

MRS HUNTER SHAW
LAND EAST OF CREASE DROVE, CROWLAND
TRANSPORT STATEMENT

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EXECUTIVE SUMMARY

The applicant, Mrs Hunter Shaw, commissioned ADC Infrastructure Limited to provide transport and highways advice in support of an outline planning application for up to 45 houses on a site east of Crease Drove in Crowland.

The development is in a sustainable location that is accessible by all modes of transport. It would be within walking distance of the town's numerous facilities, including South View Primary School, Crowland Medical Centre and the amenities in the town centre where there is a post office, pharmacy, Spar convenience store with cash point, Co-op foodstore, Crowland News and Food, a butcher, baker, greengrocer and hardware store, various cafes, pubs, restaurants and takeaways. The local pedestrian infrastructure is good with street lit footways beside all the roads and on the desire lines to the local amenities. These facilities would be enhanced by the development, with the provision of footways along Crease Drove linking the development to all locations. The development would generate a demand for two pedestrian trips in a peak hour, which could be accommodated by the existing and proposed infrastructure.

There is some dedicated cycle infrastructure nearby with National Cycle Route 12 running through Crowland. A number of the surrounding roads are deemed useful for cyclists as they are quiet roads. Apart from Crowland there isn't a significant population within cycling distance. The development would create a demand for one additional cycle trip in a peak hour.

Crowland is on the route of the InterConnect bus service 37 that runs hourly from Spalding to Peterborough. Bus stops are on Peterborough Road, which is about 660m from the site. The development would generate a demand for one additional bus trip in a peak hour, which could be accommodated by this existing service.

The development will be accessed from a new T-junction on Crease Drove, shown on drawing ADC1220/001B. The junction would be designed to standard with adequate visibility splays.

The development will generate up to 27 traffic movements in a peak hour. Some of that traffic will route to and from the north but most will route to and from the south along Crease Drove. With all the development planned either side of Crease Drove, the flows along it are set to increase from 65 vehicles during the evening peak hour to 132 vehicles. Crease Drove is a narrow road and its carriageway would be widened to 5.5m wide along its length from Monks Meadow to Harvester Way. All widening would be within the public highway. Footways will be provided, within the remaining highway land and using site frontages either side. An equitable way will need to be found of dividing the cost between the various developers with interests in Crease Drove (Hunter Shaw, Wheatley Homes, Adcocks, Woodroffe).

As a worst case, it is assumed that all development traffic to and from the south will pass through the James Road/Peterborough Road junction. The operation of that junction was assessed using traffic forecasts for 2021, which examine a cumulative scenario taking account of the 100 houses being applied for by Wheatley Homes, 45 houses by Adcocks, and 100 houses by Woodroffe. In a 2021 evening peak hour the junction will operate at only 22% of capacity. In the morning peak hour, the high southbound flow on James Road reduces the available gaps for traffic emerging from Peterborough Road. Hence the right turn out of Peterborough Road will operate at 87% of capacity with 2021 background traffic, becoming 91% with development traffic. The longest queue will increase from 6 to 8 vehicles. This is not a severe impact and the high flows at the junction appear to be caused by rerouting of traffic from the A16. It is not the responsibility of the developer to resolve that issue, and the development will increase the peak hour traffic at the junction by just 20 vehicles. Hence mitigation works are not necessary.

Overall, it is clear that in isolation, or in combination with other promoted sites along Crease Drove, the development accords with the principles of the NPPF and should not be prevented.

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	Plan of extent of public highway
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1.0 INTRODUCTION

- 1.1 Through their agent IBA Planning, the applicant Mrs Hunter Shaw commissioned ADC Infrastructure Limited to provide transport and highways advice in support of an outline planning application for residential development of up to 45 houses on land to the east of Crease Drove in Crowland. South Holland District Council are the local planning authority and Lincolnshire County Council (LCC) are the local highway authority.
- 1.2 The NPPF¹ says that *“All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decision should take account of whether*
- *“the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure*
 - *safe and suitable access to the site can be achieved for all people, and*
 - *improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.”*
- 1.3 What is a significant amount of movement is not defined. However, *Guidance on Transport Assessment*² notes that a Transport Assessment is for *“development that has significant transport implications”* and is required for residential proposals in excess of 80 dwellings. The Guidance also says that a Transport Statement is appropriate for *“development that has relatively small transport implications”*, which is a residential proposal of between 50 and 80 dwellings. That is because 50 dwellings is around the point when there will be 30 traffic movements created in a peak hour, and *“Whilst there is no suggestion that 30 two-way peak hour vehicle trips would, in themselves, cause a detrimental impact, it is a useful point of reference from which to commence discussions.”* For developments of fewer than 50 dwellings, no formal assessment is necessary.
- 1.4 In this case, developments are also proposed on neighbouring parcels of land, promoted by Wheatley Homes, Adcocks Drinks Company, and Woodroffe. Hence, although the planning application will be for fewer than 50 dwellings, this Transport Statement has been prepared to provide additional assessment and context to examine the cumulative scenario.
- 1.5 The scope of the work was determined through discussions and correspondence with LCC. It was agreed that detailed analysis of the traffic impact was required of Crease Drove, which is currently a single track road, and the James Road/Peterborough Road priority controlled T-junction.
- 1.6 Hence, this report examines the accessibility of the site by all modes of transport and the travel demand generated by the development. It describes the measures proposed to encourage sustainable travel. It also describes the background traffic in the vicinity of the site and the distribution and assignment of traffic generated by the proposal. The assessment then determines the impact of the development traffic on the local highway network.

¹ Paragraph 32, National Planning Policy Framework, Department for Communities and Local Government, March 2012

² Guidance on Transport Assessment, Department for Transport, March 2007

2.0 EXISTING CONDITIONS

Site location and existing use

- 2.1 Crowland is a small town situated between Spalding and Peterborough. The recently built A16 bypasses the town to its east and south (**Figure 1**). The town centre is around North Street, around 750m from the site.

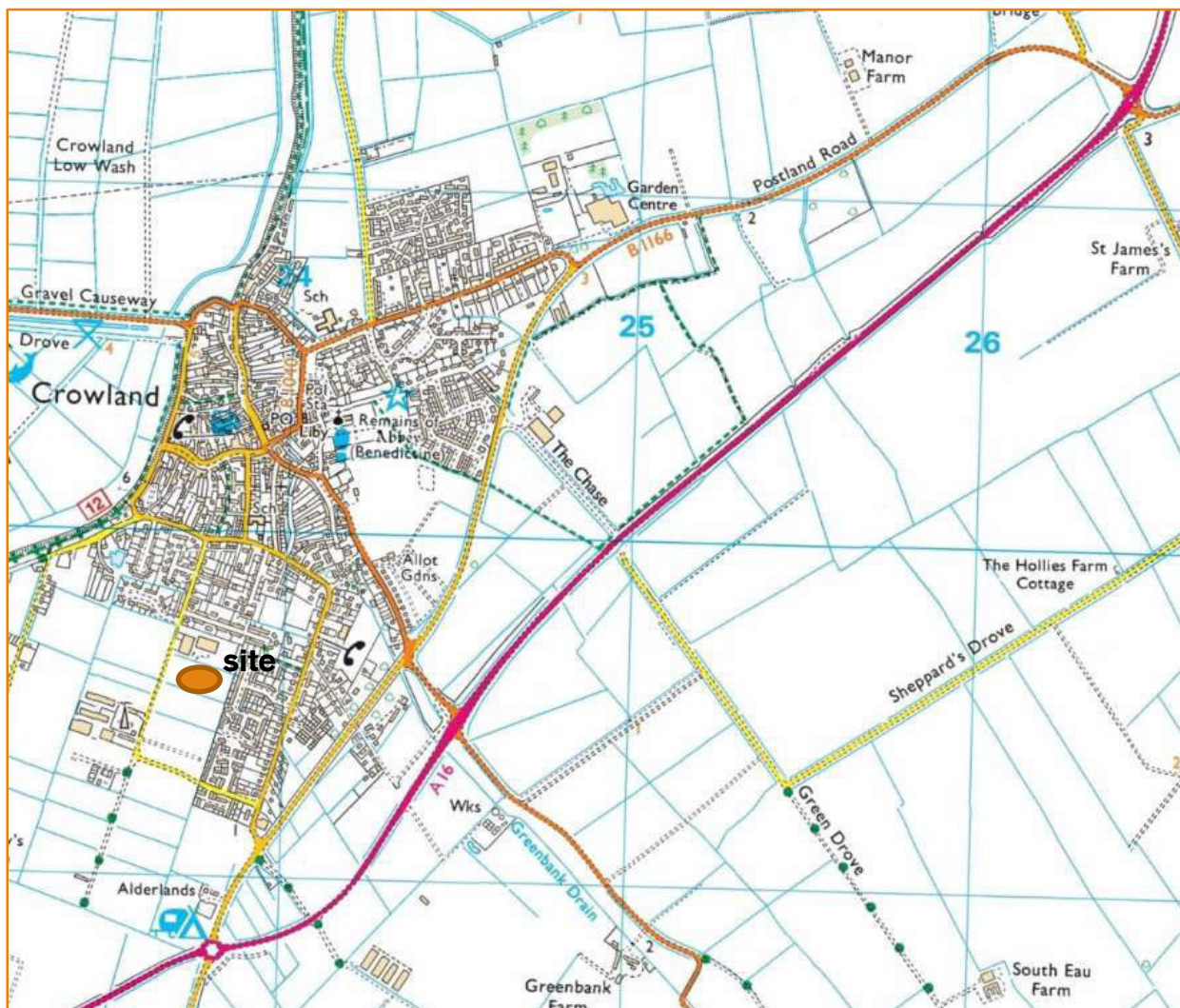


Figure 1: Crowland and the site's location (the town centre, around North Street, is indicated by the PO label)

- 2.2 The site is a field used for agriculture. It fronts on to Crease Drove, a narrow road and public highway maintained by LCC. To the east are residential properties that are accessed from Peterborough Road. To the immediate north is an industrial unit currently subject to an outline planning application by Adcocks Drinks Company (H02-0554-16) submitted in June 2016 and not yet determined for redevelopment for 45 houses.
- 2.3 Opposite, and immediately south of the site are two areas of land currently being promoted for development by N Woodroffe & Sons. Further south, in January 2015 Wheatley Homes submitted a planning application for 100 dwellings (15/00014/OTH) on Land at Harvester Way (**Figure 2**).



Figure 2: aerial view of the neighbouring development plots (refer to red line plan for precise boundaries)

Traffic counts

- 2.6 As part of the Wheatley Homes development, classified traffic counts were carried out in two locations on Wednesday 25 June 2014. On Crease Drive, north of the industrial area (Crowland Cranes), the traffic volumes shown in **Figure 3** were recorded. The highest hourly flow was 65 vehicles during the evening peak hour (5-6pm). In addition, a turning count at the Harvester Way/Harvester Way junction revealed the peak hour movements shown in **Figure 4**. Full results are in **Appendix B**.

25/06/2014	northbound			southbound			two-way			
hour	cycles	lights	heavies	cycles	lights	heavies	cycles	lights	heavies	all vehs
0700-0800	1	12	0	1	30	4	2	42	4	48
0800-0900	2	10	0	1	46	0	3	56	0	59
0900-1000	0	12	1	1	29	1	1	41	2	44
1000-1100	1	15	0	0	18	0	1	33	0	34
1100-1200	0	10	1	0	9	2	0	19	3	22
1200-1300	0	15	1	0	13	0	0	28	1	29
1300-1400	0	18	0	0	13	1	0	31	1	32
1400-1500	0	20	1	0	21	1	0	41	2	43
1500-1600	0	29	1	1	25	2	1	54	3	58
1600-1700	0	42	0	3	15	0	3	57	0	60
1700-1800	3	38	0	4	19	1	7	57	1	65
1800-1900	1	22	0	1	11	0	2	33	0	35
total 0700-1900	8	243	5	12	249	12	20	492	17	529

lights = cars and LGVs, heavies = OGV1, OGV2, PSV

Figure 3: traffic volumes on Crease Drive, recorded 25 June 2014

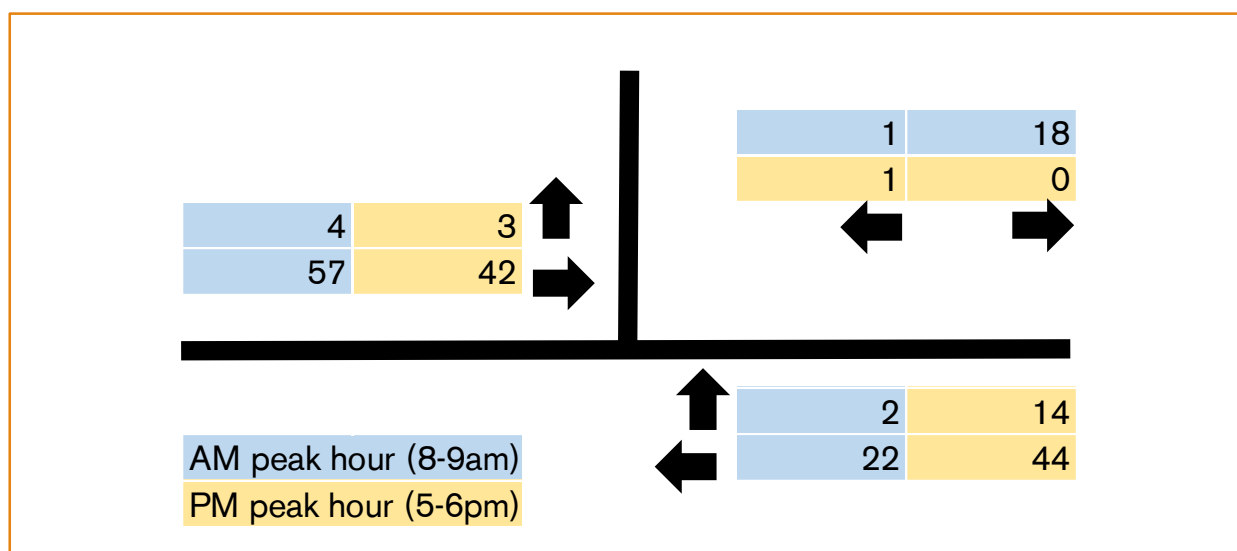


Figure 4: traffic flows at Harvester Way/Crease Drive junction on 25 June 2016

- 2.7 A peak hour turning count was also commissioned by ADC Infrastructure at the James Road/Peterborough Road junction on Tuesday 19 April 2016. All movements in 15 minutes intervals were recorded between 0730 to 0930 hours and 1630 to 1830 hours. The peak hours were found to be 0730 to 0830 hours and 1700 to 1800 hours, as shown on the diagram in **Appendix B**. The full results are in **Appendix B**.

Accident record

- 2.8 *Guidance on Transport Assessment* requires a Transport Assessment to establish the current personal injury accident record for the study area for the most recent three-year period. Hence, the accident record was determined from Crashmap for the three year period from 2012 to 2014 (**Figure 5**).
- 2.9 Within the study area there has been only one slight accident. On 15 December 2012 around 11am, when it was dry, a lorry turning right in to the industrial unit collided with a car. The three passengers of the car were slightly injured. One slight accident in three years does not constitute an accident problem. The full details are in **Appendix C**.

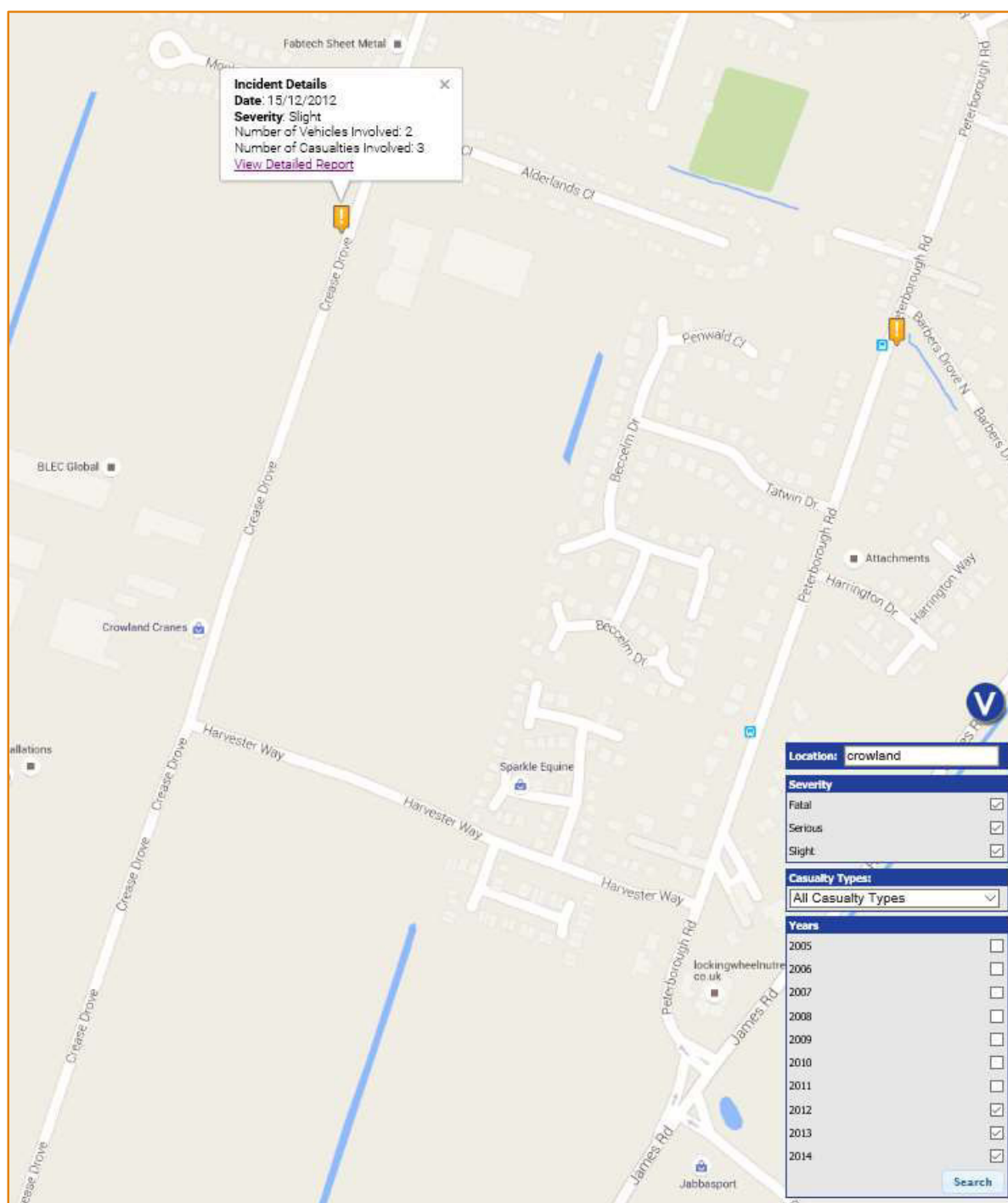


Figure 5: locations of accidents in the study area between 2012 and 2014

Accessibility for pedestrians

2.10 Government advice is that

*"The mean average length for walking journeys is approximately 1 km (0.6 miles) and for cycling, it is 4 km (2.4 miles), although journeys of up to three times these distances are not uncommon for regular commuters. ... Useful guidance on desirable, acceptable and preferred maximum walking distances for different purposes is included in Tables 3.2 and 3.3 of Providing for Journeys on Foot, IHT 2000."*³

For commuters and school pupils, walking distances of up to 0.5km are desirable, 1km is acceptable, and up to 2km is the preferred maximum⁴

³ Department for Transport LTN1/04 – Policy, Planning and Design for Walking and Cycling, para 3.10.3

⁴ Guidelines for Providing for Journeys on Foot, Institution of Highways and Transportation, 2000

- 2.11 The *statutory walking distance* is used in the UK to determine if a pupil qualifies for free school transport, or if they're considered to live close enough to walk to school. The distance is calculated as the shortest route along which the pupil – accompanied if necessary – can walk with reasonable safety, so it includes pedestrian footpaths as well as roads. The distance is calculated from the child's permanent home to school. For children aged 8 or under the statutory walking distance is 2 miles. For children over 8 years old, the distance is 3 miles.
- 2.12 According to the National Travel Survey, 46% of 5 to 10 year olds walk to school, with an average trip length of 1.6 miles. For 11 to 16 year olds, 38% walk and the average journey length is 3.4miles (**Figure 6**).

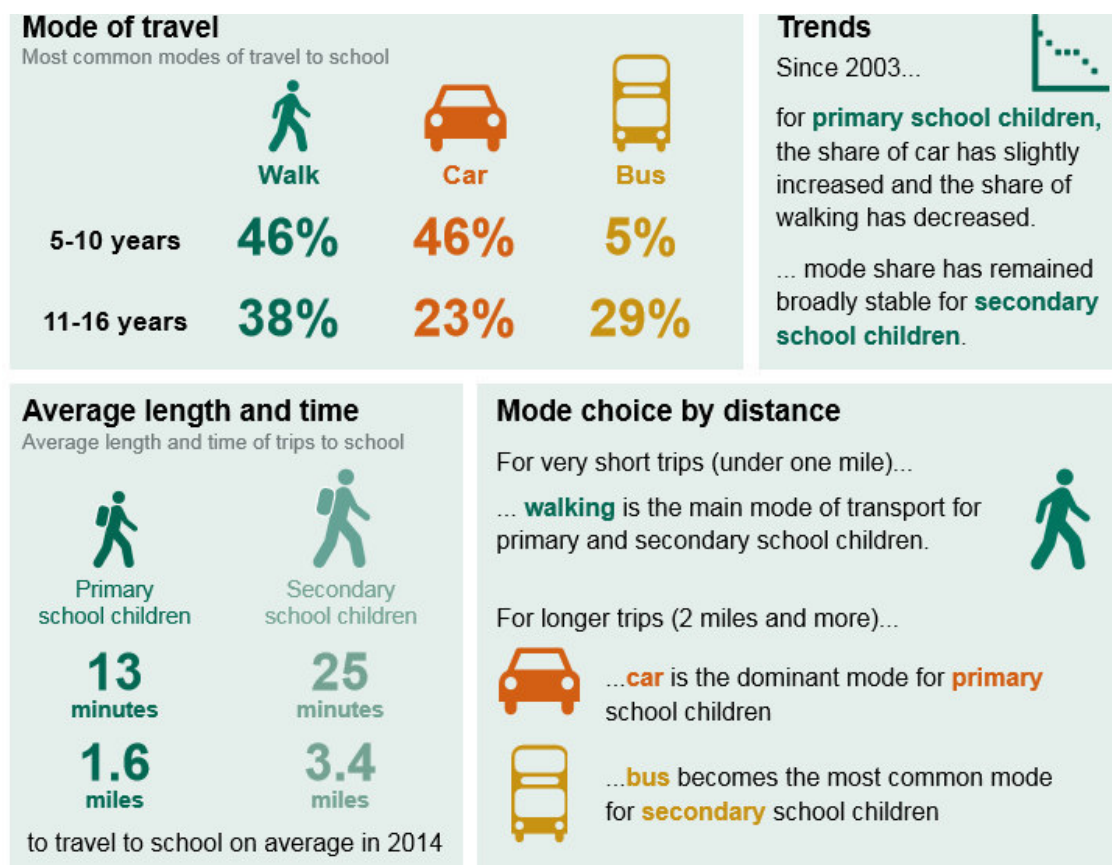


Figure 6: extract from the DfT's National Travel Survey 2014, Travel to school

- 2.13 **Figure 7** shows crow fly catchments from the development. They show that all of Crowland is within walking distance of the development, with the numerous facilities in the town centre around North Street being about 750m from the development.
- 2.14 There is no secondary school in Crowland, but South View Primary School on Postland Road is within walking distance. In the town centre there is a post office, pharmacy, Spar convenience store with cash point, Co-op foodstore, Crowland News and Food, a butcher, baker, greengrocer and hardware store, various cafes, pubs, restaurants and takeaways. There are other facilities, shops, leisure and employment destinations such as Wyevale Garden Centre, Crowland Cranes on Crease Drove, Crowland Medical Centre on Thorney Road, and Crowland Abbey.
- 2.15 Beyond Crease Drove, there is a network of street lit footways to all these locations. On the desire line to the town centre the footways start opposite Monks Meadow. To the south they start at Harvester Way.
- 2.16 New footways will be introduced on Crease Drove to fill the missing gaps.



Figure 7: walking catchment of 0.5km, 1.0km and 2km from the entrance to the site.

Accessibility for cyclists

2.17 Paragraph 2.10 above refers to an average length of 4km for cycling journeys, although journeys of up to three times these distances are not uncommon for regular commuters. Of course, an average means 50% of people are travelling further. Nevertheless, a 4km catchment from the site includes all of Crowland but not much else (**Figure 8**).

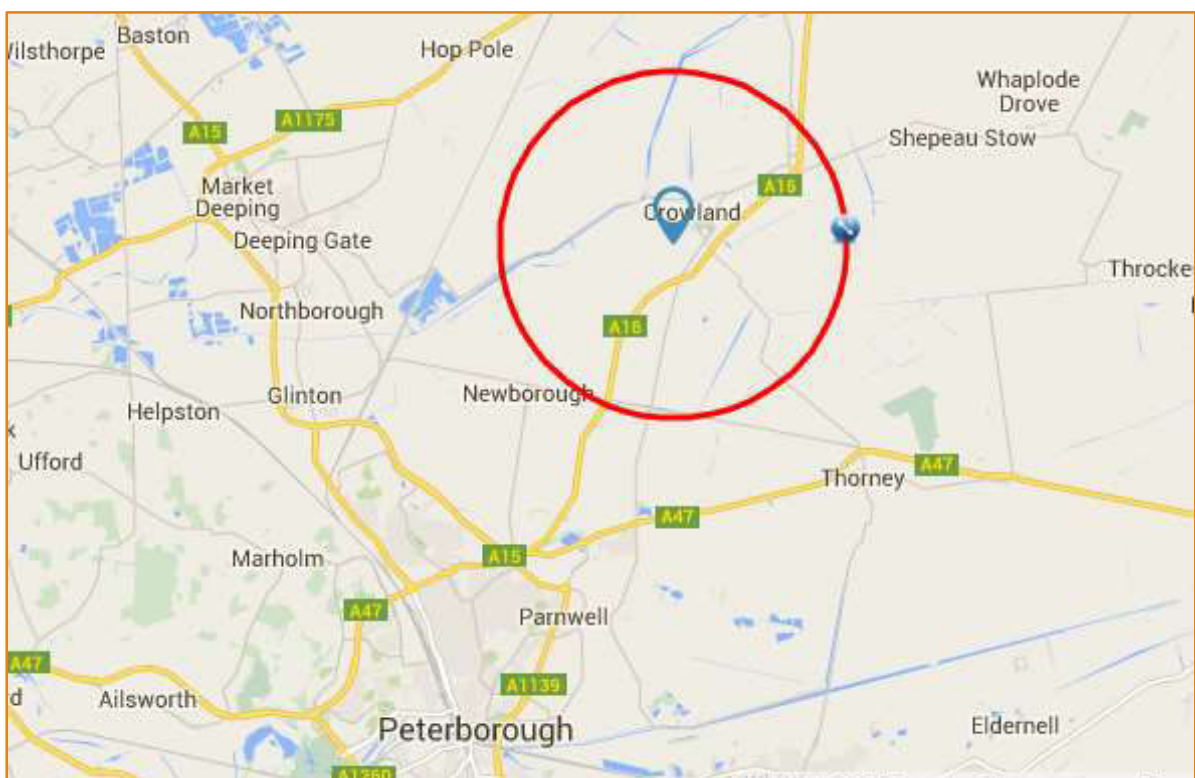


Figure 8: 4km cycle catchment.

- 2.18 Within this area there is some dedicated cycle infrastructure. National Cycle Route 12 runs through Crowland, connecting to Route 21 to the west. A number of the surrounding roads are deemed useful for cyclists as they are quiet roads (**Figure 9**).



Figure 9: local cycle infrastructure.

Accessibility by bus

- 2.19 Crowland is on the route of the InterConnect bus service 37 that runs hourly from Spalding to Peterborough. Bus stops are on Peterborough Road, which is about 660m from the site.
- 2.20 For those heading to Peterborough Monday to Friday, a first bus leaves Crowland around 640am and takes around 40 minutes to reach Queensgate Bus Station. The last bus back from Peterborough is at 8.25pm. A similar service is provided on Saturdays, with a reduced service on Sundays. Buses also run on Saturday and Sundays (**Figure 10**).



37 Spalding - Peterborough

Stagecoach in Peterborough - InterConnect

The information on this timetable is expected to be valid until at least 6th July 2016. Where we know of variations, before or after this date, then we show these at the top of each affected column in the table.

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Spalding, Bus Station (Bay 4)	—	0710	0910	then at	10	1510	1615	1745	1945
Cowbit, adj Church	—	0727	0927	these	27	1527	1632	1802	2002
Crowland, opp The Gardens	0639	0739	0939	mins	39	1539	1644	1814	2014
Crowland, adj Jareys Close	0641	0741	0941	past	41	1541	1646	1816	2016
Eye, adj St Matthews Church	0656	0756	0956	each	56	1556	1701	—	2031
Peterborough, Queensgate Bus Station (Bay 16)	0719	0819	1019	hour	19	1619	1724	—	2054

Saturdays

Spalding, Bus Station (Bay 4)	—	0810	then at	10	1510	1615	1745	1945
Cowbit, adj Church	—	0827	these	27	1527	1632	1802	2002
Crowland, opp The Gardens	0739	0839	mins	39	1539	1644	1814	2014
Crowland, adj Jareys Close	0741	0841	past	41	1541	1646	1816	2016
Eye, adj St Matthews Church	0756	0856	each	56	1556	1701	—	2031
Peterborough, Queensgate Bus Station (Bay 16)	0819	1019	hour	19	1619	1724	—	2054

Sundays

Spalding, Bus Station (Bay 4)	0935	1205	1405	1605
Cowbit, adj Church	0952	1222	1422	1622
Crowland, opp The Gardens	1004	1234	1434	1634
Crowland, adj Jareys Close	1006	1236	1436	1636
Eye, adj St Matthews Church	1021	1251	1451	1651
Peterborough, Queensgate Bus Station (Bay 16)	1044	1314	1514	1714



37

Peterborough - Spalding

Stagecoach in Peterborough - InterConnect

The information on this timetable is expected to be valid until at least 6th July 2016. Where we know of variations, before or after this date, then we show these at the top of each affected column in the table.

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Peterborough, Queensgate Bus Station (Bay 16)	—	0725	0855	then at	55	1455	1625	1725	1825	2025
Eye, opp St Matthews Church	—	0746	0916	these	16	1516	1646	1746	1846	2046
Crowland, adj Jareys Close	0631	0801	0931	mins	31	1531	1701	1801	1901	2101
Crowland, adj The Gardens	0633	0803	0933	past	33	1533	1703	1803	1903	2103
Cowbit, opp Church	0644	0814	0944	each	44	1544	1714	—	1914	—
Spalding, Bus Station (Bay 4)	0704	0834	1004	hour	04	1604	1734	—	1934	—

Saturdays

Peterborough, Queensgate Bus Station (Bay 16)	—	0855	then at	55	1455	1625	1725	1825	2025
Eye, opp St Matthews Church	—	0916	these	16	1516	1646	1746	1846	2046
Crowland, adj Jareys Close	0801	0931	mins	31	1531	1701	1801	1901	2101
Crowland, adj The Gardens	0803	0933	past	33	1533	1703	1803	1903	2103
Cowbit, opp Church	0814	0944	each	44	1544	1714	—	1914	—
Spalding, Bus Station (Bay 4)	0834	1004	hour	04	1604	1734	—	1934	—

Sundays

Peterborough, Queensgate Bus Station (Bay 16)	1050	1250	1450	1720
Eye, opp St Matthews Church	1111	1311	1511	1741
Crowland, adj Jareys Close	1126	1326	1526	1756
Crowland, adj The Gardens	1128	1328	1528	1758
Cowbit, opp Church	1139	1339	1539	1809
Spalding, Bus Station (Bay 4)	1159	1359	1559	1829

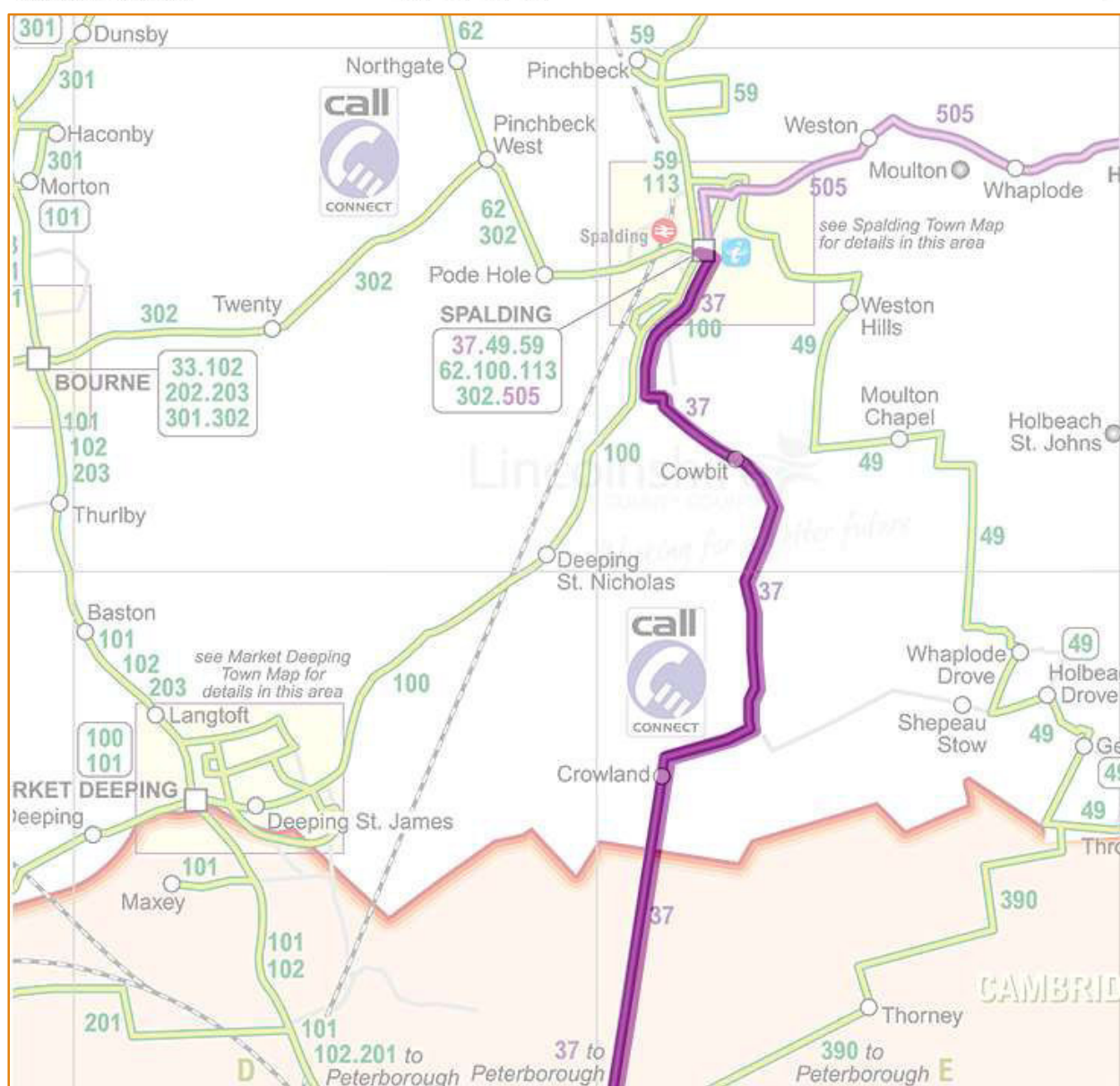


Figure 10: bus services in Crowland

3.0 PROPOSED DEVELOPMENT

Development proposal

- 3.1 An extract from the illustrative masterplan of the development proposal is below (**Figure 11**). It shows 41 residential plots. Nevertheless, as it is an illustrative masterplan, to provide a little headroom this Transport Assessment examines a development of 45 dwellings.



Figure 11: extract from the illustrative masterplan by MPJ Design Associates Ltd

- 3.2 At this outline stage the exact provisions for car parking have not been determined. However, any house builder applying for the reserved matters will be keen to provide their residents with sufficient off-street car parking to meet their needs. They will also need to satisfy LCC's requirements. Hence, the demand for on-street parking would be minimised and in that way vehicles will not block roads and footways and inconvenience pedestrians and cyclists.
- 3.3 The illustrative masterplan shows that the development could expand around a central spine road with cul-de-sacs and private drives. Turning heads will be provided to allow refuse and delivery vehicles to turn and exit in forward gear. The internal network of roads would be overlooked by the fronting houses that have direct driveway access and would be designed to restrain vehicle speeds to 20mph. An internal network of footways would be provided adjacent to the internal highways that connect to the off-site network.

Access

- 3.4 The proposed development would be accessed from Crease Drive via a new priority controlled T-junction (**drawing number ADC1220/001B in Appendix A**). The new access road would be 4.8m wide, with 2m wide footways on both sides, and 6m kerb radii where it connects with Crease Drive. Unobstructed visibility splays of 2.4 x 43m are demonstrated, in accordance with the 30mph speed limit on Crease Drive.

- 3.5 The drawing also shows the widening of Crease Drove along its length from Monks Meadow to Harvester Way. The Crease Drove carriageway, and verges either side, are public highway although the extent is not defined either on the ground or on the plan provided by LCC in **Appendix A**. The drawing shows the carriageway being widened to 5.5m wide within the public highway. Footways would be provided, within the remaining highway land and using site frontages either side.
- 3.6 A new footway will be provided from the access junction towards the town centre connecting to the existing footway at Monks Meadow. It will run along the site frontage and along the frontage to the industrial unit.

4.0 DEVELOPMENT TRAFFIC GENERATION, DISTRIBUTION AND ASSIGNMENT

Proposed use traffic generation

- 4.1 As shown on Figure 4 the existing 41 dwellings on Harvester Way generated the traffic movements shown in the table below. On a pro rata basis the 45 dwellings proposed by Mrs Hunter Shaw, the 100 dwellings proposed by Wheatley Homes, and the 100 dwellings proposed by Woodroffe will generate the traffic movements shown in the table below. The Adcocks planning application was accompanied by a Transport Statement that determined its net traffic generation once the existing use of the industrial unit was taken in to account and those figures are also shown in the table.

	arrive			depart		
survey of existing 41 dwellings on Harvester Way						
	from west	from east	total	to west	to east	total
AM peak hr	4	2	6	1	18	19
PM peak hr	3	14	17	1	0	1
proposed 45 dwellings by Mrs Hunter Shaw						
	from north	from south	total	to north	to south	total
AM peak hr	4	2	6	1	20	21
PM peak hr	3	15	18	1	0	1
proposed 100 dwellings by Wheatley Homes						
	from north	from south	total	to north	to south	total
AM peak hr	10	5	15	2	44	46
PM peak hr	7	34	41	2	0	2
proposed 45 dwellings by Adcocks Drinks Company						
	from north	from south	total	to north	to south	total
AM peak hr	-2	-6	-8	5	13	18
PM peak hr	4	11	15	-1	-2	-3
proposed 100 dwellings by Woodroffe						
	from north	from south	total	to north	to south	total
AM peak hr	10	5	15	2	44	46
PM peak hr	7	34	41	2	0	2

Traffic distribution and assignment

- 4.2 From the survey of the existing 41 dwellings on Harvester Way, reported in the table above, the following distribution pattern for the development traffic is derived:
- AM peak hr 20% to/from north 80% to/from south
 - PM peak hr 22% to/from north 78% to/from south
- 4.3 To provide a robust assessment it is assumed that all traffic routing to the south will arrive at the James Road/Peterborough Road junction. This is especially robust given the attractions in the village such as the primary school. At the James Road/Peterborough Road junction the development traffic is forecast to split in the same proportions as determined in the traffic survey. The development traffic is shown in **Figure B6 of Appendix B**.

5.0 ASSESSMENT YEAR, BACKGROUND AND TOTAL TRAFFIC

Study area

- 5.1 *Guidance on Transport Assessment* suggests a threshold of 30 two-way trips is a useful starting point for determining whether a traffic increase will have a detrimental impact. The table at paragraph 4.1 shows that the development will increase traffic flows on the roads to the north by up to 5 vehicles. On the roads to the south traffic volumes will increase by up to 22 vehicles. Hence material traffic increases are confined to the access junction on Crease Drive.
- 5.2 Nevertheless, given the request by LCC to examine the James Road/Peterborough Road junction, future year traffic flows have been determined at that junction, as described below.

Observed traffic flows and assessment year

- 5.3 As explained in Section 2, a traffic count was carried out at the James Road/Peterborough Road junction on Tuesday 19 April 2016. The results are shown on **Figure B1 in Appendix B** and are summarised below. The traffic flows show a distinct tidality and pull to the south. In the evening peak hour the flows at the junction as a whole are modest, with the highest flow being 315 vehicles travelling northbound on James Road, a flow that is only 74 vehicles in the morning peak hour. However, there is a southbound flow on James Road in the morning of 921 vehicles, which is only 83 vehicles in the evening. As the Parish of Crowland had a population in the 2011 Census of 4,211 persons, this would suggest a significant number of southbound drivers are diverting from the A16 to James Road to bypass congested junctions.

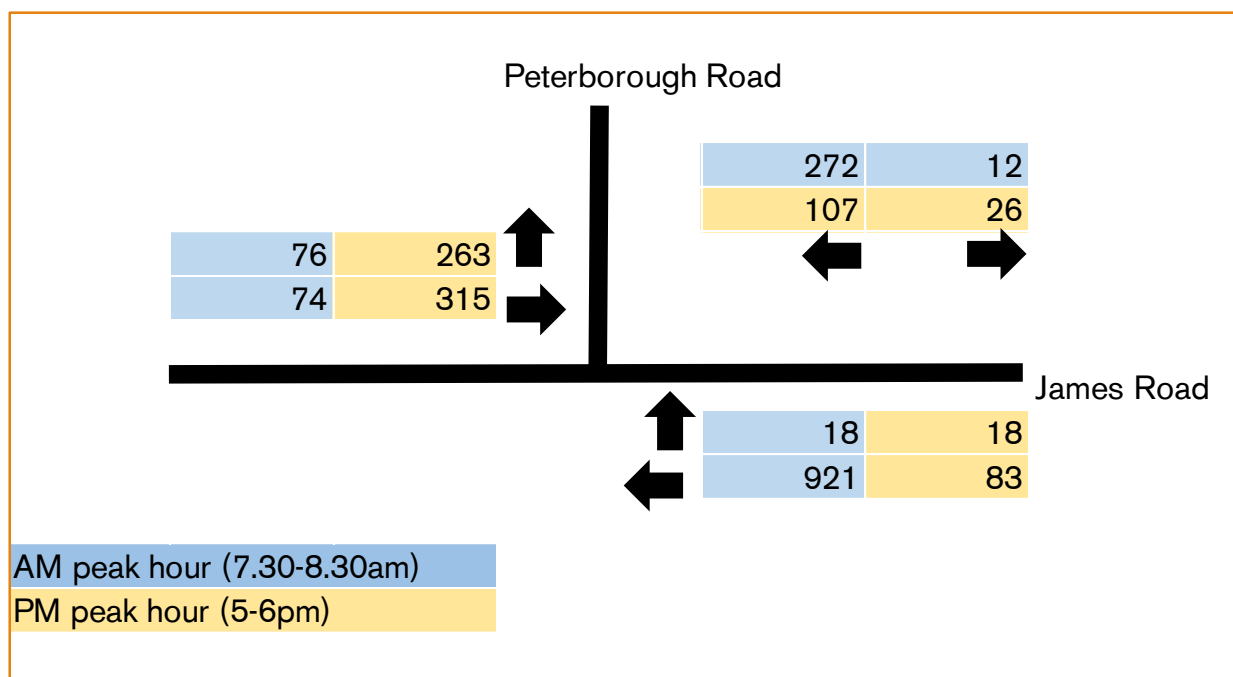


Figure 12: 2016 surveyed traffic at the James Road/Peterborough Road junction

- 5.4 *Guidance on Transport Assessment* suggests the assessment year should be five years after the date of registration of the planning application, which will be 2021. Hence, the 2016 survey traffic was increased to 2021 levels using TEMPRO growth rates (AF09 Dataset, Crowland (32UF5), all area), which show around 9% growth in traffic in five years:
- 2016 to 2021 AM peak = 1.0901 PM peak = 1.0948
- 5.5 These growth rates were applied to the 2016 survey traffic to give the 2021 factored survey traffic shown in **Figure B2 of Appendix B**.

Committed development

- 5.6 The only significant nearby developments that should be taken in to account are the Wheatley Homes development of 100 houses on Harvester Way, the 45 houses on Crease Drove applied for by Adcocks Drinks Company, and the 100 houses planned by Woodroffe on Crease Drove. While these developments are not yet permitted, and are therefore not committed, there is a reasonable prospect of their coming forward. To provide a comprehensive assessment of the cumulative scenario they are assumed to be committed development and are added in to the background traffic forecast for 2021. The traffic flows at James Road/Peterborough Road deriving from these developments are shown in **Figures B4, B5 and B7 of Appendix B**.

6.0 HIGHWAY IMPACT

Crease Drove

6.1 As a result of the development, the two-way traffic flows on Crease Drove will alter as follows.

two-way traffic volumes on Crease Drove	AM pk hour (8-9am)	PM pk hour (5-6pm)
2014 existing	56	65
2021 background (with Wheatley, Adcocks, and Woodroffe)	+68 = 124	+52 = 117
2021 with Hunter Shaw development	+22 = 148	+15 = 132

6.2 The capacity of a single track lane with passing places is between 100 and 300 vehicles per hour⁵. Hence the additional development traffic would be within the capacity of a single track lane. A peak hour two-way flow of 148 vehicles is an average of one every 24 seconds. The narrow width of Crease Drove is 405m long, which takes 30 seconds to drive at 30mph. It is likely, therefore, that cars coming and going along Crease Drove will encounter a car coming the opposite direction. Hence Crease Drove should be widened be two lanes wide, as described at paragraph 3.5. An equitable way will need to be found of dividing the cost between the various developers (Hunter Shaw, Wheatley Homes, Adcocks Drinks, and Woodroffe).

James Road/Peterborough Road T-junction

6.3 The James Road/Peterborough Road junction is a large priority controlled T-junction. James Road varies between around 9m to 9.5m wide and although it does not have a right turn lane there is some storage space for right turning vehicles. There is a separate left turn slip from James Road in to Peterborough Road.



Figure 13: James Road/Peterborough Road T-junction

⁵ Richard Sweet, Somerset County Council, presentation to TRICS Conference, November 2012

6.4 A model of the junction was built using PICADY and tested with the 2021 traffic forecasts. The results are summarised in the table below and the PICADY outputs are in **Appendix D**.

	AM peak hour			PM peak hour		
	queue (PCU)	delay (secs)	RFC	queue (PCU)	delay (secs)	RFC
existing junction - 2021 background (inc Wheatley Homes, Adcocks, and Woodroffe)						
left out of P'boro Rd (B-C)	0.09	17.19	0.08	0.05	5.81	0.05
right out of P'boro Rd (B-A)	5.64	50.45	0.87	0.27	7.80	0.22
right in to P'boro Rd (C-AB)	0.13	3.34	0.07	0.06	5.45	0.04
existing junction - 2021 background + Hunter Shaw development						
left out of P'boro Rd (B-C)	0.21	39.67	0.18	0.05	5.81	0.05
right out of P'boro Rd (B-A)	7.62	65.10	0.91	0.27	7.81	0.22
right in to P'boro Rd (C-AB)	0.13	3.34	0.07	0.06	5.46	0.05

6.5 Mirroring the traffic counts, in the evening peak hour the junction will operate at only 22% of capacity. In the morning peak hour, the high southbound flow on James Road reduces the available gaps for traffic emerging from Peterborough Road. Hence the right turn out of Peterborough Road will operate at 87% of capacity with background traffic, becoming 91% with development traffic. The longest queue will increase from 6 to 8 vehicles. This is not a severe impact and, as described above, the high traffic flows at the junction appear to be caused by rerouting of traffic from the A16. It is not the responsibility of the developer to resolve that issue, and the development will increase traffic at the junction by just 20 vehicles. Hence mitigation works are not necessary.

7.0 PERSON TRIPS

Modal split and person trip generation

- 7.1 A modal split for the trips generated by the proposed residential development was derived from the 2011 Census Method of Travel to Work data. The Census provides information on the travel mode of the resident population, aged between 16 and 74 years, travelling to work from and within a ward. The site is in the Crowland and Deeping St Nicholas Ward and the development's residents will have a similar modal split to the other residents of the ward given the location of the site, the areas contained within the pedestrian and cycle catchment areas, the bus services, and the accessibility of the local highway network.
- 7.2 The figures recorded in the Census are shown in the table below. From these were removed those that work at home, are unemployed, or 'other'. A modal split was then determined. The proposed development is forecast to generate 27 traffic movements during the morning peak hour. Applying that figure to the modal split allows the demand to travel by the other modes to be determined.

Ward: Crowland and Deeping St Nicholas	2011 Census figures	Census figures adjusted	modal split	applied to proposed development
work mainly at or from home	433			
underground, metro, light rail, tram	2	2	0.1%	0
train	55	55	2.0%	1
bus, minibus or coach	46	46	1.7%	1
taxi	1	1	0.0%	0
motorcycle, scooter or moped	17	17	0.6%	0
driving a car or van	2,237	2,237	82.7%	27
passenger in a car or van	156	156	5.8%	2
bicycle	54	54	2.0%	1
on foot	136	136	5.0%	2
other method of travel to work	9			
not in employment	1,350			
all categories: Method of travel to work	4,496	2,704	100.0%	34

Impact of additional person trips on the local infrastructure

- 7.3 The table above details the likely increase in pedestrian, cycle, and public transport trips as a result of the proposed 45 houses. There would be an additional 2 pedestrian trips, 1 cycle trip, and 1 bus trip in the morning peak hour.
- 7.4 Section 2 of this report detailed the existing accessibility of the site by walking and cycling and the infrastructure that would cater for the journeys. Section 3 explained the proposals that would enhance pedestrian and cycle accessibility. The existing and proposed provisions would adequately accommodate the increase in demand created by the proposed development.

Travel Plan

- 7.5 In accordance with Government Guidance a planning application for a development of over 80 houses should be accompanied by not only a Transport Assessment such as this, but also a Travel Plan. In this case, given the modest scale of the development, a Travel Plan is not required.

8.0 SUMMARY AND CONCLUSIONS

- 8.1 The applicant, Mrs Hunter Shaw, commissioned ADC Infrastructure Limited to provide transport and highways advice in support of an outline planning application for up to 45 houses on a site east of Crease Drove in Crowland.
- 8.2 The development would be within walking distance of all the town's facilities, including South View Primary School on Postland Road. The development would be around 750m from the town centre where there is a post office, pharmacy, Spar convenience store with cash point, Co-op foodstore, Crowland News and Food, a butcher, baker, greengrocer and hardware store, various cafes, pubs, restaurants and takeaways. There are other facilities, shops, leisure and employment destinations such as Wyevale Garden Centre, Crowland Cranes on Crease Drove, Crowland Medical Centre on Thorney Road, and Crowland Abbey. The local pedestrian infrastructure is good with street lit footways beside all the roads and on the desire lines to the local amenities. These facilities would be enhanced by the development, with the provision of footways along Crease Drove linking the development to all locations. The development would generate a demand for two pedestrian trips in a peak hour, which could be accommodated by the existing and proposed infrastructure.
- 8.3 There is some dedicated cycle infrastructure nearby with National Cycle Route 12 running through Crowland. A number of the surrounding roads are deemed useful for cyclists as they are quiet roads. Apart from Crowland there isn't a significant population within cycling distance. The development would create a demand for one additional cycle trip in a peak hour.
- 8.4 Crowland is on the route of the InterConnect bus service 37 that runs hourly from Spalding to Peterborough. Bus stops are on Peterborough Road, which is about 660m from the site. The development would generate a demand for one additional bus trip in a peak hour, which could be accommodated by this existing service.
- 8.5 The development is therefore in a sustainable location that is accessible by all modes of transport. The masterplan for the development will incorporate provisions that cater for the needs of pedestrians and cyclists.
- 8.6 The development will be accessed from a new T-junction on Crease Drove, shown on drawing ADC1220/001B. The junction would be designed to standard with adequate visibility splays.
- 8.7 The development will generate up to 27 traffic movements in a peak hour. Some of that traffic will route to and from the north but most will route to and from the south along Crease Drove. With all the development planned either side of Crease Drove, the flows along it are set to increase from 65 vehicles during the evening peak hour to 132 vehicles.
- 8.8 Crease Drove is a narrow road and its carriageway would be widened to 5.5m wide along its length from Monks Meadow to Harvester Way. All widening would be within the public highway. Footways will be provided, within the remaining highway land and using site frontages either side. An equitable way will need to be found of dividing the cost between the various developers (Hunter Shaw, Wheatley Homes, Adcocks Drinks Company, and Woodroffe).
- 8.9 As a worst case, it is assumed that all development traffic to and from the south will pass through the James Road/Peterborough Road junction. The operation of that junction was assessed using traffic forecasts for 2021, which examine a cumulative scenario taking account of the 100 houses being applied for by Wheatley Homes, the 45 by Adcocks Drinks, and the 100 houses by Woodroffe. In a 2021 evening peak hour the junction will operate at only 22% of capacity. In the morning peak hour, the high southbound flow on James Road reduces the available gaps for traffic emerging from Peterborough Road. Hence the right turn out of Peterborough Road will operate at 87% of capacity with 2021 background traffic, becoming 91% with development

traffic. The longest queue will increase from 6 to 8 vehicles. This is not a severe impact and the high flows at the junction appear to be caused by rerouting of traffic from the A16. It is not the responsibility of the developer to resolve that issue, and the development will increase traffic at the junction by just 20 vehicles. Hence mitigation works are not necessary.

8.10 The NPPF⁶ requires that sustainable development should be granted planning permission, and on transport matters that is when:

- *“the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure*
- *safe and suitable access to the site can be achieved for all people, and*
- *improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of developments are severe.”*

8.11 It is clear that in isolation, or in combination with other promoted sites along Crease Drove, all these policy objectives are achieved and the development therefore accords with the NPPF and should not be prevented on transport grounds.

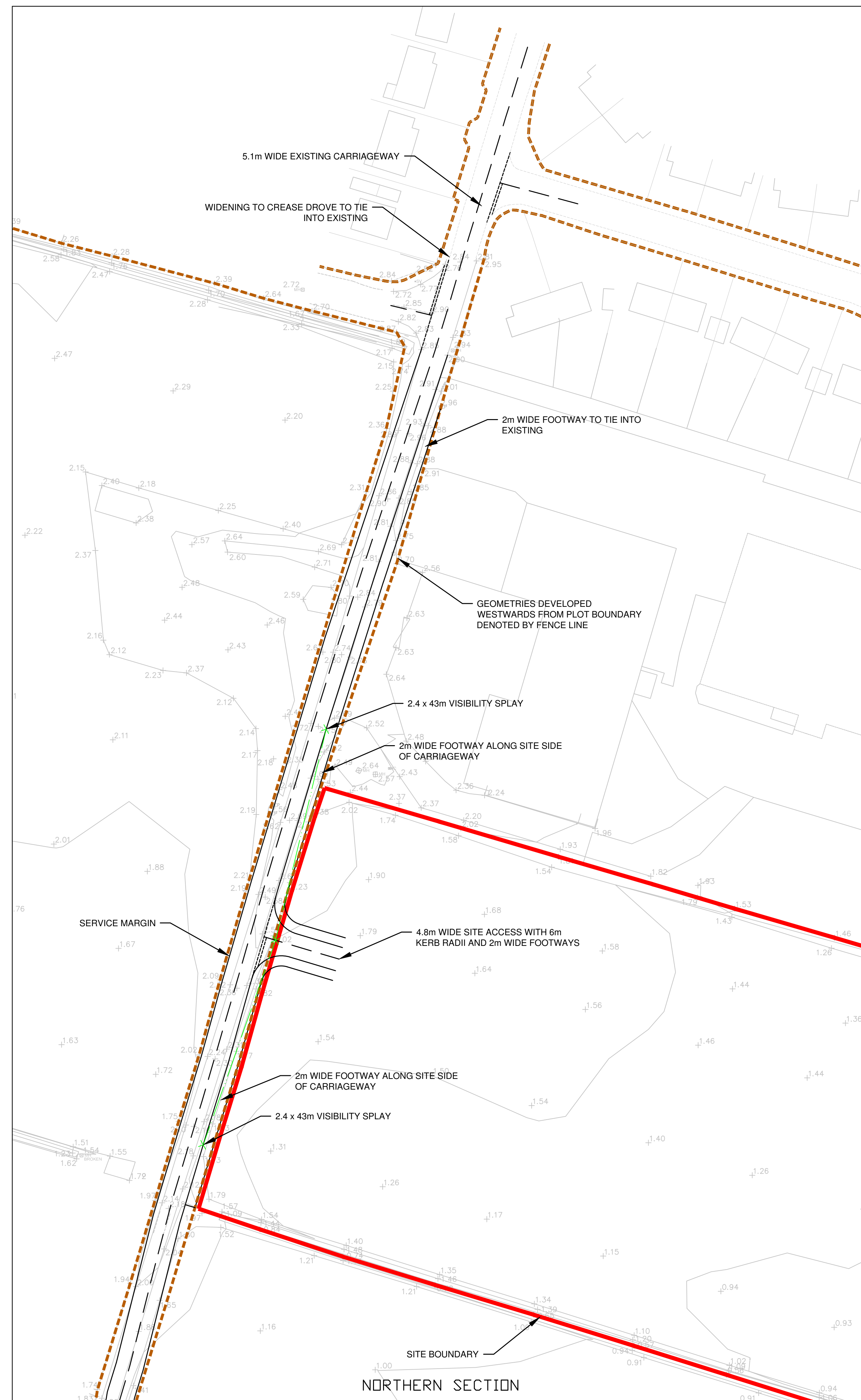
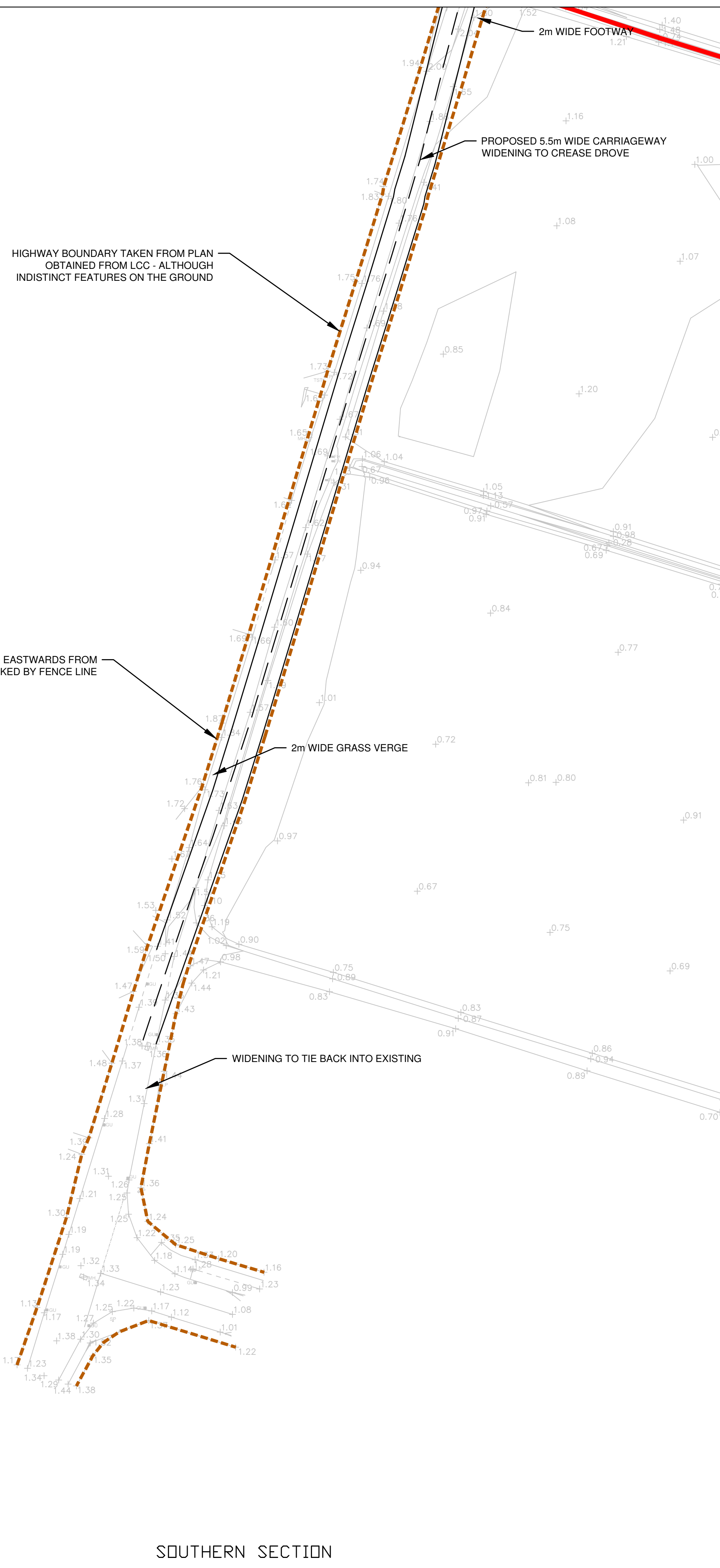
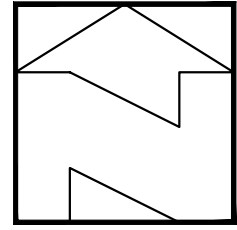
⁶ Paragraph 32, *National Planning Policy Framework* (Department for Communities and Local Government, March 2012)

APPENDIX A

**DRAWING ADC1220/001B
PROPOSED ACCESS AND CREASE DROVE WIDENING**

PLAN OF EXTENT OF PUBLIC HIGHWAY

ILLUSTRATIVE MASTERPLAN



B	Revised alignment	12/04/16
A	Design onto topo survey	11/04/16
Rev	Description	Date

Client:

Project:
Proposed Residential Development
Crease Drove, Crowland

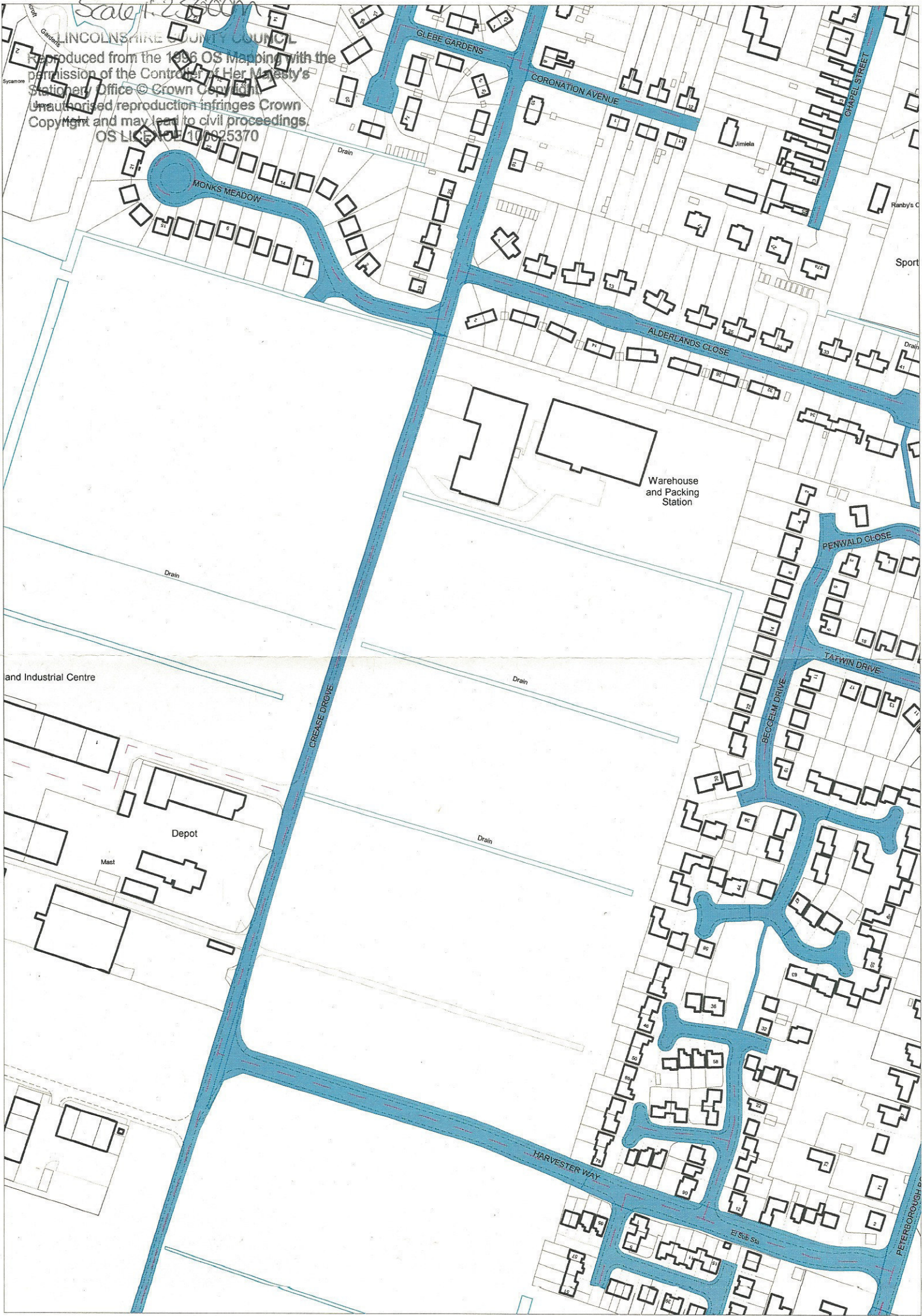
Title:
Proposed Access Junction Layout
and Highway Works



Drg Size: A1	Scale: 1:500	Date: 24/03/2016
Drg No: ADC1220/001	Rev: B	

Scale 1:25000

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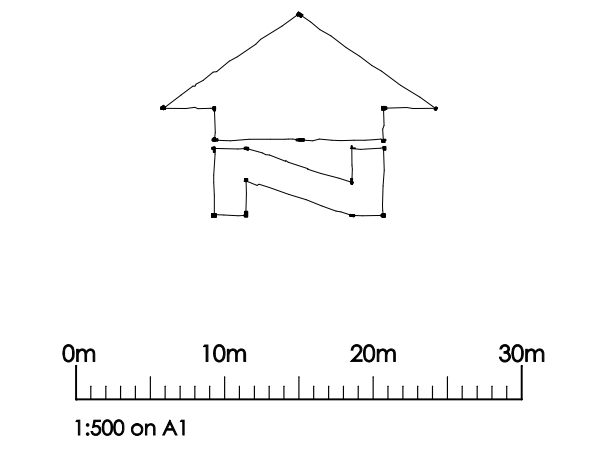
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NOISE ATTENUATION MEASURES FOUND TO BE APPROPRIATE TO BE UNDERTAKEN IN ACCORDANCE WITH A FORMAL NOISE ASSESSMENT.

LEGEND:

- 1.5m EXISTING CONTOURS at 0.5m intervals
- EXISTING HEDGEROW
- NEW HEDGE PLANTING
- NEW TREE PLANTING (indicative only)
- DENOTES PLOTS' FENESTRATION ACROSS TWO FRONTAGE ELEVATIONS

GROSS SITE AREA:	1.61 hectares
Less: PUBLIC AMENITY SPACE: (14% of gross site area)	0.22 h
6m WIDE STAND-OFF FROM IDB ASSET:	0.05h
DEVELOPABLE AREA:	1.34 h
41no. units @ 30/hectare	



produced in association with ...
ibaplanning

Client
Mrs T Hunter-Shaw

Job
proposed residential development off
Crease Drove
CROWLAND

Title
Illustrative Layout Plan

Scale 1:500 Dwg No 16/179-03
Date May 2016

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