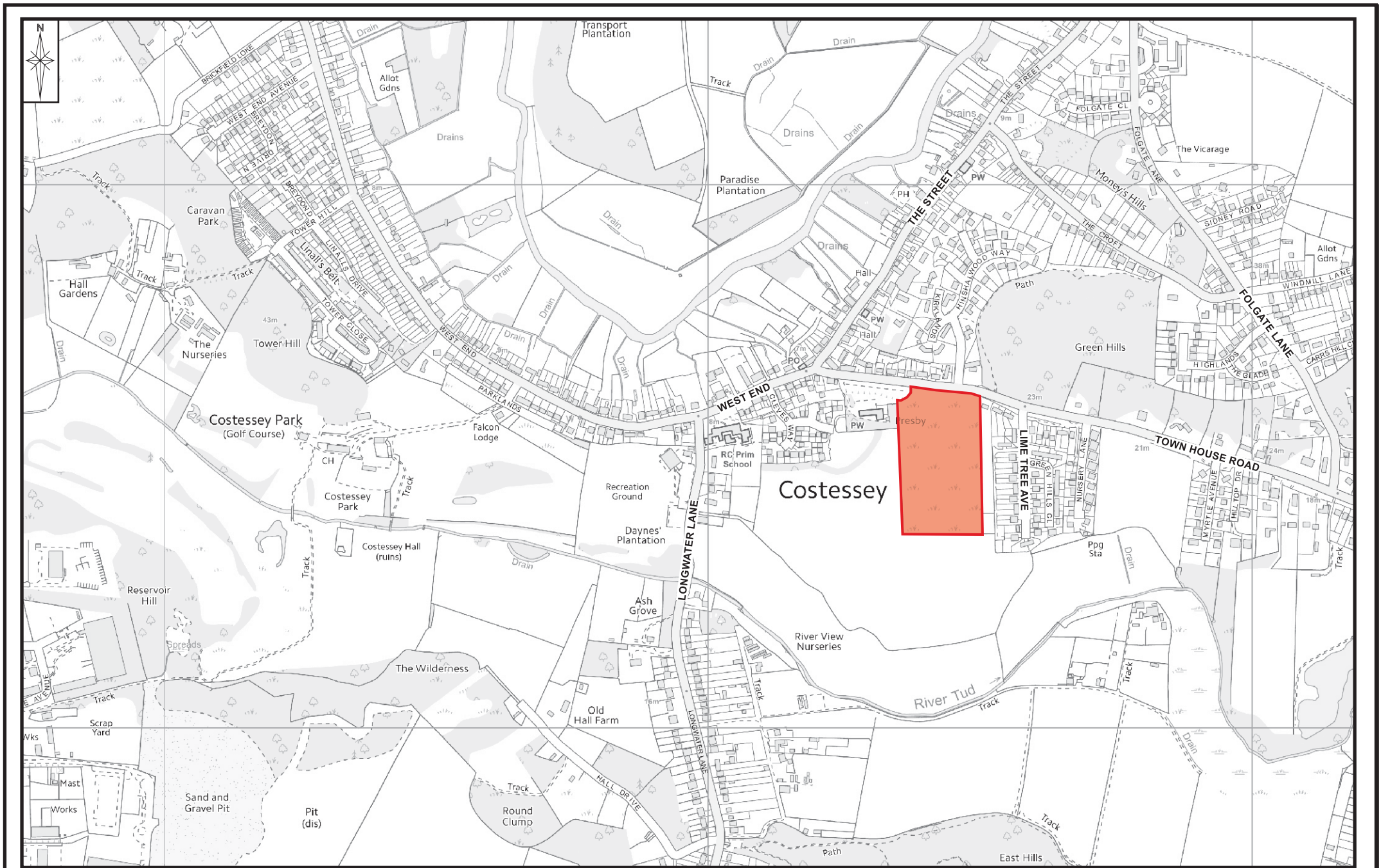
Job Title: **TOWN HOUSE ROAD, COSTESSEY**
 Client: **TAYLOR WIMPEY**

Drawing Title: **SITE LOCATION**
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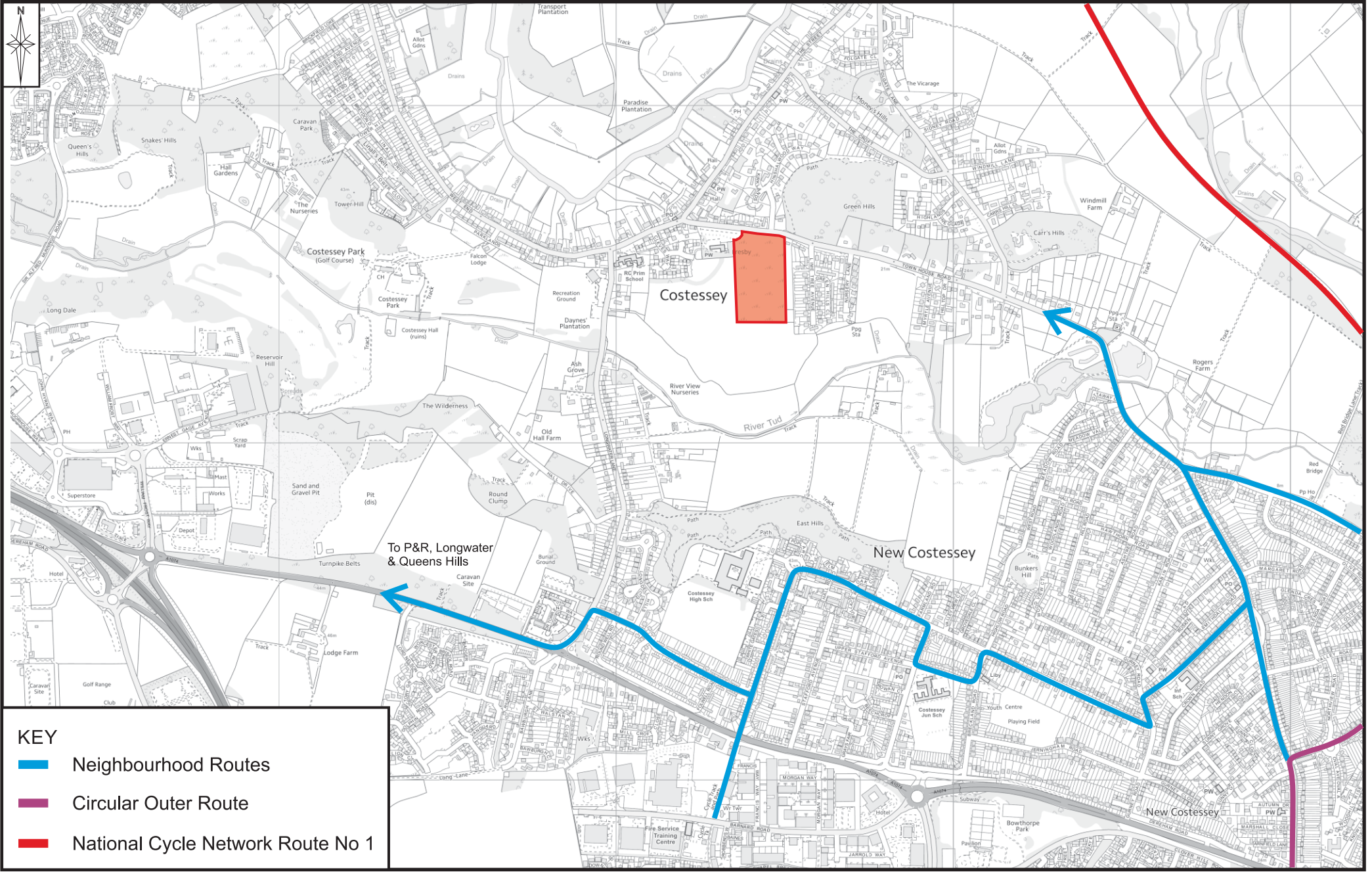
Cambridge House,
 Lanwades Business Park,
 Kentford, Newmarket, CB8 7PN
 Tel: 01638 555107
 Email: info@cannonce.co.uk
 Web www.cannonce.co.uk



Project No: **T331**
 Figure No: **FIGURE 1**



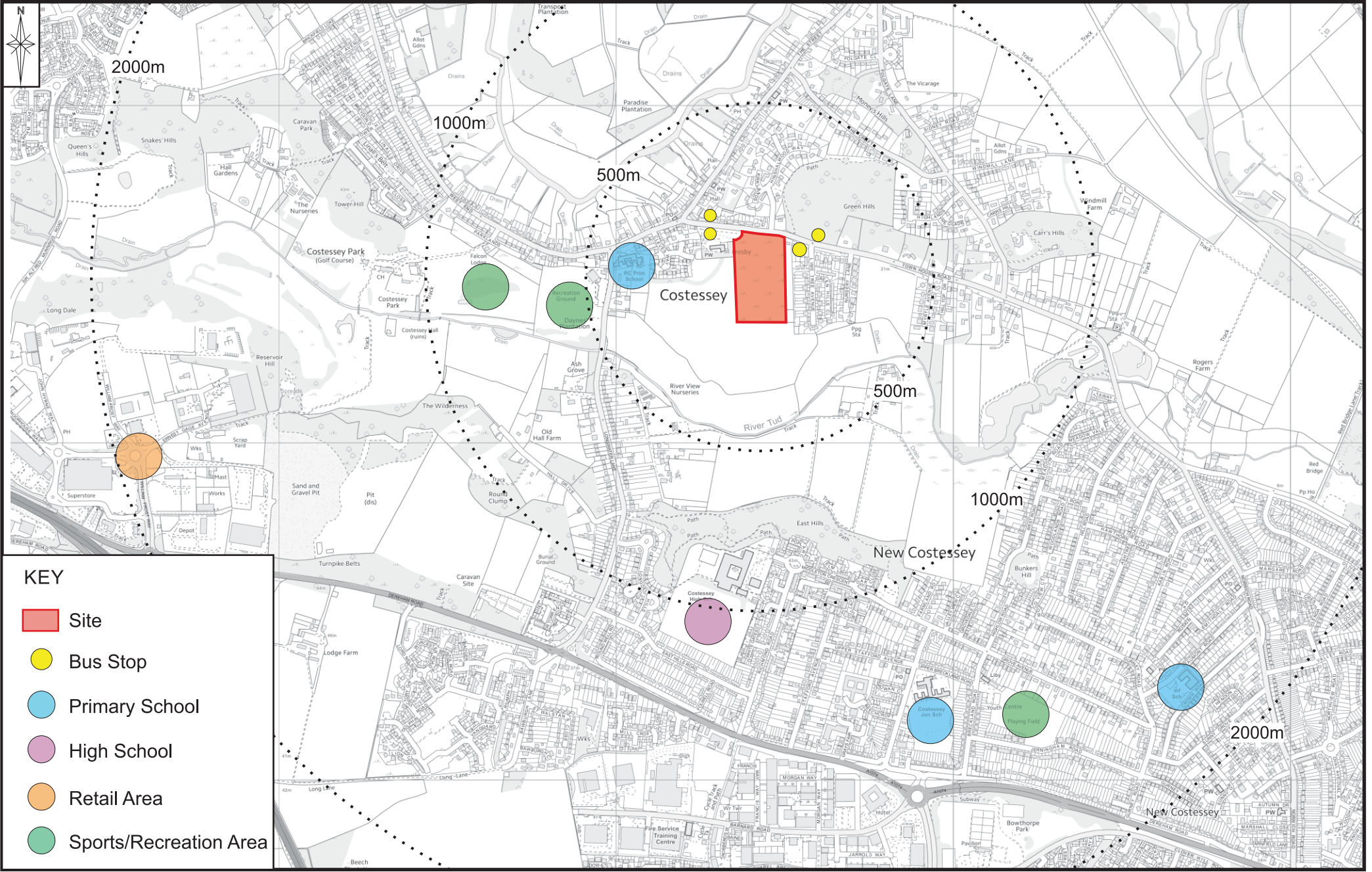
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Date: 24/06/2016	Client: TAYLOR WIMPEY	Reproduced from Promap by permission of Ordnance Survey® on behalf of The Controller of Her Majesty's Stationery Office. ©Crown copyright 2012. All rights reserved. Licence number 100020449.		Figure No: FIGURE 2
Drawn By: AS				









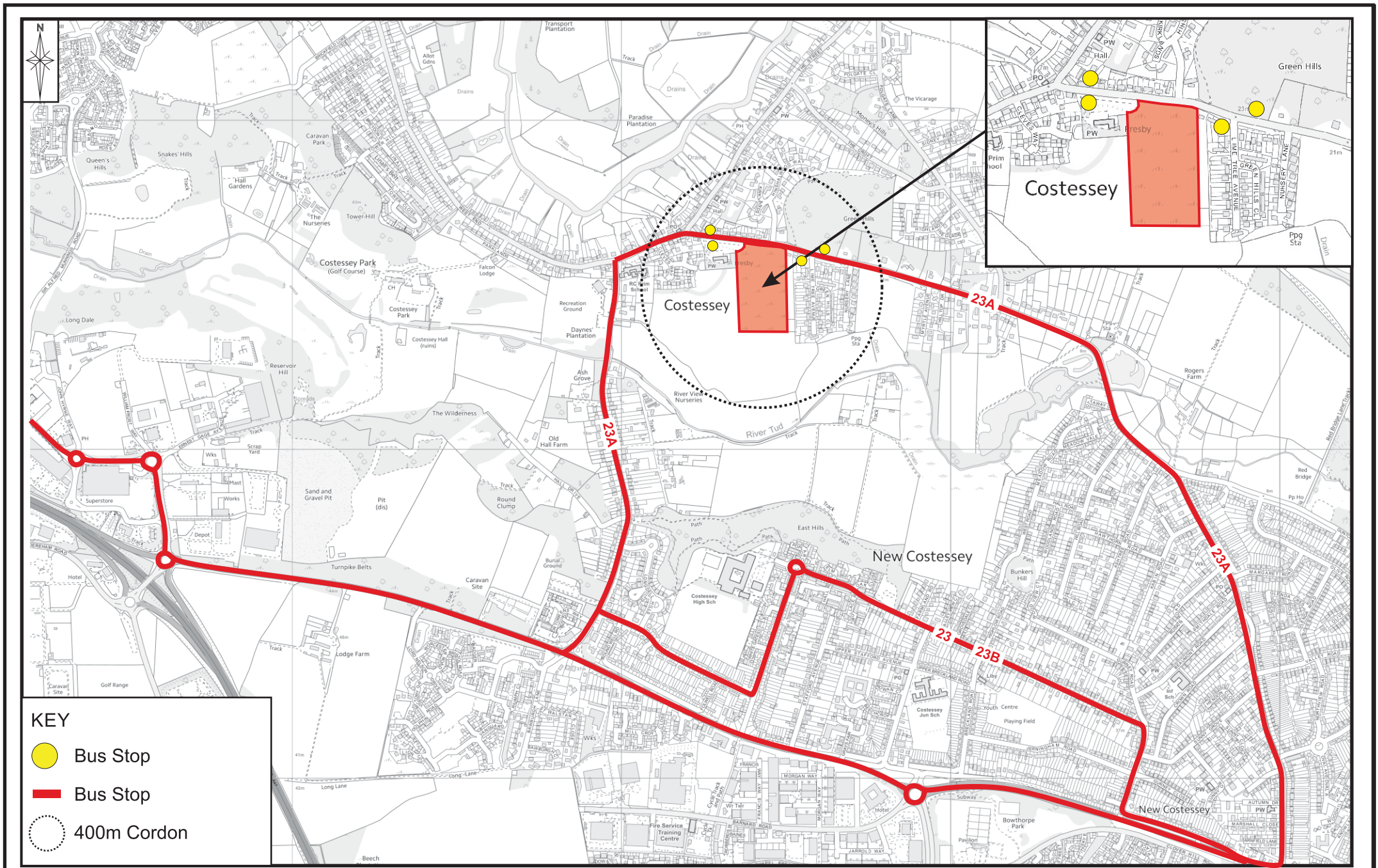
KEY

- Neighbourhood Routes
- Circular Outer Route
- National Cycle Network Route No 1

Scale: NTS	Job Title: TOWN HOUSE ROAD, COSTESSEY	Drawing Title: CYCLE ROUTES	Cambridge House, Lanwades Business Park, Kentford, Newmarket, CB8 7PN Tel: 01638 555107 Email: info@cannonce.co.uk Web www.cannonce.co.uk	Project No: T331
Date: 24/06/2016	Client: TAYLOR WIMPEY	Reproduced from Promap by permission of Ordnance Survey® on behalf of The Controller of Her Majesty's Stationery Office. ©Crown copyright 2012. All rights reserved. Licence number 100020449.	<p>CANNON CONSULTING ENGINEERS Highways, Transport & Infrastructure Planning</p>	Figure No: FIGURE 3
Drawn By: AS				



KEY	
	Site
	Bus Stop
	Primary School
	High School
	Retail Area
	Sports/Recreation Area



- KEY**
- Bus Stop
 - Bus Stop
 - 400m Cordon

Scale: NTS Date: 24/06/2016 Drawn By: AS	Job Title: TOWN HOUSE ROAD, COSTESSEY Client: TAYLOR WIMPEY	Drawing Title: LOCAL BUS SERVICES Reproduced from Promap by permission of Ordnance Survey® on behalf of The Controller of Her Majesty's Stationery Office. ©Crown copyright 2012. All rights reserved. Licence number 100020449.	Cambridge House, Lanwades Business Park, Kentford, Newmarket, CB8 7PN Tel: 01638 555107 Email: info@cannonce.co.uk Web www.cannonce.co.uk	<div style="text-align: center;"> CANNON CONSULTING ENGINEERS <small>Highways, Transport & Infrastructure Planning</small> </div> Project No: T331 Figure No: FIGURE 5
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Appendix A

Calculation Reference: AUDIT-243601-160630-0650

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

MULTI-MODAL VEHICLES

Selected regions and areas:

02 SOUTH EAST	
SC SURREY	1 days
WS WEST SUSSEX	1 days
03 SOUTH WEST	
DV DEVON	2 days
04 EAST ANGLIA	
NF NORFOLK	1 days
06 WEST MIDLANDS	
SH SHROPSHIRE	2 days
07 YORKSHIRE & NORTH LINCOLNSHIRE	
NE NORTH EAST LINCOLNSHIRE	1 days
NY NORTH YORKSHIRE	3 days
SY SOUTH YORKSHIRE	1 days
08 NORTH WEST	
CH CHESHIRE	1 days
09 NORTH	
CB CUMBRIA	1 days

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

Filtering Stage 2 selection:

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

Parameter: Number of dwellings
 Actual Range: 52 to 180 (units:)
 Range Selected by User: 50 to 200 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 28/09/15

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

Selected survey days:

Monday	3 days
Tuesday	3 days
Wednesday	1 days
Thursday	4 days
Friday	3 days

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

Selected survey types:

Manual count	14 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:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	8
Edge of Town	5

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.

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

Filtering Stage 3 selection:

Use Class:

C3 14 days

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

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	4 days
10,001 to 15,000	4 days
15,001 to 20,000	2 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	4 days
25,001 to 50,000	2 days
75,001 to 100,000	4 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	13 days

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

Travel Plan:

Yes	1 days
No	13 days

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

LIST OF SITES relevant to selection parameters

1	CB-03-A-04	SEMI DETACHED	CUMBRIA
	MOORCLOSE ROAD		
	SALTERBACK		
	WORKINGTON		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	82	
	Survey date: FRIDAY	24/04/09	Survey Type: MANUAL
2	CH-03-A-06	SEMI-DET./BUNGALOWS	CHESHIRE
	CREWE ROAD		
	CREWE		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of dwellings:	129	
	Survey date: TUESDAY	14/10/08	Survey Type: MANUAL
3	DV-03-A-02	HOUSES & BUNGALOWS	DEVON
	MILLHEAD ROAD		
	HONITON		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	116	
	Survey date: FRIDAY	25/09/15	Survey Type: MANUAL
4	DV-03-A-03	TERRACED & SEMI DETACHED	DEVON
	LOWER BRAND LANE		
	HONITON		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	70	
	Survey date: MONDAY	28/09/15	Survey Type: MANUAL
5	NE-03-A-03	PRIVATE HOUSES	NORTH EAST LINCOLNSHIRE
	STATION ROAD		
	SCUNTHORPE		
	Edge of Town Centre		
	Residential Zone		
	Total Number of dwellings:	180	
	Survey date: TUESDAY	20/05/14	Survey Type: MANUAL
6	NF-03-A-02	HOUSES & FLATS	NORFOLK
	DEREHAM ROAD		
	NORWICH		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	98	
	Survey date: MONDAY	22/10/12	Survey Type: MANUAL
7	NY-03-A-06	BUNGALOWS & SEMI DET.	NORTH YORKSHIRE
	HORSEFAIR		
	BOROUGHBRIDGE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	115	
	Survey date: FRIDAY	14/10/11	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	NY-03-A-09	MIXED HOUSING	NORTH YORKSHIRE
	GRAMMAR SCHOOL LANE		
	NORTHALLERTON		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	52	
	Survey date: MONDAY	16/09/13	Survey Type: MANUAL
9	NY-03-A-10	HOUSES AND FLATS	NORTH YORKSHIRE
	BOROUGHBRIDGE ROAD		
	RIPON		
	Edge of Town		
	No Sub Category		
	Total Number of dwellings:	71	
	Survey date: TUESDAY	17/09/13	Survey Type: MANUAL
10	SC-03-A-04	DETACHED & TERRACED	SURREY
	HIGH ROAD		
	BYFLEET		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	71	
	Survey date: THURSDAY	23/01/14	Survey Type: MANUAL
11	SH-03-A-04	TERRACED	SHROPSHIRE
	ST MICHAEL'S STREET		
	SHREWSBURY		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total Number of dwellings:	108	
	Survey date: THURSDAY	11/06/09	Survey Type: MANUAL
12	SH-03-A-05	SEMI-DETACHED/TERRACED	SHROPSHIRE
	SANDCROFT		
	SUTTON HILL		
	TELFORD		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	54	
	Survey date: THURSDAY	24/10/13	Survey Type: MANUAL
13	SY-03-A-01	SEMI DETACHED HOUSES	SOUTH YORKSHIRE
	A19 BENTLEY ROAD		
	BENTLEY RISE		
	DONCASTER		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	54	
	Survey date: WEDNESDAY	18/09/13	Survey Type: MANUAL
14	WS-03-A-04	MIXED HOUSES	WEST SUSSEX
	HILLS FARM LANE		
	BROADBRIDGE HEATH		
	HORSHAM		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	151	
	Survey date: THURSDAY	11/12/14	Survey Type: MANUAL

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

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

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	14	97	0.062	14	97	0.244	14	97	0.306
08:00 - 09:00	14	97	0.146	14	97	0.342	14	97	0.488
09:00 - 10:00	14	97	0.150	14	97	0.159	14	97	0.309
10:00 - 11:00	14	97	0.130	14	97	0.163	14	97	0.293
11:00 - 12:00	14	97	0.150	14	97	0.150	14	97	0.300
12:00 - 13:00	14	97	0.152	14	97	0.143	14	97	0.295
13:00 - 14:00	14	97	0.155	14	97	0.139	14	97	0.294
14:00 - 15:00	14	97	0.135	14	97	0.152	14	97	0.287
15:00 - 16:00	14	97	0.225	14	97	0.168	14	97	0.393
16:00 - 17:00	14	97	0.233	14	97	0.155	14	97	0.388
17:00 - 18:00	14	97	0.286	14	97	0.163	14	97	0.449
18:00 - 19:00	14	97	0.177	14	97	0.145	14	97	0.322
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.001			2.123			4.124

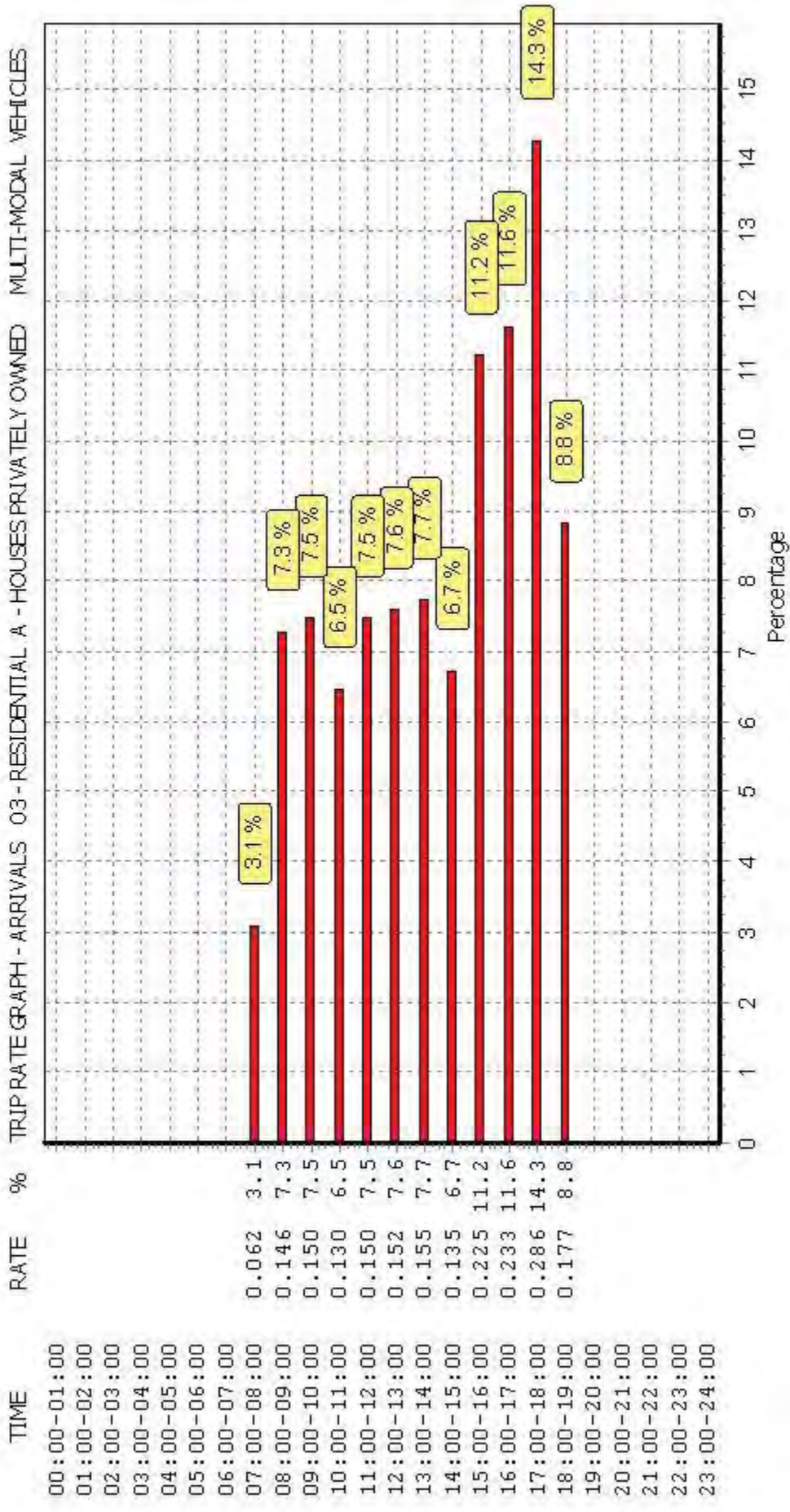
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

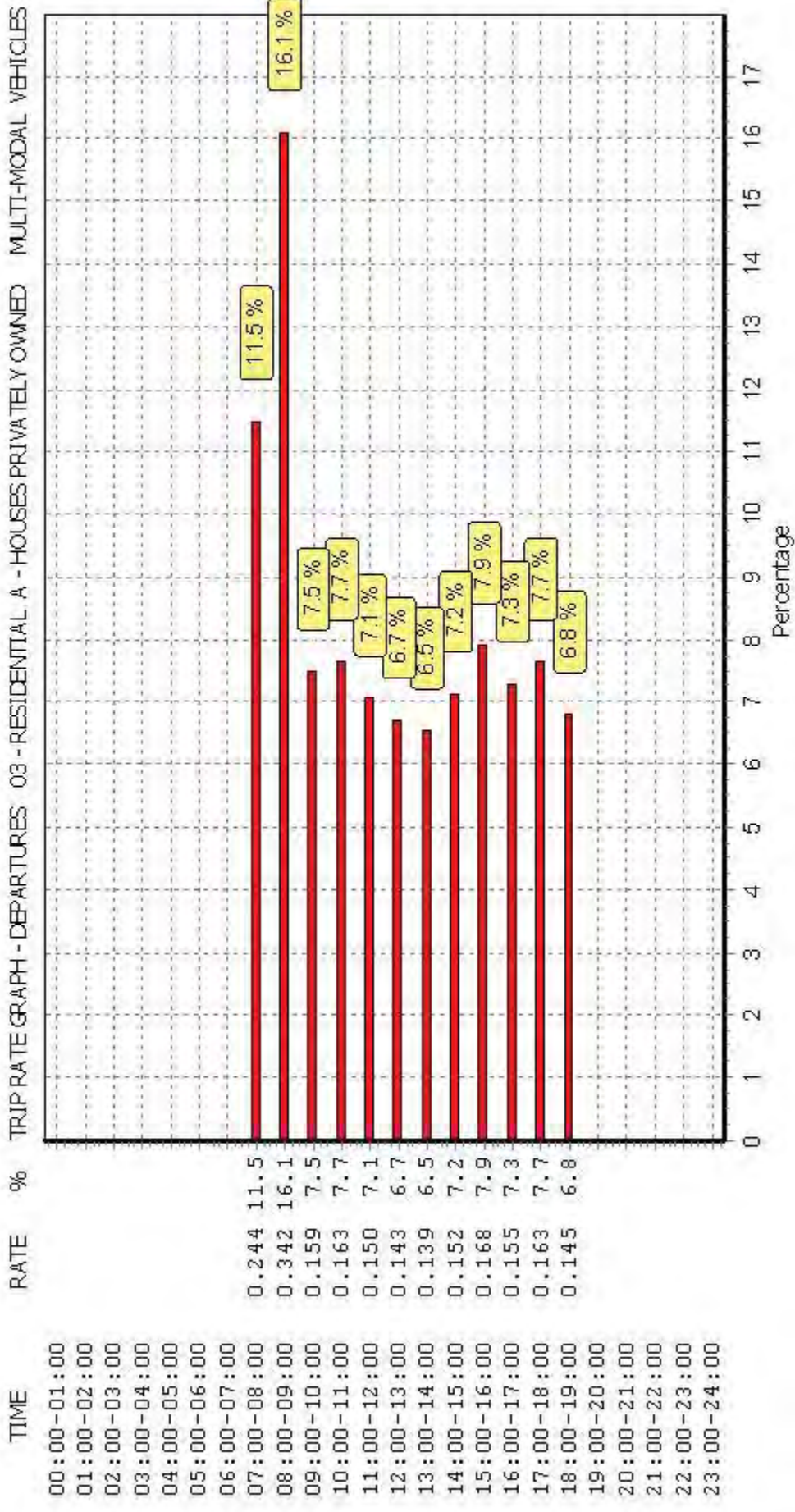
Parameter summary

Trip rate parameter range selected: 52 - 180 (units:)
 Survey date date range: 01/01/08 - 28/09/15
 Number of weekdays (Monday-Friday): 14
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 1

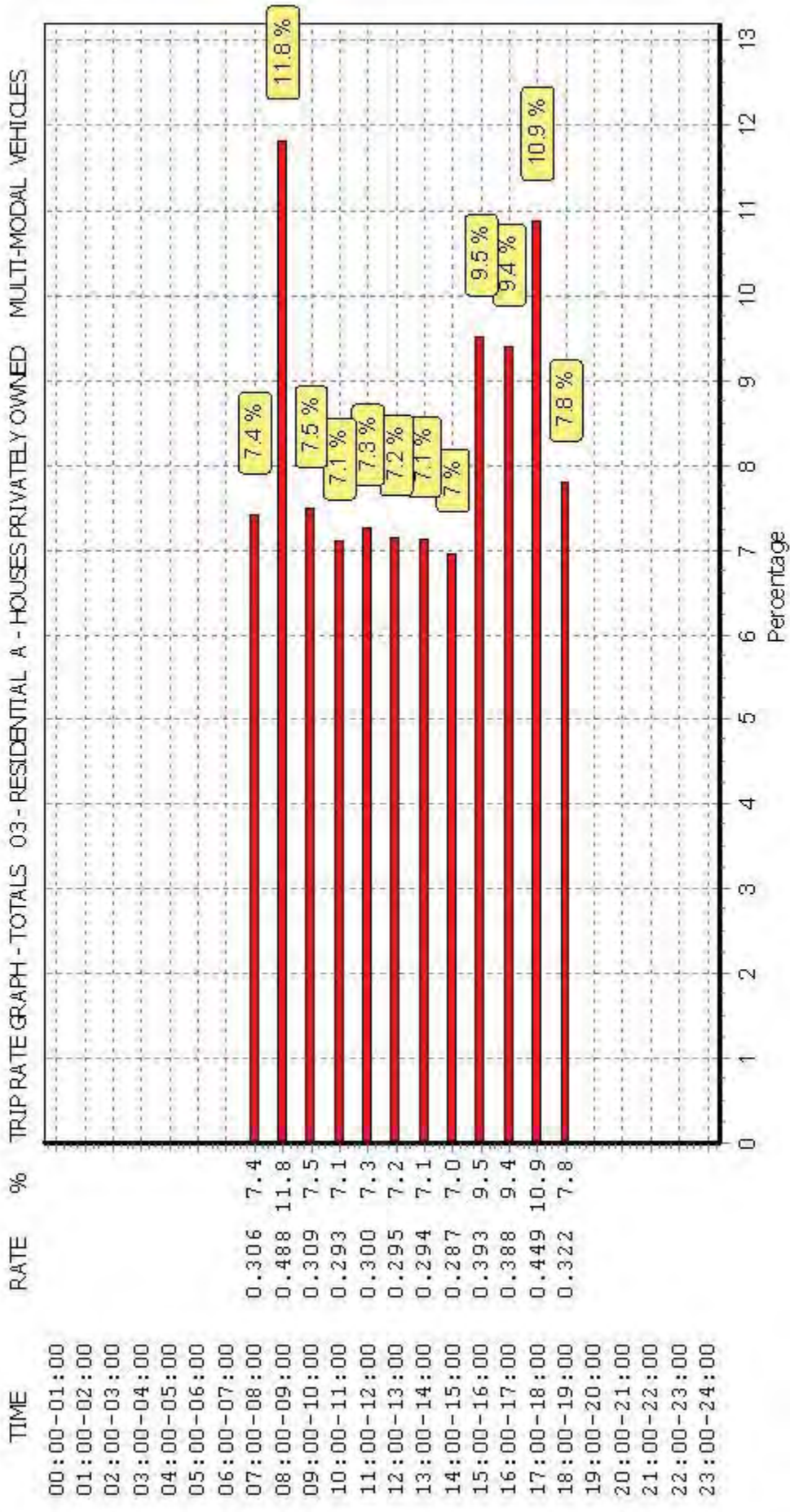
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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

MULTI-MODAL TOTAL PEOPLE

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	14	97	0.095	14	97	0.399	14	97	0.494
08:00 - 09:00	14	97	0.212	14	97	0.694	14	97	0.906
09:00 - 10:00	14	97	0.229	14	97	0.288	14	97	0.517
10:00 - 11:00	14	97	0.222	14	97	0.281	14	97	0.503
11:00 - 12:00	14	97	0.237	14	97	0.253	14	97	0.490
12:00 - 13:00	14	97	0.242	14	97	0.228	14	97	0.470
13:00 - 14:00	14	97	0.246	14	97	0.242	14	97	0.488
14:00 - 15:00	14	97	0.226	14	97	0.262	14	97	0.488
15:00 - 16:00	14	97	0.481	14	97	0.292	14	97	0.773
16:00 - 17:00	14	97	0.447	14	97	0.270	14	97	0.717
17:00 - 18:00	14	97	0.500	14	97	0.252	14	97	0.752
18:00 - 19:00	14	97	0.301	14	97	0.248	14	97	0.549
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.438			3.709			7.147

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.

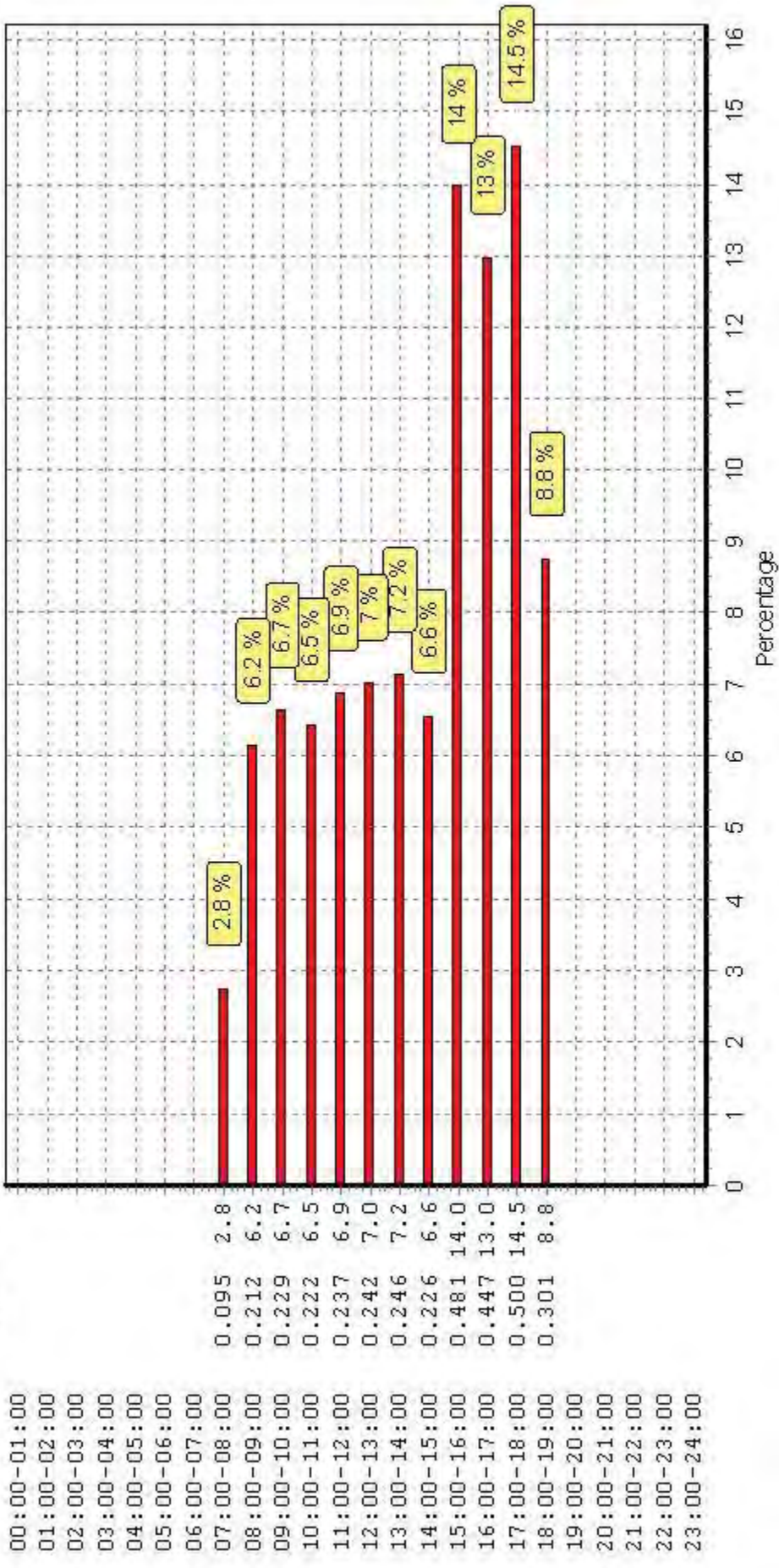
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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.

Parameter summary

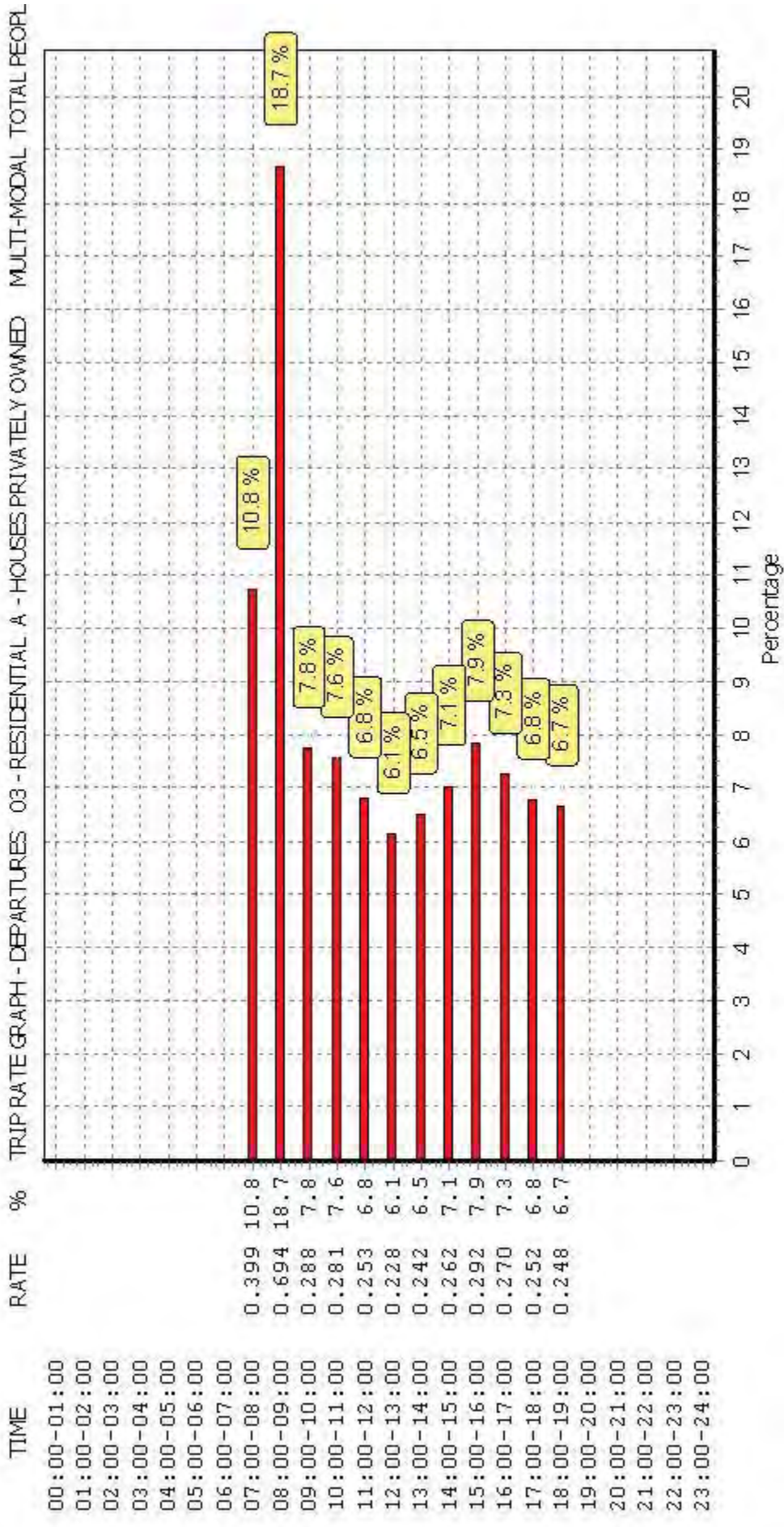
Trip rate parameter range selected: 52 - 180 (units:)
Survey date date range: 01/01/08 - 28/09/15
Number of weekdays (Monday-Friday): 14
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 1

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.

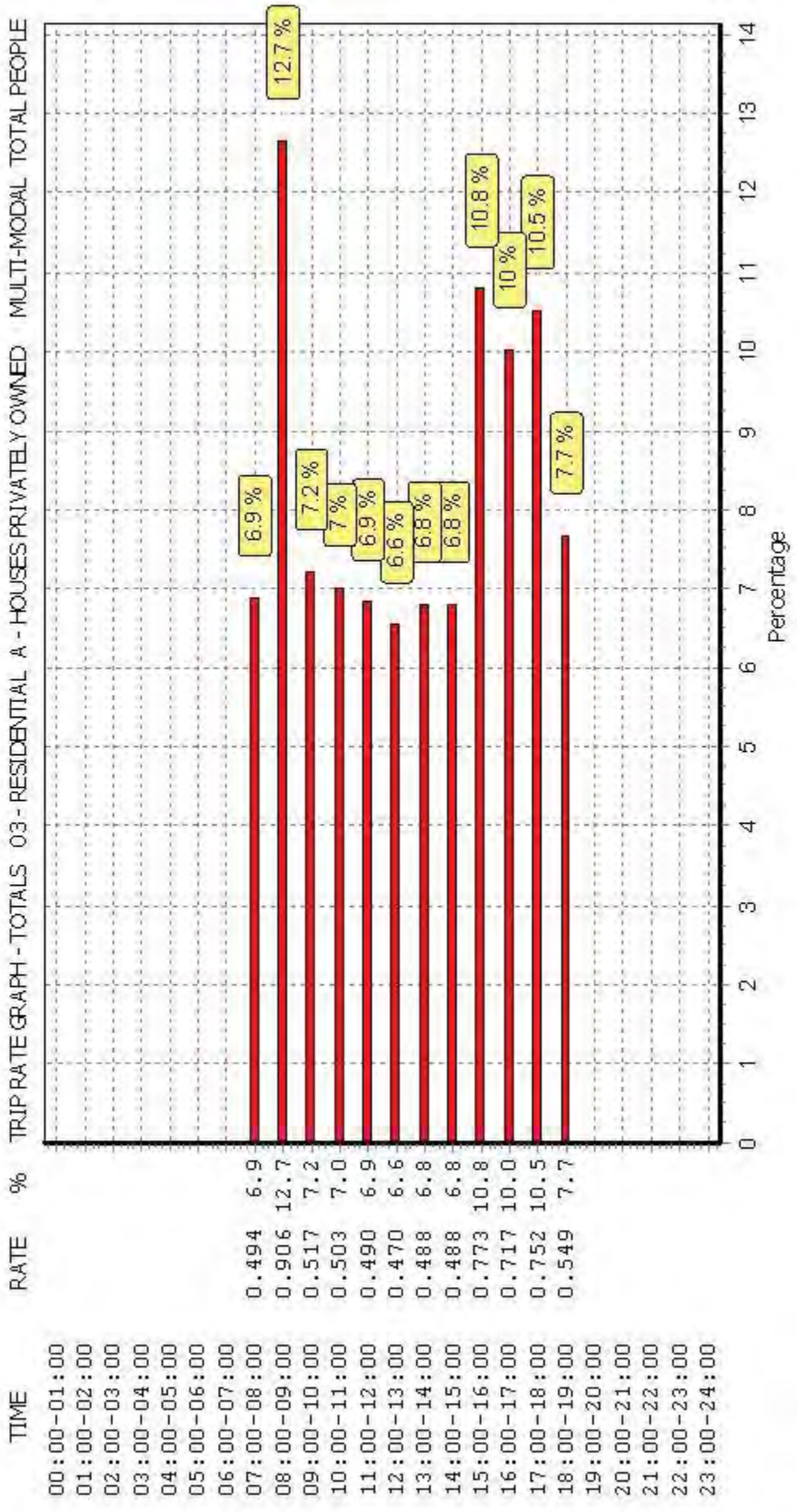
TRIP RATE GRAPH - ARRIVALS 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED MULTI-MODAL TOTAL PEOPLE



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



Land at Town House Road,
Costessey

Initial Landscape and Visual Appraisal

Prepared by
CSA Environmental

on behalf of
Taylor Wimpey UK Ltd

Report No: CSA/3022/01

July 2016

Report Reference	Date	Revision	Prepared by	Approved by	Comments
3022_01	07.07.2016	-	BS	CA	First Issue



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Appendices

Appendix A: Site Location Plan

Appendix B: Aerial Photograph

Appendix C: Photosheets

Appendix D: Magic Map Extract and Heritage Information

Appendix E: Concept Masterplan

Appendix F: Methodology

1.0 INTRODUCTION

- 1.1 CSA Environmental has been appointed by Taylor Wimpey UK Ltd to undertake an initial landscape and visual appraisal of land at Townhouse Road, Costessey ('the Site'). The Site is being promoted through the South Norfolk Council's 'Call for Sites', which is one of the first stages in gathering evidence to identify future development site allocations.
- 1.2 This appraisal describes the existing landscape character and quality of the Site and the surrounding area. The report then goes on to discuss the ability of the Site to accommodate development and the potential landscape and visual effects on the wider area. A Concept Masterplan is included in **Appendix E**.
- 1.3 For the purpose of this appraisal it has been assumed that the proposed development will comprise: approximately 92 dwellings, public open space including a children's play area, associated infrastructure and landscaping.
- 1.4 The Site lies at the southern edge of Costessey in Norfolk within the jurisdiction of South Norfolk Council.
- 1.5 The Site is approximately 2.62 ha in size, and comprises a medium sized field. The location and extent of the Site is shown on the Location Plan in **Appendix A** and on the Aerial Photograph in **Appendix B**.

Methodology

- 1.6 This initial appraisal is based on site visits undertaken by a suitably qualified and experienced Landscape Architect in July 2016. The weather conditions at the time were clear and visibility was good in near, middle and long distance views.
- 1.7 In landscape and visual impact appraisal, a distinction is drawn between landscape effects (i.e. effects on the character or quality of the landscape irrespective of whether there are any views of the landscape, or viewers to see them) and visual effects (i.e. effects on people's views of the landscape, from residential properties and also from public rights of way and other areas with general public access). This report therefore considers the potential impact of the development on both landscape character and visibility. CSA's standard methodology which underpins the judgements contained within this report is set out in **Appendix F**.
- 1.8 Photographs contained within this document (**Appendix C**) were taken using a digital camera with a lens focal length approximating to

50mm, to give a similar depth of vision to the human eye. In some instances images have been combined to create a panorama.

2.0 LANDSCAPE POLICY CONTEXT

National Planning Policy Framework ('NPPF')

2.1 National policy is set out in The National Planning Policy Framework ('NPPF') and those parts relevant to this appraisal are summarised below.

2.2 Paragraph 14 states that at the heart of the NPPF is a presumption in favour of sustainable development, which it states should be seen as a golden thread running through both plan-making and decision-taking.

2.3 Section 7 of the NPPF sets out the requirements of good design and Paragraph 56 states that:

'Good design is a key aspect of sustainable development, is indivisible from good planning, and should contribute positively to making places better for people.'

2.4 Paragraph 58 states that local and neighbourhood plans should develop robust policies which set out the quality of development which will be expected based on stated objectives for the future of the area and an understanding and evaluation of its defining characteristics. Planning policies and decisions among others should aim to ensure development:

- will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
- respond to local character and history, and reflect the identity of local surroundings and materials, while not preventing or discouraging appropriate innovation; and
- are visually attractive as a result of good architecture and appropriate landscaping.

2.5 Paragraph 61 notes that planning policies should address the connections between people and place and the integration of new development into the natural, built and historic environment.

2.6 Section 11 of the NPPF deals with conserving and enhancing the natural environment. Paragraph 109 of the document states that the planning system should contribute to the protection and enhancement of the natural and local environment through, among others protecting and enhancing valued landscapes. Paragraph 118 of the document states that planning permission should be refused for development resulting in the loss or deterioration of irreplaceable

habitats including ancient woodland, unless the need for and benefits of the development clearly outweigh the loss.

South Norfolk Local Plan

- 2.7 The South Norfolk Local Plan comprises a number of adopted planning documents included a Joint Core Strategy for Broadland, Norwich and South Norfolk, adopted in 2011 and amendments adopted in 2014. The Development Management Policies Document for South Norfolk was adopted in 2015 and also forms part of the South Norfolk Local Plan.
- 2.8 The main landscape policies from these documents relevant to the Site are as follows:
- 2.9 **Policy 2 Promoting Good Design** requires all development to be designed to the highest possible standards, respecting local distinctiveness including the landscape character and historic environment, as well as the varied character of market towns and villages.
- 2.10 **Policy DM1.4 Environmental Quality and Local Distinctiveness** states that the Council will work with developers to promote and achieve high quality and positive environmental improvement from all development. It notes that all development proposals must demonstrate an understanding and evaluation of the important environmental assets including locally distinctive characteristics, and justify the design approach.
- 2.11 **Policy DM 4.4 Natural Environmental Assets - Designated and Locally Important Open Space** requires new development to respect the contribution that Important Local Important Open Spaces make to the form and character of the settlement. The woodland to the north of Town House Road at Greenhills is identified as a Local Important Open Space. The preamble to the policy recognises the contribution that woodlands in the Tud Valley make to the character of Costessey, in that they form an important backdrop of trees which in combination with low density development help contribute to the character of the settlement.
- 2.12 **Policy DM3.15 Outdoor Play Facilities and Recreational Space** requires new housing development to provide adequate outdoor play facilities and recreational open space appropriate to the level of development proposed.
- 2.13 **Policy DM4.5 Landscape Character and River Valleys** states that all development should respect, conserve and enhance the surrounding landscape character, with particular regard to protecting the

distinctive characteristics, special qualities and geographical extents of the identified rural river valleys, including the River Tud Valley in which the Site is located.

- 2.14 **Policy DM4.8 Protection of Trees and Hedgerows** states that significant trees, woodland and traditional orchards should be retained and conserved where possible, as well as 'important' hedgerows as defined by the Hedgerows Regulations 1997.
- 2.15 **Policy DM4.9 Incorporating Landscape into Design** states that detailed development proposals must demonstrate a high quality of landscape design, implementation and management, respecting the character and distinctiveness of the local landscape.
- 2.16 South Norfolk Council, Broadland District Council, Norwich City Council and Norfolk County Council are also in the early stages of preparing the Greater Norwich Local Plan ('GNLP'). This document will identify sites to be allocated for development. The 'Call for Sites' is one of the first stages in gathering evidence which will underpin the site allocation process.

3.0 SITE CONTEXT

Site Context

- 3.1 The Site lies to the south of Town House Road at the southern edge of the settlement of Costessey. It occupies a rectangular field on the valley sides above the River Tud. The Tud valley and the associated farmland separate Costessey from the built up area of New Costessey which occupies the opposing valley side a short distance to the south. The Site location is illustrated on the plan contained in **Appendix A**.
- 3.2 The settlement at Costessey has grown up alongside the river valleys of the Tub and Wensum. It lies at the north western edge of the urban conurbation associated with the built up area of Norwich.
- 3.3 To the east of the Site is a residential estate at Lime Tree Avenue and Green Hills Close. It comprises semi-detached houses and bungalows dating from circa. 1950s. The rear of the dwellings at Lime Tree Avenue are separated from the Site by a semi-mature band of trees and the long rear garden associated with the property adjacent to the north east corner of the Site, located on Town House Road.
- 3.4 To the west of the Site is the Church of Our Lady & Saint Walstan, which is well contained by mature trees within the grounds of the church. Beyond the church is a recent housing estate at Cleves Way and Husenbeth Close, which is enclosed to the south by a band of young woodland.
- 3.5 Opposite the Site at the northern edge of Town House Road are several properties from the late twentieth century. To the east of these is the mature woodland at Green Hills which occupies the rising ground above Town House Road.
- 3.6 A short distance to the west of the Site at the cross roads of Town House Road, West End and The Street is the centre of Costessey, comprising several shops and a public house. The historic core of Costessey, within the Old Costessey Conservation Area, lies along the route of The Street, at the northern extents of the settlement.
- 3.7 To the south of the Site the land falls towards the route of the River Tub, beyond which it rises towards the edge of New Costessey. The intervening landscape is characterised by arable farmland along the floor of the valley, and by a dense band of woodland at East Hill which follows the ridgeline along the top of the southern valleyside. Poplar shelterbelts are a prominent feature within the valley, with a line of

poplars containing the southern boundary of the adjacent field to the south.

National Landscape Character

- 3.8 Natural England has produced profiles for England's National Character Areas ('NCA'), which divides England into 159 distinct natural areas, defined by a unique combination of landscape, biodiversity, geodiversity, cultural and economic activity. The Site lies within the Central North Norfolk Character Area (NCA 78).
- 3.9 The Central North Norfolk NCA is described as comprising a gently undulating, sometimes flat landscape dissected by river valleys, with a tranquil agricultural landscape and a sporadically rationalised patchwork field system, sinuous lanes and mixed hedges with hedgerow oaks.

Regional Landscape Character

South Norfolk Landscape Character Assessment (2001)

- 3.10 The South Norfolk Landscape Character Assessment, was produced by Land Use Consultants on behalf of South Norfolk Council.
- 3.11 This shows the Site situated within the 'Tud Rural River Valley' Landscape Character Area A3, the key characteristics of which include:
- Small intimate rural valley with confined valley form and restricted views, although more distant views are possible from the upper slopes.
 - Small scale river channel only evident at the points where it is crossed by the Costessey – New Costessey Road and the Ringland Road.
 - Small-scale, very sparse settlement comprising occasional isolated farmsteads. The pastoral valley floor creates an important 'green' gap between the settlements of Costessey and New Costessey which extend onto the upper valley sides.
 - Remote, very rural character despite proximity to the City, as a result of extremely restricted access through the valley – with no roads or footpaths.
 - Strongly wooded character with the presence of a mix of coniferous and deciduous large woodland blocks on the valley sides, plus long lines of poplar trees found in association with the river. Single trees and plantations of Scots pine are a distinctive feature.

- A wooded gateway to Norwich is created by the woodland present on the upper valley slopes. This is an important component of the landscape adjoining the Norwich Southern Bypass.
 - Distinctive agricultural landscape common on the valley sides created by earth fields and regularly spaced corrugated pig shelters, with other areas used for arable farmland.
- 3.12 The assessment identifies the principal sensitivities and vulnerabilities of the character area which include:
- The need to conserve the remote rural character in the face of gradual incremental development;
 - Threat of suburbanisation and coalescence with settlements extending down the valley sides.
- 3.13 The Landscape Strategy guidelines for the LCA A3 recommend conserving the remote rural quality of the Tud River Valley. Any development must respect the sparsely settled character of the valley, maintaining the distinct and separate characters of Costessey and New Costessey.
- 3.14 From our own assessment of the Site and the surrounding area we would note that it is fairly typical of the Landscape Character Area, comprising farmland on the valley side, blocks of woodland and lines of poplars along the valley floor.

Designated Sites and Heritage Assets

- 3.15 The Site is not covered by any statutory or non-statutory designations for landscape character or quality (**Appendix D**).
- 3.16 There are no Scheduled Monuments or Listed Buildings on the Site. The nearest Listed Buildings lie to the north and west of the Site at Our Lady and St Walstan Church, the Thatched Cottage 11 and the Tudor Barn 28. The Old Costessey Conservation Area lies within the north of the settlement, approximately 0.4km to the north of the Site (**Appendix D**) separated by intervening built development.
- 3.17 The River Wensum, located approximately 0.4km north of the Site, is designated as a Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).

Tree Preservation Orders ('TPO')

- 3.18 There are no Tree Preservation Orders covering any trees within the Site. The area of woodland at Green Hills Wood to the north east of the Site

is covered by a TPO no.272. This was ascertained by studying the South Norfolk Online Planning Mapping on 6th July 2016.

Public Rights of Way

- 3.19 There are no public rights of way (PROW) crossing or immediately adjoining the Site.
- 3.20 The nearest public rights of way are public footpaths FP11 and FP12 which both lead north from Town House Road to the north east of the Site forming a circular walk through the wooded area of Green Hills.
- 3.21 Public bridleways BR7 and BR8 both lead east from Folgate Lane on the eastern edge of Costessey, connecting to the Marriott's Way recreational route and the northern edge of New Costessey to the south east.
- 3.22 To the south of the Site the woodland at East Hill is publically accessible, although it is not crossed by a designated footpath route.

4.0 SITE DESCRIPTION AND VISIBILITY

Site Description

- 4.1 The Site comprises a rectangular field located to the south of Town House Road. It currently comprises a rough grassland sward and is subdivided by temporary fencing into a number of horse grazed paddocks. The Site and its immediate context are shown on the Aerial Photograph at **Appendix B** and on the photographs contained in **Appendix C**.

Vegetation and Boundary Conditions

- 4.2 The northern boundary with Town House Road is defined by a largely defunct hedgerow, comprising elm, ivy and the occasional shrubby ash and hawthorn. It sits atop a bank which rises gradually from the field access at the north east corner of the site to a height of approximately 2.5m at the north western corner of the Site.
- 4.3 To the east, conifer hedging, 2.5 to 4 metres in height, extends along the boundary with the adjacent dwelling. At the mid-point of the boundary this is replaced by bramble scrub, whilst the remainder of the boundary is defined by a chainlink fence.
- 4.4 The southern boundary is defined by a post and wire fence, however is otherwise open save for a single oak and band of scrub to the east.
- 4.5 To the western boundary, is a dense field hedge and a small number of hedgerow trees. The northern section of the boundary is defined by numerous significant, mature trees within the grounds of the church.

Topography

- 4.6 The Site's topography slopes gently from the boundary with Town House Road of approximately 15m AOD to a low point in the south east corner.
- 4.7 The land to the south of the Site continues to fall to around 10m Above Ordnance Datum ('AOD') at the base of the River Tud valley before rising up to around 40m AOD at New Costessey. Land to the north of the Site rises up to around 35m AOD at Green Hills.

Landscape Quality, Sensitivity and Value

- 4.8 The Site occupies a rectangular field to the south of Town House Road. It is bordered by existing housing in the village to the north and east and by the church of Our Lady and St Walston to the west. There are

no notable landscape features contained within the Site save a small number of mature trees and an established hedgerow at the western boundary.

- 4.9 The Site lies on the middle slopes of the Tud River Valley and forms part of the wider farmland which occupies the lower slopes and valley floor. In this sense it contributes to the character of the Tud Rural River Valley LCA as described in the South Norfolk Landscape Character Assessment, however its rural character is somewhat eroded by neighbouring housing development. The Site is therefore considered to be of medium landscape quality and sensitivity.
- 4.10 To the south of the Site is arable farmland which occupies the base of the valley floor and rises to the woodland at East Hills which occupies the ridge to the south. There are a number of bands of mature poplar trees which define nearby field boundaries which are also characteristic of the river valley character area. Overall this area is considered to be of medium landscape quality and medium - high sensitivity to residential development.
- 4.11 The neighbouring townscape comprises twentieth century housing and is undistinguished in terms of character. The exception is the Grade II listed Church of Our Lady and St Walstan, however this is well contained by mature boundary vegetation and the building makes little contribution to the adjoining street scene, although the flint knapped wall at the boundary to the church is an attractive feature. In addition, the woodland which occupies the rising ground at Green Hills makes an important contribution to the character of the settlement and views from the wider landscape.
- 4.12 Overall, the adjoining built development is considered to be of medium townscape quality and medium to low sensitivity to new housing of a similar scale. The listed church and the woodland at Green Hills are considered to be of high townscape / landscape quality and medium sensitivity.
- 4.13 The concept of landscape value is also important, and is included in assessments in order to avoid consideration only of how scenically attractive an area may be, and thus to avoid undervaluing areas of strong character but little scenic beauty. Factors such as cultural association, recreational use and intangible qualities such as wildness are important in terms of determining landscape value.
- 4.14 The Site has pleasant but unexceptional scenic qualities and contains no recognised heritage assets. It has no statutory or non-statutory designations for landscape character. There are some opportunities for views of the valley landscape beyond the Site from the public realm

which are likely to be valued at a local level. The Site is therefore considered to be of medium landscape value.

Visibility

- 4.15 The Site is well contained by neighbouring development, woodland and topography in views from the north, east and west. Opportunities to view the Site from the River Tud Valley to the south are restricted by the limited public access to this area.
- 4.16 The following section describes representative views of the Site from public vantage points in the vicinity.

North

- 4.17 There are views of the Site from the section of Town House Road which extends alongside the northern boundary (**Photographs 02 and 09**). These are to some extent restricted along the western section by virtue of the embankment to this section of the route. There are more open views across the valley landscape from the field access to the east, and from the access to Hinshalwood Way (**Photograph 08**).
- 4.18 To the east and west of the Site views from the approach along Town House Road are limited by vegetation within the grounds of the church and neighbouring housing (**Photographs 01 and 10**).
- 4.19 There are views from the frontage of approximately 7 dwellings which face the Site on the northern edge of Town House Road (**Photograph 04**).
- 4.20 Views from the footpaths which pass through the woodland at Green Hills are prevented owing to the density of the surrounding vegetation. Further north, views are prevented by the rising topography and woodland in the vicinity of Green Hills and by the neighbouring development to the north.

East

- 4.21 There are views from rear, upper floor windows of the dwellings which border the Site to the east. These are however heavily filtered by the semi-mature tree line which extends alongside the western boundaries of these properties (**Photograph 05**). There are more open views available from the extensive rear garden of the property which adjoins the Site off Town House Road.
- 4.22 Views from public vantage points on Lime Tree Avenue are limited to glimpses between buildings, which again are restricted by rear garden vegetation (**Photograph 11**).

West

- 4.23 Views from Our Lady of St Walston Church are heavily filtered by the mature trees within the grounds of the church.
- 4.24 There is a glimpsed view of the southern part of the Site available from a section of Longwater Lane in proximity to the recreation grounds (**Photograph 12**). These views are filtered by the band of poplars within the intermediate landscape.

South

- 4.25 There are several bungalows located to the east of Longwater Lane which have views towards the Site from the access road, however again these are filtered by the intervening line of poplars (**Photograph 13**). Beyond this, there is no public access to the farmland which extends along the valley floor.
- 4.26 Views from the publically accessible woodland at East Hill are extremely limited by the dense vegetation which encloses the trodden routes through the woodland. Where there are breaks in the vegetation, the Site can be seen on the opposing valley side (**Photographs 14**, taken from the footpath and **Photograph 15** from the woodland edge). In winter, the Site will be more visible when the vegetation is out of leaf.

5.0 ABILITY OF THE SITE TO ACCOMMODATE DEVELOPMENT

5.1 This section provides a brief appraisal of the ability of the Site to accommodate residential development and the likely landscape and visual effects. This appraisal has informed the preparation of a Concept Masterplan which illustrates how housing can be accommodated at the Site.

5.2 It is anticipated that the proposed development can accommodate approximately 92 new homes, open space and associated infrastructure. The residential development is assumed to comprise built form predominately two storeys in height.

5.3 The key landscape opportunities and constraints shown on the Concept Masterplan include:

- Landscape frontage alongside Town House Road;
- Retention and reinforcement of existing boundary vegetation;
- Open space at the north eastern corner of Site to respect the setting of the listed church and to provide an attractive frontage to the new housing area;
- Sensitive siting and design of buildings alongside the southern edge with the adjoining countryside;
- Accommodate surface water run off in landscaped sustainable drainage features alongside the southern Site boundary;
- Maintain visual links to the wider countryside through the careful alignment of streets to create framed vistas; and
- Provide a new play area at the northern edge of the Site for the benefit of new and existing residents.

Relationship to Existing Development

5.4 The Site is well related to existing housing within the settlement, with residential development at Lime Tree Avenue and Town House Road bordering the Site to the east and north respectively. To the west is the Church of Our Lady and St Walston, which assists in further anchoring the Site within the built envelope of the settlement. Beyond the church is recently constructed housing at Cleves Way and Husenbeth Close. The settlement centre and associated facilities, including shops and a public house lie approximately 200 metres to the west of the Site.

Separation of between Costessey and New Costessey

5.5 The Site lies within the River Tud Valley and forms a component of the rural landscape which separates the adjoining built areas of Costessey

and New Costessey. The South Norfolk Landscape Character Assessment recognises the function that this open land plays in maintaining a 'green' gap between the two settlements.

5.6 Development at the Site will result in the loss in an existing field which lies within the river valley. Despite this, it will not cause a significant reduction in the 'gap' nor will it impact materially on the role the landscape plays in retaining the separation between these built up areas, for the following reasons:

- The Site is closely related to the built up edge at Costessey;
- Development will extend no further south than existing housing at Lime Tree Avenue;
- The physical distance between the settlements will remain comparable;
- The proposals will not intrude significantly on the rural character of the landscape of the valley floor; and
- There are limited opportunities to view the Site from public vantage points to the south.

Landscape Features

5.7 The Site contains few landscape features of note and these are all contained to the Site boundaries and do not pose a significant constraint to development. Development at the Site will reinforce the existing landscape features at the boundaries and will include new areas of tree, shrub planting and species rich grassland within areas of open space and plot frontages.

Public Rights of Way

5.8 There are no public footpaths which will be directly affected by development at the Site. In addition, there are no public footpaths located within the vicinity which will experience any indirect material visual effects, although there are some views from the woodland at East Hills which are discussed below.

Visibility

5.9 The visual appraisal in Section 4 identifies that the Site is well contained in views from the north, east and west by a combination of built development, woodland and rising topography. Furthermore, although housing will be visible from the countryside to the south, there are limited opportunities for views from public vantage points.

5.10 The visual effects on the key views of the Site are briefly discussed below.

- 5.11 Views from Town House Road are limited to the section of the route in proximity to the Site boundary, beyond which views are restricted by adjacent development. Development at the Site will impact on the existing view across the Site to the adjoining valley landscape, however this is only readily apparent from the existing field access and from the approach along Hinshalwood Way. In other locations, views are restricted by the change in level at the Site boundary and by patchy vegetation at the Site frontage.
- 5.12 The Concept Masterplan illustrates how housing will be set back from the frontage and landscaping will be provided within open space alongside Town House Road. By adopting a sensitive approach, new housing and landscaping can be accommodated which makes a positive contribution to the adjoining streetscene, although the open views from a section of the route will be replaced.
- 5.13 There are a small number of dwellings to the north of the Site which will experience adverse visual effects as a result of development at the Site. The Concept Masterplan shows an area of open space adjacent to the boundary with these properties which will go some way to mitigating any loss of visual amenity.
- 5.14 Views from the grounds of Our Lady and St Walston Church are heavily filtered by mature vegetation. Filtered views of housing will be available in the winter months, however the Concept Masterplan shows how development can be pulled back from this boundary to respect the setting and visual amenity of the church.
- 5.15 Views from the rear of dwellings at Lime Tree Avenue are limited to the first floor windows and filtered by the intervening tree line such that appropriately sited development will have little impact on their visual amenity. There will be oblique views of housing from the upper rear windows of the property located at the north east corner of the Site, however again any loss of visual amenity will not be significant.
- 5.16 In glimpsed views from a section of Longwater Lane housing will be discernible at the Site, albeit in the middle distance and filtered by intervening vegetation. Despite this, views from this location will tend to be transient and housing at the Site will be barely perceptible.
- 5.17 In views from the farmland to the south development will be visible on the rising ground of the Site. In these views, development will lie in proximity to existing housing and will not appear contrary to the pattern of development in the settlement, extending no further down the valley side than the housing to the east.

- 5.18 Opportunities to view development at the Site from vantage points to the south are limited by the lack of public access to this area. Views from the woodland at East Hills are largely prevented by the density of vegetative cover. Where breaks in the vegetation occur there will be glimpsed views of housing at the Site, however it will not be intrusive and will not impact materially on the amenity and enjoyment of this woodland walk.

Landscape / Townscape Effects

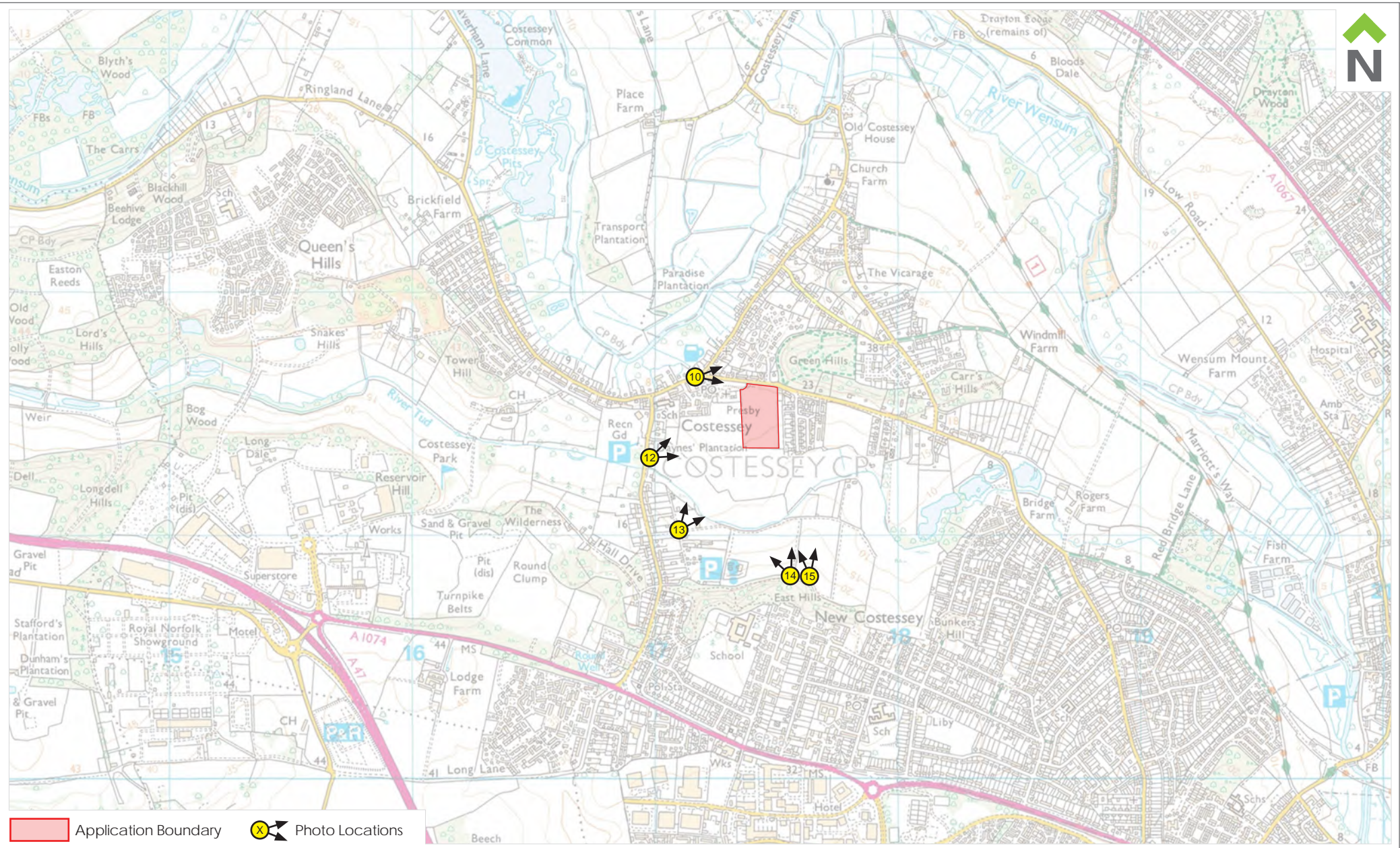
- 5.19 As set out in Section 4, the Site is not covered by any statutory or non-statutory designations for landscape character or quality.
- 5.20 The Site comprises an area of farmland which contributes to the wider rural qualities of the Tub River Valley. Despite this, development at the Site would be closely related to housing within Costessey and would not appear out of context. The Concept Masterplan illustrates how an appropriate outward facing development can be accommodated which adopts a sensitive approach alongside the southern boundary with the countryside. By adopting this approach development would be consistent with the existing settlement pattern and would not intrude significantly on the character of the adjoining valley floor landscape.
- 5.21 Similarly, open space and landscaping along the frontage of Town House Road will provide an appropriate setting for the new housing and edge to the Site. Development will continue the built up edge along Town House Road which is present to the east of the Site and will not look out of character in this location.
- 5.22 The Site therefore has the ability to accommodate development material effects on landscape / townscape quality.

6.0 CONCLUSION

- 6.1 The Site lies to the south of Town House Road at the southern edge of the settlement of Costessey. It occupies a rectangular field on the valley sides above the River Tud. The Tub valley and the associated farmland separate Costessey from the built up area of New Costessey which occupies the opposing valley side a short distance to the south.
- 6.2 This appraisal has informed the preparation of a Concept Masterplan which illustrates how approximately 92 dwellings, open space and associated infrastructure can be accommodated at the Site.
- 6.3 The Site is not covered by any statutory or non-statutory designations for landscape character or quality. It comprises an area of farmland which is well related to built development within Costessey. It lies within the Tub River Valley, however it contains few significant landscape features and is influenced by its proximity to the built up edge of Costessey.
- 6.4 The visual appraisal identified that the Site is well contained in views from the north, east and west by a combination of built development, woodland and rising topography. Furthermore, although housing will be visible from the countryside to the south, there are limited opportunities for views from public vantage points.
- 6.5 In conclusion, this initial landscape and visual appraisal of the Site found that development could be accommodated which is well related to the existing pattern of development in Costessey; would not impact materially on key views or the adjoining landscape of the Tud Valley; Nor would it significantly intrude on the separation between the built up areas of Costessey and New Costessey.

Appendix A

Site Location Plan



 Application Boundary  Photo Locations



Dixies Barns, High Street,
Ashwell, Hertfordshire SG7 5NT
t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Project Land south of Town House Road, Costessey
Drawing Title Site Location Plan
Client Taylor Wimpey UK Ltd

Date July 2016 **Drawing No.** CSA/3022/101
Scale @ A4 NTS **Rev** -
Drawn CM **Checked** CA

Appendix B

Aerial Photograph



 Application Boundary  Photo Locations



Dixies Barns, High Street,
Ashwell, Hertfordshire SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Project Land south of Town House Road, Costessey

Date July 2016

Drawing No. CSA/3022/102

Drawing Title Aerial Photograph

Scale @ A4 NTS

Rev -

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Appendix C

Photosheets



View west along Town House Road **Photograph 01**



View from Town House Road at north east corner of Site **Photograph 02**



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Ashwell, Hertfordshire SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

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View south across Site **Photograph 03**



View of properties north of Site from within Site **Photograph 04**



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t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

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overlap



overlap

View East and south from within Site **Photograph 05**



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Ashwell, Hertfordshire SG7 5NT

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e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

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overlap



overlap

View south from southern Site boundary **Photograph 06**



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w csaenvironmental.co.uk

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overlap



overlap

View north from southern Site boundary **Photograph 07**



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View south from Hinshalwood Way **Photograph 08**



View east along Town House Road **Photograph 09**



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t 01462 743647
e ashwell@csaenvironmental.co.uk
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View east from Costessey village centre Photograph 10



View from access to Green Hills Close Photograph 11


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<p>Drawing Title Photosheets</p>	<p>Date July 2016</p>	<p>Drawn CM</p>	<p>Checked CA</p>	
<p>Client Taylor Wimpey UK Ltd</p>				



View from Longwater Lane Photograph 12




View from access track to bungalows at the rear of Longwater Lane Photograph 13

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<p>Drawing Title Photosheets</p>	<p>Date July 2016</p>	<p>Client Taylor Wimpey UK Ltd</p>	<p>Drawn CM</p>	<p>Checked CA</p>



View from Informal footpath in East Hills Woodland Photograph 14

 <p>Dixes Bams, High Street, Ashwell, Hertfordshire SG7 5NT</p> <p>  01462 743647  ashwell@csaenvironmental.co.uk  csaenvironmental.co.uk </p>			
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Drawing Title	Photosheets	Date	July 2016
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View from edge of East Hills Woodland **Photograph 15**



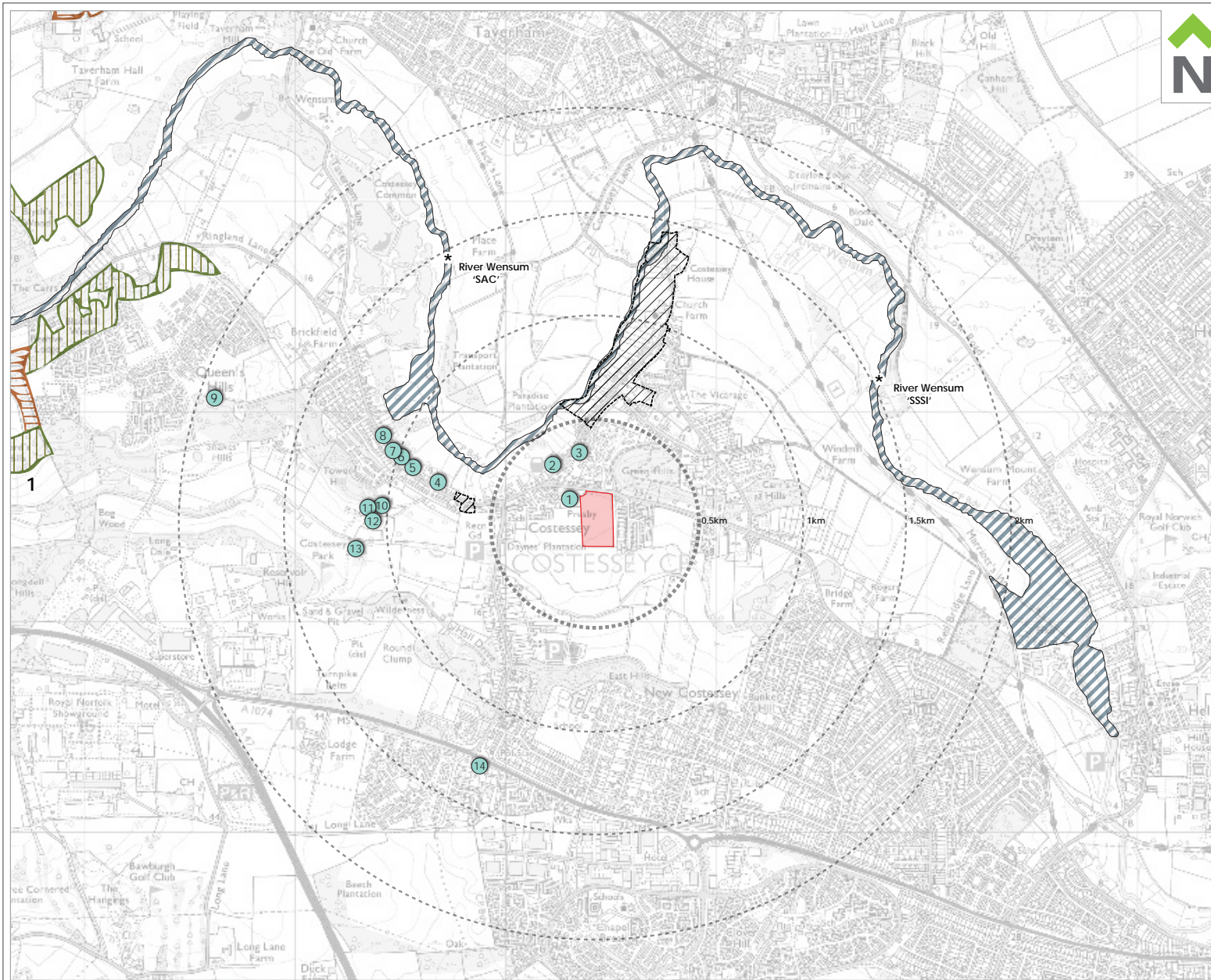
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Ashwell, Hertfordshire SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Project	Land south of Town House Road, Costessey	Drawing No. CSA/3022/103	Rev -
Drawing Title	Photosheets	Date July 2016	
Client	Taylor Wimpey UK Ltd	Drawn CM	Checked CA

Appendix D

MAGIC map Extract and Heritage Information



- Site Boundary
- Sites of Special Scientific Interest ('SSSIs')
Special Area of Conservation ('SAC')
- Conservation Areas
Old Costessey Conservation Area
- Ancient Replanted Woodland
- Ancient and Semi-Natural Woodland
- X Grade II Listed Buildings
 1. *Our Lady And St Walstan R.C. Church*
 2. *Thatched Cottage 11*
 3. *Tudor Barn 28*
 4. *86 West End*
 5. *No. 114 & Garden Railings 114*
 6. *Fern Cottage 142*
 7. *124 West End*
 8. *136 West End*
 9. *Model Farmhouse*
 10. *U-shaped Range of Barn, Single-storeyed Connecting Structures, Stable Block and Byre to North of Costessey Park House*
 11. *Costessey Park Kennels*
 12. *Costessey Park House*
 13. *Remains of Costessey Hall*
 14. *The Round House*



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Ashwell, Hertfordshire SG7 5NT

t 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

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Drawing Title MAGIC Map Extract & Heritage Information

Client Taylor Wimpey UK Ltd

Date July 2016

Scale @ A4 NTS

Drawn CM

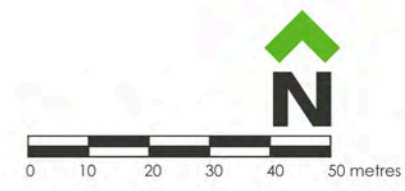
Drawing No. CSA/3022/104

















Rev -

Checked CA

Appendix E

Concept Masterplan



-  Site Boundary: 3.86ha
-  Potential residential area: 2.62ha
Approx. 92 dwellings @ 35 dph
-  Potential vehicular access point
-  Existing main vehicular routes through Costessey and existing bus stops
-  Potential spine road through development
-  Potential secondary roads
-  Existing public footpath
-  Potential recreational routes
-  Potential pedestrian linkages
-  Existing vegetation
-  New public open space: 1.24ha
(To include new landscaping & tree planting, SuDs feature & Children's Play Area)
-  Children's Play Area: 570sqm
-  Potential location for SuDs feature
(Opportunity to enhance wildlife biodiversity and form integral part of green infrastructure)
-  Existing overhead powerline
(To be underground)
-  Existing facilities in Costessey
-  Green Hills - Important Local Open Space

Rev	Date	By	Description

CSA
environmental

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Ashwell, Hertfordshire SG7 5NT

† 01462 743647
e ashwell@csaenvironmental.co.uk
w csaenvironmental.co.uk

Project Land south of Town House Road, Costessey

Title Concept Masterplan

Client Taylor Wimpey UK Ltd

Scale 1:1250 @ A2	Drawn SE
Date July 2016	Checked RR
Drawing No. CSA/3022/100	Rev -

Appendix F

Methodology

METHODOLOGY FOR LANDSCAPE AND VISUAL IMPACT ASSESSMENTS

- M1 In landscape and visual impact assessment, a distinction is normally drawn between **landscape/townscape effects** (i.e. effects on the character or quality of the landscape (or townscape), irrespective of whether there are any views of the landscape, or viewers to see them) and **visual effects** (i.e. effects on people's views of the landscape, principally from residential properties, but also from public rights of way and other areas with public access). Thus, a development may have extensive landscape effects but few visual effects (if, for example, there are no properties or public viewpoints nearby), or few landscape effects but substantial visual effects (if, for example, the landscape is already degraded or the development is not out of character with it, but can clearly be seen from many residential properties and/or public areas).
- M2 The assessment of landscape & visual effects is less amenable to scientific or statistical analysis than some environmental topics and inherently contains an element of subjectivity. However, the assessment should still be undertaken in a logical, consistent and rigorous manner, based on experience and judgement, and any conclusions should be able to demonstrate a clear rationale. To this end, various guidelines have been published, the most relevant of which (for assessments of the effects of a development, rather than of the character or quality of the landscape itself), form the basis of the assessment and are as follows:-
- 'Guidelines for Landscape & Visual Impact Assessment', produced jointly by the Institute of Environmental Assessment and the Landscape Institute (GLVIA 3rd edition 2013); and
 - 'Landscape Character Assessment, Guidance for England and Scotland, 2002', to which reference is also made. This stresses the need for a holistic assessment of landscape character, including physical, biological and social factors.

LANDSCAPE/TOWNSCAPE EFFECTS

- M3 Landscape/townscape quality is a subjective judgement based on the value and significance of a landscape/townscape. It will often be informed by national, regional or local designations made upon it in respect of its quality e.g. AONB. Sensitivity relates to the ability of that landscape/townscape to accommodate change.

Landscape sensitivity can vary with:-

- (i) existing land use;
- (ii) the pattern and scale of the landscape;
- (iii) visual enclosure/openness of views, and distribution of visual receptors;
- (iv) the scope for mitigation, which would be in character with the existing landscape; and
- (v) the value placed on the landscape.

- M4 There is a strong inter-relationship between landscape/townscape quality and sensitivity as high quality landscapes/townscapes usually have a low ability to accommodate change.
- M5 For the purpose of our assessment, landscape/townscape quality and sensitivity has been combined and is assessed using the criteria in Table LE1. Typically, landscapes/townscapes which carry a quality designation and which are otherwise attractive or unspoilt will in general be more sensitive, while those which are less

attractive or already affected by significant visual detractors and disturbance will be generally less sensitive.

M6 The concept of landscape/townscape value is also considered, in order to avoid consideration only of how scenically attractive an area may be, and thus to avoid undervaluing areas of strong character but little scenic beauty. Landscape value is:

'The relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a whole variety of reasons.'

M7 Nationally valued landscapes are recognised by designation, such as National Parks and Areas of Outstanding Natural Beauty ('AONB') which have particular planning policies applied to them. Nationally valued townscapes are typically those covered by a Conservation Area or similar designation.

M8 The magnitude of change is the scale, extent and duration of change to a landscape arising from the proposed development and was assessed using the criteria in Table LE2.

M9 Landscape/townscape effects were assessed in terms of the interaction between the magnitude of the change brought about by the development and the quality, value & sensitivity of the landscape resource affected. The landscape/townscape effects can be either beneficial or adverse.

M10 In this way, landscapes of the highest sensitivity and quality, when subjected to a high magnitude of change from the proposed development, are likely to give rise to 'substantial' landscape effects which can be either adverse or beneficial. Conversely, landscapes of low sensitivity and quality, when subjected to a low magnitude of change from the proposed development, are likely to give rise to only 'slight' or neutral landscape effects. Beneficial landscape effects may arise from such things as the creation of new landscape features, changes to management practices and improved public access. For the purpose of this assessment the landscape effects have been judged at completion of the development.

VISUAL EFFECTS

M11 Visual effects are concerned with people's views of the landscape/townscape and the change that will occur. Like landscape effects, viewers or receptors are categorised by their sensitivity. For example, views from private dwellings are generally of a higher sensitivity than those from places of work.

M12 In describing the content of a view the following terms are used:-

- No view - no views of the development;
- Glimpse - a fleeting or distant view of the development, often in the context of wider views of the landscape;
- Partial - a clear view of part of the development only;
- Filtered - views to the development which are partially screened, usually by intervening vegetation - the degree of filtering may change with the seasons;
- Open - a clear view to the development.

M13 The sensitivity of the receptor was assessed using the criteria in Table VE1.

M14 The magnitude of change is the degree in which the view(s) may be altered as a result of the proposed development and will generally decrease with distance from its source, until a point is reached where there is no discernible change. The magnitude of change in regard to the views was assessed using the criteria in Table VE2.

- M15 Visual effects were then assessed in terms of the interaction between the magnitude of the change brought about by the development and also the sensitivity of the visual receptor affected.
- M16 Photographs were taken with a digital camera with a lens that approximates to 50mm, to give a similar depth of view to the human eye. In some cases images have been joined together to form a panorama. The prevailing weather and atmospheric conditions, and any effects on visibility are noted.
- M17 Unless specific slab levels of buildings have been specified, the assessment has assumed that slab levels will be within 750mm of existing ground level.

MITIGATION AND RESIDUAL EFFECTS

- M18 Mitigation measures are described as those measures, including any process or activity, designed to avoid, reduce and compensate for adverse landscape and/or visual effects of the proposed development.
- M19 In situations where proposed mitigation measures are likely to change over time, as with planting to screen a development, it is important to make a distinction between any likely effects that will arise in the short-time and those that will occur in the long-term or 'residual effects' once mitigation measures have established. In this assessment, the visual effects of the development have been considered at completion of the entire project and once any landscape mitigation has had an opportunity to establish.
- M20 Mitigation measures can have a residual, positive impact on the effects arising from a development, whereas the short-term impact may be adverse.

ASSESSMENT OF EFFECTS

- M21 The assessment concisely considers and describes the main landscape and visual effects resulting from the proposed development. The narrative text demonstrates the reasoning behind judgements concerning the landscape and visual effects of the proposals. Where appropriate the text is supported by tables which summarise the sensitivity of the views/ landscape, the magnitude of change and describe any resulting effects.

CUMULATIVE EFFECTS

- M22 Cumulative effects are *'the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together.'*
- M23 In carrying out landscape assessment it is for the author to form a judgement on whether or not it is necessary to consider any planned developments and to form a judgement on how these could potentially affect a project.

ZONE OF THEORETICAL VISIBILITY (ZTV)

- M24 A ZTV map can help to determine the potential visibility of the site and identify those locations where development at the site is likely to be most visible from the surrounding area. Where a ZTV is considered appropriate for a proposed development the following methodology is used.
- M25 The process is in two stages, and for each, a digital terrain model ('DTM') using Key TERRA-FIRMA computer software is produced and mapped onto an OS map. The DTM is based on Ordnance Survey Landform Profile tiles, providing a digital record of existing landform across the UK, based on a 10 metre grid. There is the potential for minor

discrepancies between the DTM and the actual landform where there are topographic features that are too small to be picked up by the 10 metre grid. A judgement will be made to determine the extent of the study area based on the specific site and the nature of the proposed change, and the reasons for the choice will be set out in the report. The proposed development is introduced into the model as either a representative spot height, or a series of heights, or a detailed 3D model of the development, and a viewer height of 1.7m is used. This is the first stage, or 'bare earth' ZTV which illustrates the theoretical visibility of a proposed development based on topography alone and does not take account of any landscape features such as buildings, woodland or settlements.

- M26 The second stage is to produce a 'with obstructions' ZTV with the same base as the 'bare earth' ZTV, but which gives a more accurate representation of what is 'on the ground'. Different heights are assigned to significant features such as buildings and woodland thus refining the model to aid further analysis. This data is derived from OS Maps and aerial photographs, and verified during the fieldwork, with any significant discrepancies in the data being noted and the map adjusted accordingly. Fieldwork is confined to accessible parts of the site, public rights of way, the highway network and other publically accessible areas.
- M27 The model is based on available data and fieldwork and therefore may not take into account all development or woodland throughout the study area, nor the effect of smaller scale planting or hedgerows. It also does not take into account areas of recent or continuous topographic change from, for instance, mining operations.

Table LE 1

LANDSCAPE / TOWNSCAPE QUALITY, SENSITIVITY AND VALUE

	Very High	High	Medium	Low
Description of the Landscape/Townscape	<p>Landscape Quality: Intact and very attractive landscape which may be nationally recognised/designated for its scenic beauty. e.g. National Park or Area of Outstanding National Beauty</p> <p>Townscape Quality: A townscape of very high quality which is unique in its character, and recognised nationally/internationally. e.g. World Heritage Site</p> <p>Sensitivity: A landscape/townscape with a very low ability to accommodate change because such change would lead to a significant loss of valuable features or elements, resulting in a significant loss of character and quality. Development of the type proposed would be discordant and prominent.</p> <p>Value: Very high quality landscape or townscape with Statutory designation for landscape/townscape quality, eg. National Park, conservation area or registered park or garden.</p>	<p>Landscape Quality: A landscape, usually combining varied topography, historic features and few visual detractors. A landscape known and cherished by many people from across the region. e.g. County Landscape Site such as a Special Landscape Area.</p> <p>Townscape Quality: A well designed townscape of high quality with a locally recognised and distinctive character e.g. Conservation Area</p> <p>Sensitivity: A landscape/townscape with limited ability to accommodate change because such change would lead to some loss of valuable features or elements, resulting in a significant loss of character and quality. Development of the type proposed would likely be discordant with the character of the landscape/townscape.</p> <p>Value: High quality landscape or lower quality landscape or with un-fettered public access, eg. commons, public park or designated landscape.</p>	<p>Landscape Quality: Non-designated landscape area, generally pleasant but with no distinctive features, often displaying relatively ordinary characteristics.</p> <p>Townscape Quality: A typical, pleasant townscape with a coherent urban form but with no distinguishing features or designation for quality.</p> <p>Sensitivity: A landscape/townscape with reasonable ability to accommodate change. Change would lead to a limited loss of some features or elements, resulting in some loss of character and quality. Development of the type proposed would not be especially discordant.</p> <p>Value: A landscape of local value which may have limited public access. No recognised statutory designation for landscape / townscape quality.</p>	<p>Landscape / Townscape Quality: Unattractive or degraded landscape/townscape, affected by numerous detracting elements e.g. industrial areas, infrastructure routes and un-restored mineral extractions.</p> <p>Sensitivity: A landscape/townscape with good ability to accommodate change. Change would not lead to a significant loss of features or elements, and there would be no significant loss of character or quality. Development of the type proposed would not be discordant with the landscape/townscape in which it is set.</p> <p>Value: Landscape generally of poor quality with no public access, no designations or recognised cultural significance.</p>

Footnote:

1. A distinction has been drawn between landscape/townscape quality and sensitivity. Quality is as a subjective judgement on perception and value of a landscape/townscape and may be informed by any national, regional or local designations for its quality. Sensitivity relates to the ability of that landscape/townscape to accommodate change.

Table LE 2 LANDSCAPE / TOWNSCAPE MAGNITUDE OF CHANGE

	High	Medium	Low	Negligible	Neutral
Description of the Change predicted	Total loss of or severe damage to key characteristics, features or elements				
		Partial loss of or damage to key characteristics, features or elements			
			Minor loss of or alteration to one or more key landscape/ townscape characteristics, features or elements		
				Very minor loss or alteration to one or more key landscape/ townscape characteristics, features or elements	
					No loss or alteration of key landscape/ townscape characteristics, features or elements

Table LE 3 LANDSCAPE / TOWNSCAPE EFFECTS

	Substantial	Moderate	Slight	Neutral
Description of the Effect	<p>The proposals are damaging to the landscape/townscape in that they:</p> <ul style="list-style-type: none"> • are at variance with the landform, scale and pattern of the landscape/ townscape; • are visually intrusive and would disrupt important views; • are likely to degrade or diminish the integrity of a range of characteristic features and elements and their setting; • will be damaging to a high quality or highly vulnerable landscape/ townscape; • cannot be adequately mitigated. 			
		<p>The proposals are:</p> <ul style="list-style-type: none"> • out of scale or at odds with the landscape; • are visually intrusive and will adversely impact on the landscape/townscape; • not possible to fully mitigate; • will have an adverse impact on a landscape/townscape of recognised quality or on vulnerable and important characteristic features or elements. 		
			<p>The proposals:</p> <ul style="list-style-type: none"> • do not quite fit the landform and scale of the landscape/ townscape; • will impact on certain views into and across the area; • cannot be completely mitigated for because of the nature of the proposal or the character of the landscape/townscape; • affect an area of recognised landscape/townscape quality. 	
				<p>The proposals:</p> <ul style="list-style-type: none"> • complement the scale, landform and pattern of the landscape/townscape; • incorporate measures for mitigation to ensure that the scheme will blend in well with the surrounding landscape/ townscape; • avoid being visually intrusive and adversely affecting the landscape/ townscape; • maintain or improve existing landscape/townscape character.

Footnote:

1. Each level (other than neutral) of change identified can be either regarded as 'beneficial' or 'adverse'.

Table VE 1

VISUAL SENSITIVITY

	High	Medium	Low
Description of the Receptor	<p>Residential properties with predominantly open views from windows, garden or curtilage. Views will normally be from ground and first floors and from two or more windows of rooms in use during the day.</p> <p>Users of Public Rights of Way with predominantly open views in sensitive or unspoilt areas.</p> <p>Non-motorised users of minor or unclassified roads in the countryside.</p> <p>Visitors to recognised viewpoints or beauty spots.</p> <p>Users of outdoor recreational facilities with predominantly open views where the purpose of that recreation is enjoyment of the countryside - e.g. Country Parks, National Trust or other access land etc.</p>	<p>Residential properties with partial views from windows, garden or curtilage. Views will normally be from first floor windows only, or an oblique view from one ground floor window, or may be partially obscured by garden or other intervening vegetation.</p> <p>Users of Public Rights of Way with restricted views, in less sensitive areas or where there are significant existing intrusive features.</p> <p>Users of outdoor recreational facilities with restricted views or where the purpose of that recreation is incidental to the view e.g. sports fields.</p> <p>Schools and other institutional buildings, and their outdoor areas.</p> <p>Users of minor or unclassified roads in the countryside, whether motorised or not.</p>	<p>People in their place of work.</p> <p>Users of main roads or passengers in public transport on main routes.</p> <p>Users of outdoor recreational facilities with restricted views and where the purpose of that recreation is unrelated to the view e.g. go-karting track.</p>

Table VE 2		VISUAL MAGNITUDE OF CHANGE				
		High	Medium	Low	Negligible	Neutral
Description of the Change predicted	Dominating changes over all or most of the view(s).					
	Major changes over a large proportion of the view(s).					
	Major changes over a small proportion of the view(s).					
	Minor changes over a small proportion of the view(s).					
	No discernable change to the view(s).					

Table VE 3		VISUAL EFFECTS				
		Substantial	Moderate	Slight	Insignificant	Neutral
Description of the Effects	The proposals would cause significant damage (or improvement) to a view from a sensitive receptor, or less damage (or improvement) to a view from a more sensitive receptor, and would be an obvious or dominant element in the view.					
	The proposals would cause some damage (or improvement) to a view from a sensitive receptor, or less damage (or improvement) to a view from a more sensitive receptor, and would be a readily discernible element in the view.					
	The proposals would cause limited damage (or improvement) to a view from a receptor of medium sensitivity, but would still be a noticeable element within the view, or greater damage (or improvement) to a view from a receptor of low sensitivity.					
	The proposals would not significantly change the view but would still be discernible.					
	No change in the view.					

Footnote:

1. Each level (other than neutral) of change identified can be either regarded as 'beneficial' or 'adverse'.



Dixies Barns, High Street, Ashwell,
Hertfordshire SG7 5NT

† 01462 743647

e ashwell@csaenvironmental.co.uk

w csaenvironmental.co.uk

Suite 1, Deer Park Business Centre, Eckington,
Persore, Worcestershire WR10 3DN

† 01386 751100

e persore@csaenvironmental.co.uk

w csaenvironmental.co.uk

Gallery 1, Citibase, 95 Ditchling Road,
Brighton BN1 4ST

† 01273 573871

e brighton@csaenvironmental.co.uk

w csaenvironmental.co.uk