

**PROPOSED DISCOUNT FOODSTORE
HOSTMOOR AVENUE, MARCH**

Aldi Stores Ltd
Transport Assessment

May 2021

Proposed Discount Foodstore
Aldi, March, Cambridgeshire, PE15 0AY

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1.0 INTRODUCTION

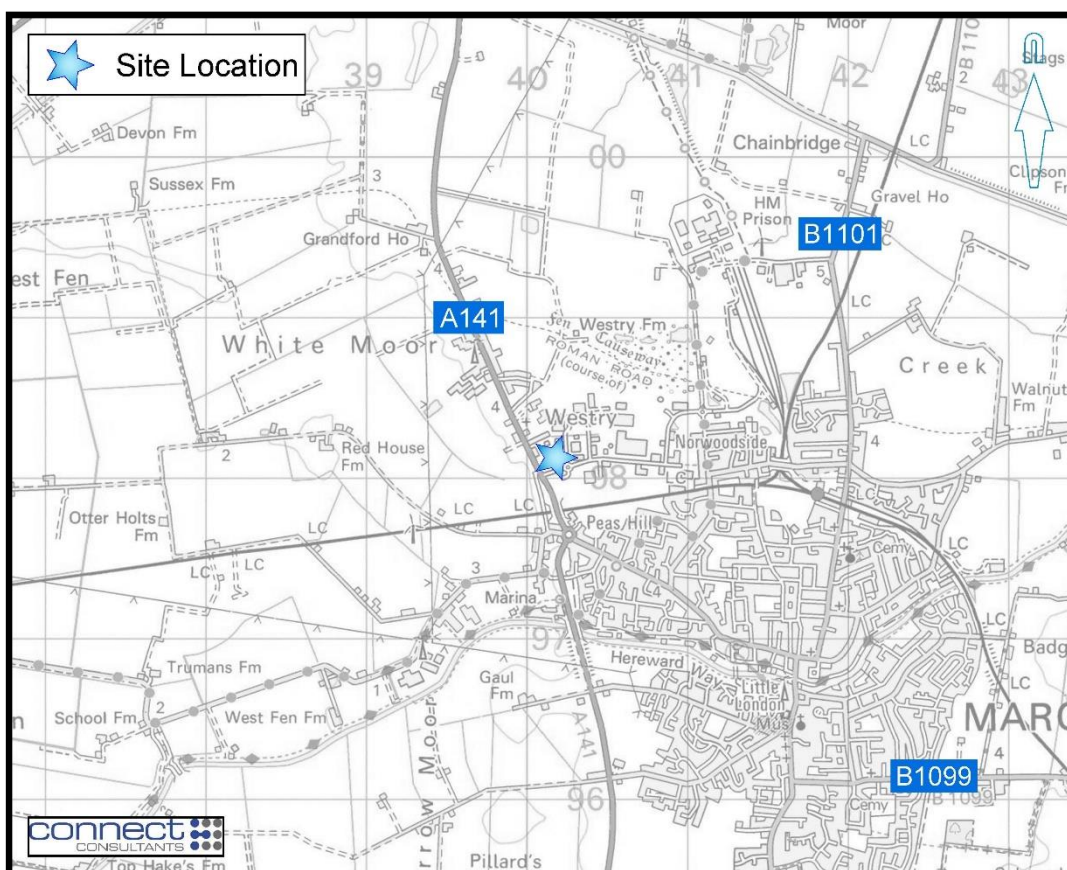
1.1 Appointment of Connect Consultants

- 1.1.1 Connect Consultants Limited is a firm of transport planning and highway design consultants that have been instructed by Aldi Stores Limited in relation to their proposed new Aldi discount foodstore on Hostmoor Avenue in March, Cambridgeshire.

1.2 Site Location

- 1.2.1 The proposal site is located on Hostmoor Avenue in northwest March. The site is currently occupied by two separate plots, divided along its centre in an east-west direction, operating under B2 and B8 land use classes. The southernmost plot is accessed by a priority junction on the north side of Hostmoor Avenue and the northernmost plot is accessed by a priority junction on the west side of Martin Avenue.
- 1.2.2 The proposal site is bound to the north by Alpine Health Club, to the east by Martin Avenue, to the south by Hostmoor Avenue, and to the west by Gipsy Lane.
- 1.2.3 The location of the proposal site, in the context of the urban area, is presented at Figure 1.1 below.

Figure 1.1 – Site Location Plan



Source: Promap

- 1.2.4 There are a number of retail, commercial and industrial units within the vicinity of the site, as well as the main residential area of March located southeast.

1.2.5 A Tesco superstore is located southeast of the proposal site and a Tesco Petrol Filling Station (PFS) is situated south of the site, both of which are accessed via the south arm of the Hostmoor Avenue / Martin Avenue / Tesco Access Roundabout (hereafter known as 'Tesco Access Roundabout'). A B&M store with garden centre and a builders' merchant are situated east of the site.

1.2.6 Figure 1.2 below identifies the context of the site in relation to the local area.

Figure 1.2 – Site in its Local Context



Source: Google

1.3 Development Proposals

1.3.1 The development proposals are shown on the plan provided at Appendix 1. The proposals include the development of an Aldi foodstore with site composition including the following:-

- An Aldi discount foodstore with a Gross External Area (GEA) of 1,881 sq.m and a Gross Internal Area (GIA) of 1,804 sq.m.
- Car and cycle parking provisions.

1.3.2 The proposed site access arrangements are shown on the site access layout plan at Appendix 2. A brief description of the site access arrangements is set out below:-

- The existing site access junctions will be removed and a new access in the form of a priority junction will be constructed on the north side of Hostmoor Avenue west of the location of the existing access. Right-turn exit movements from the site will be prohibited.
- Service vehicles will access the site via the proposed priority junction access junction on Hostmoor Avenue.

- Pedestrian access to the site will be from the existing footway on the north side of Hostmoor avenue via the proposed access junction.

1.4 National Planning Policy Framework

- 1.4.1 This report section provides a brief overview of the national planning policy context and objectives.

National Planning Policy Framework (NPPF), February 2019

- 1.4.2 A revised NPPF was published on 19th February 2019. It sets out the Government's planning policies for England and sets out a framework for local authorities to produce their own local plans.

- 1.4.3 The key purpose of the NPPF is to contribute to the achievement of sustainable development. It sets out three overarching interdependent objectives as, a) an economic objective, b) a social objective, and c) an environmental objective.

- 1.4.4 At its heart, the NPPF maintains its presumption in favour of sustainable development.

- 1.4.5 Chapter 9 *Promoting sustainable transport* sets out at paragraph 106 that,

"Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network,..."

- 1.4.6 Paragraph 108 addresses how development proposals are to be considered. It sets out that,

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users; and

c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."

- 1.4.7 Paragraph 109 states,

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

Fenland District Council Local Plan (Adopted May 2014)

- 1.4.8 The Fenland District Council (FDC) Local Plan was adopted by the council in May 2014 and sets out the policies and strategies for growth and regeneration in Fenland until 2031.

- 1.4.9 The standards for car parking provision pertinent to retail uses are set out at Appendix A of the Local Plan, and the standards for cycle parking provision are outlined in Policy LP15 of the Local Plan.

- 1.4.10 Reference has also been made to LP15(C), where development proposals should demonstrate adherence to the following criteria:

- *"Development on a site should be located and designed so that it can maximise accessibility and help to increase the use of non-car modes."*
- *Proposals which include new public highway should ensure such new highway complements and enhances the character of the area, possibly through the preparation of a public realm strategy for larger development schemes."*
- *Proposals of one dwelling or more should be accompanied by a Transport Statement, or, if the proposal is likely to result in significant transport implications, by a Transport Assessment and Travel Plan. The coverage and detail of this should reflect the scale of development and the extent of the transport implications..."*
- *"Development schemes should provide well designed, safe and convenient access for all, giving priority to the needs of pedestrians, cyclists, people with impaired mobility and users of public transport by providing a network of pedestrian and cycle routes and green corridors including habitat connectivity (linking to existing routes where opportunities exist) that give easy access and permeability to adjacent areas."*
- *Development schemes should provide well designed car and cycle parking appropriate to the amount of development proposed, ensuring that all new development meets the Council's defined parking standards as set out in Appendix A."*

1.4.11 The Local Plan does not include disabled parking standards, and so the standards set out in BS 8300:2009 have been used.

1.5 Pre-application

- 1.5.1 Prior to the submission of the planning application associated with this development, detailed pre-application discussions were held with Cambridge County Council (CCC), acting as the Local Highway Authority, in which the methodologies and assumptions upon which this TA is based were agreed.
- 1.5.2 An initial TA produced by Connect was issued to CCC in June 2020 for pre-application review and seven subsequent Technical Notes (TN) in response to correspondence from CCC in the form of consultation reports, emails and video meetings.
- 1.5.3 For simplicity, the Connect TNs have been collated and can be viewed at Appendix 3 and the relevant correspondences provided by CCC are provided at Appendix 4. These will be referenced throughout the TA.

1.6 Report Overview

1.6.1 The remainder of this report is divided into five further sections, which are as follows:-

Section 2.0 Site Transport Context

1.6.2 This section of the report provides details of the site context, including its accessibility by all relevant transport modes.

Section 3.0 Proposed Development

1.6.3 The various components of the development proposal, including the site access arrangements and parking provision, are described within this section of the report.

Section 4.0 Traffic Assessment

1.6.4 This report section provides an assessment of the vehicular attraction of the proposed development and its traffic effects.

Section 5.0 Junction Capacity and Collision Analysis

1.6.5 The results of the traffic assessment have been used to inform junction capacity and collision analysis, and the methodology and results are outlined in this section of the report.

Section 6.0 Summary & Conclusions

1.6.6 A summary and the conclusions of the report are provided in this section.

2.0 SITE TRANSPORT CONTEXT

2.1 Introduction

- 2.1.1 This section of the report considers the accessibility of the site in terms of a range of transport modes.

2.2 Pedestrian Access

- 2.2.1 The Department for Transport's (DfT) document titled 'Manual for Streets' dated 2007 provides guidance in relation to walk distances. Section 4.4 gives the following advice:-

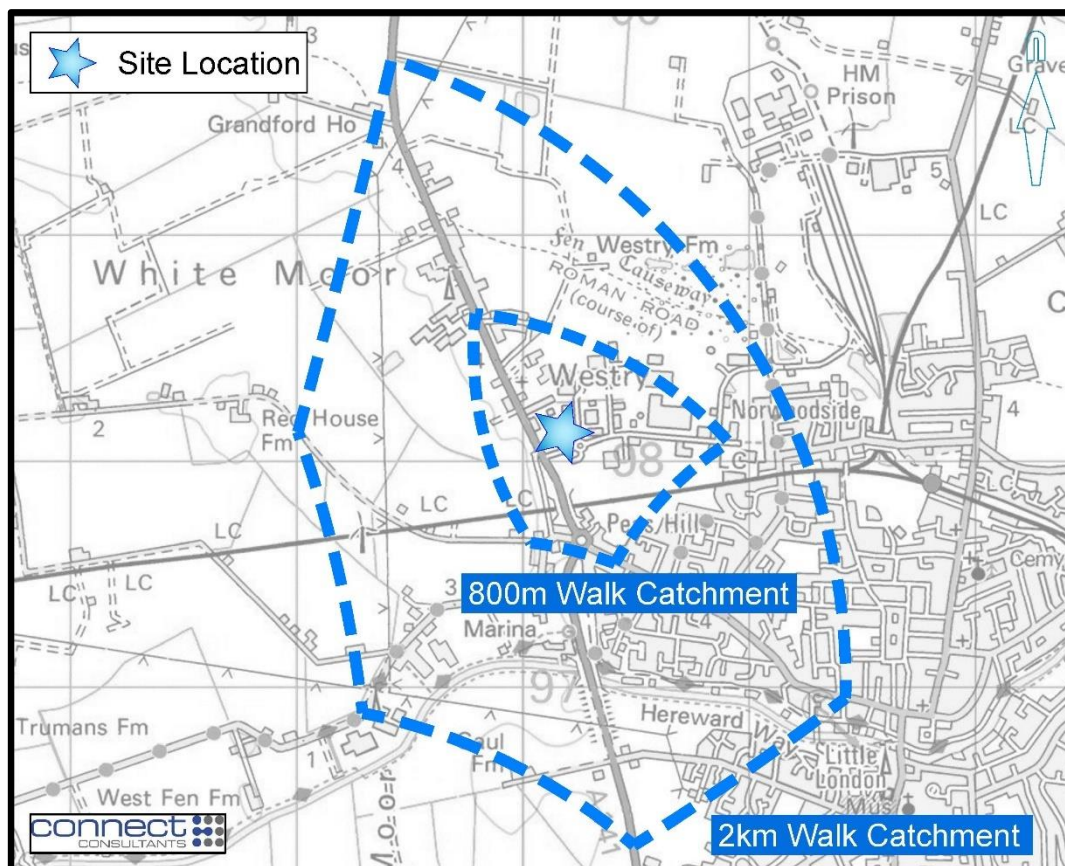
"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot."

- 2.2.2 The CIHT document 'Planning for Walking' (April 2015) reiterates the advice presented in 'Manual for Streets'; Section 6.4 of 'Planning for Walking' states the following:

"Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes' walking distance (around 800 metres). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating. Developers should consider the safety of the routes (adequacy of surveillance, sight lines and appropriate lighting) as well as landscaping factors (indigenous planting, habitat creation) in their design."

- 2.2.3 Furthermore, 'Planning for Walking' indicates that approximately 80% of journeys shorter than 1 mile (1.6km) are made wholly on foot.
- 2.2.4 Table 3.2 of The Institute of Highways and Transportation (IHT) guidance document titled 'Providing for Journeys on Foot' identifies a maximum walk distance of 2.0km for commuter, school and sightseeing walk trips, 800m for town centre walk trips and 1.2km for trips elsewhere.
- 2.2.5 The actual distance that people will be prepared to walk will vary depending on the trip purpose and other factors such as the presence of road crossings, terrain, and the attractiveness of the environment. For retail trips, the likely maximum walk distance is 800m due to the fact that shoppers will be carrying bags on their return journey, while for work based trips to the foodstore, people are likely to be prepared to walk further.
- 2.2.6 Based on a maximum walk distance of 800m and 2km, the approximate walk catchments are shown at Figure 2.1 below.

Figure 2.1 – 800m and 2km Walk Catchment



Source: Promap

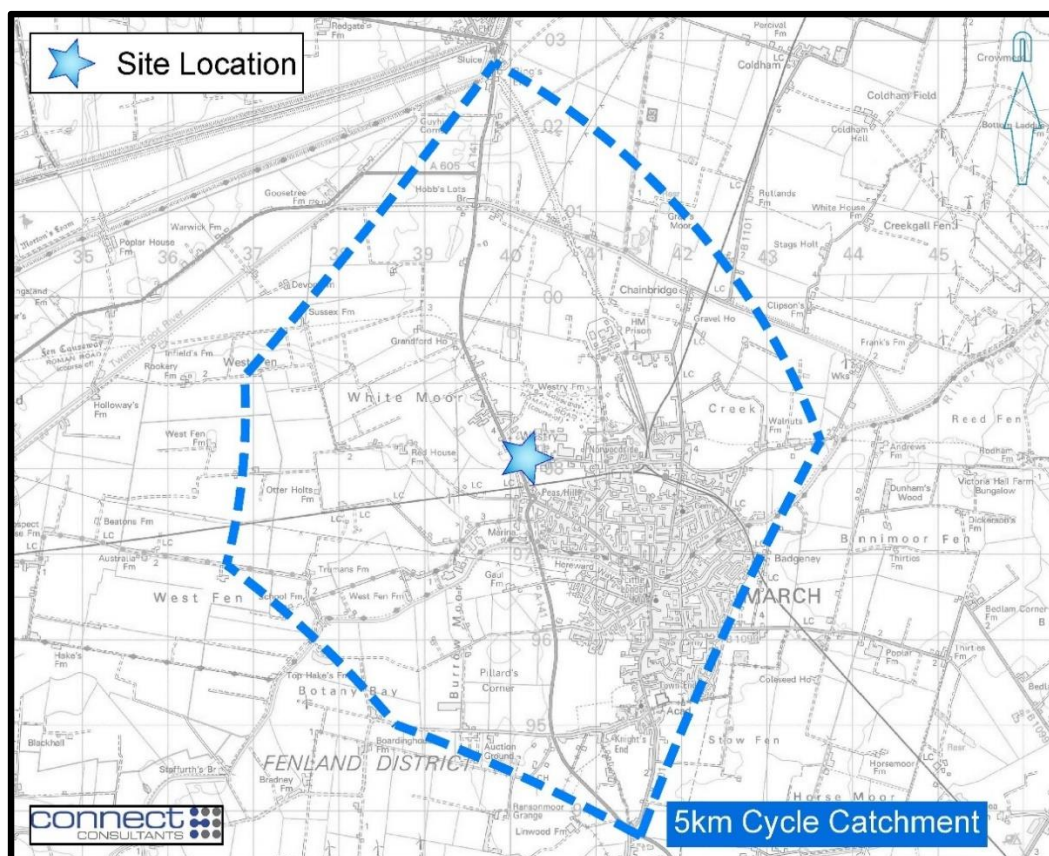
- 2.2.7 The walk catchments above indicate that there are a small number of residences on the A141 Wisbech Road within the 800m customer walk catchment area and a significant number of residences situated in the 2km walk catchment. There is a substantial staff pool residing within the 2km walk catchment.
- 2.2.8 Pedestrian access into the site will be from the existing footway on the north side of Hostmoor Avenue via the proposed access junction. As part of proposals, the existing traffic island on the Hostmoor Avenue (west) arm of the Tesco Access Roundabout will be upgraded to a pedestrian refuge island with dropped kerbs and tactile paving.
- 2.2.9 Hostmoor Avenue is flanked on both sides by continuous footways and can be crossed via a refuge island with dropped kerbs on the A141 / Hostmoor Avenue Priority Junction approximately 80m west of the proposed site access junction. The north flanking footway on Hostmoor Avenue has an average width of 1.9m and the south flanking footway has an average width of 2.0m.
- 2.2.10 As part of proposals, the existing pedestrian facilities on Hostmoor Avenue at the A141 / Hostmoor Avenue Priority Junction will be improved with staggered signal-controlled crossings and tactile paving.
- 2.2.11 The south arm of the Tesco Access Roundabout can be crossed via a refuge island with dropped kerbs and tactile paving.

- 2.2.12 The A141 Wisbech Road is flanked on its east side by a continuous footway that provides pedestrian access between the proposal site and the northwest of March. The section of footway north of the A141 / Hostmoor Avenue Priority Junction measures approximately 2.5m in width and south of the junction the footway measures approximately 1.6m in width.
- 2.2.13 The north of March is accessible via a footpath from Hostmoor Avenue approximately 950m east of the proposed site access.
- 2.2.14 In light of the local pedestrian facilities, the site is well connected to the local pedestrian network with opportunities for customers to make trips by foot. There are also good opportunities for future staff members to walk to work.

2.3 Cycling

- 2.3.1 The 2019 National Travel Survey specified average journey lengths, by cycle in England of c.5.3km. The CIHT document titled 'Planning for Cycling' (October 2014) indicates that 80% of cycling trips are less than five miles (8km) and 40% are less than two miles (3.2km). This suggests that cycling can offer an alternative to car travel particularly for trips of less than 5km.
- 2.3.2 For the purposes of this assessment, it has been assumed that cycling has the potential to replace short car trips, particularly for journeys of less than 5km in length. Small quantities of shopping can be carried on a cycle rack without impediment and cycling is therefore a viable mode of transport, particularly for staff and customers making 'top-up' shopping trips.
- 2.3.3 Based on a maximum cycle distance of 5km, the approximate cycle catchment is shown at Figure 2.2 below.

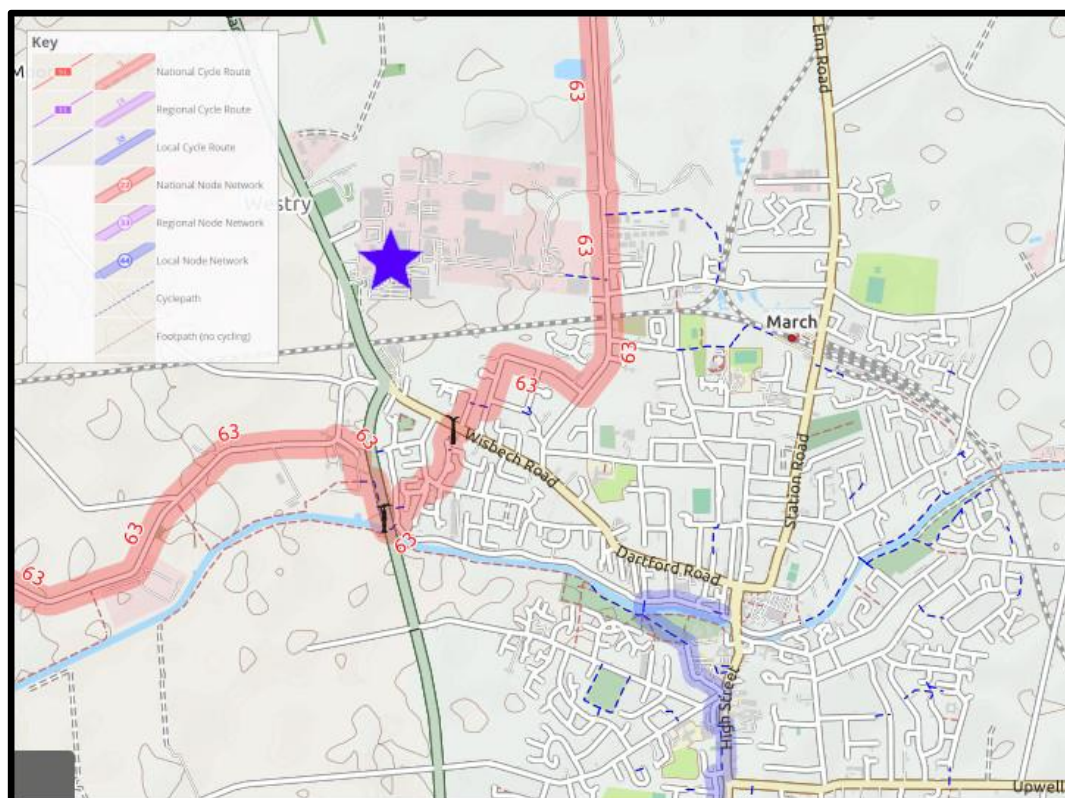
Figure 2.2 – Cycle Catchment Area



Source: Promap

- 2.3.4 The 5km cycle catchment includes all of March and surrounding smaller settlements. This provides a significant local population within cycle distance of the site.
- 2.3.5 Figure 2.3 below shows a cycle map for March and the surrounding areas taken from OpenStreetMap, showing local and national cycle routes in the area.

Figure 2.3 – March Cycle Map



Source: OpenStreetMap. N.B. The proposal site is indicated by a blue star.

- 2.3.6 National Cycle Route (NCR) 63 is accessible approximately 950m east of the proposed site access from Hostmoor Avenue. NCR 63 provides a route through northwest March, and north and west routes beyond the town.
- 2.3.7 Many routes throughout March follow quiet residential roads, allowing for travel within the urban area of the town.
- 2.3.8 Considering that the roads local to the site are urban in character, and that the site is located within cycling distance of a substantial residential area, cycling provides an opportunity to access the store by a sustainable mode of transport for potential customers and staff members.

2.4 Bus Access

- 2.4.1 The publication 'Planning for Public Transport in Developments' produced by the Institution of Highways and Transportation (IHT) specifies that new developments should be located within 400m of the nearest bus stop.
- 2.4.2 The nearest bus stop to the site is located in the forecourt of the Tesco Superstore approximately 260m walking distance from the southern boundary of the proposal site. The bus stop benefits from a shelter with timetable information.

- 2.4.3 There is good accessibility from the proposal site to the bus stop in the Tesco forecourt, with footways on the north and south flanks of Hostmoor Avenue, which can be crossed via a refuge island with dropped kerbs adjacent to the north boundary of the Tesco car park c.70m east of the Tesco Access Roundabout. Pedestrians are able to manoeuvre through Tesco car park to the bus stop via a series of on-site zebra crossings.
- 2.4.4 The bus stop serves the 33 route, providing northbound and southbound services between March and Peterborough every two hours on weekdays and Saturdays. As well as March and Peterborough, other destinations on the 33 route include Whittlesey, Chatteris, Doddington, and Wimblington.
- 2.4.5 Another bus stop is located on the A141 Wisbech Road approximately 400m walking distance north of the southern boundary of the proposal site. The bus stop benefits from a flag-and-pole with timetable information.
- 2.4.6 The bus stop on the A141 Wisbech Road is accessible from the proposal site via a continuous footway on the north side of Hostmoor Avenue, which connects to a footway flanking the east site of the A141 Wisbech Road. Pedestrians are able to cross the KFC access junction via a refuge island with dropped kerbs and tactile paving.
- 2.4.7 The bus stop serves southbound services of the 33 and 46 routes. The 46 route provides weekday and Saturday services every 1.5 hours between Wisbech and Town End. Other destinations include March, Guyhirn and Murrow.
- 2.4.8 The above bus stops and their indicative walk routes are shown at Figure 2.4 below.

Figure 2.4 – Bus Stop Location



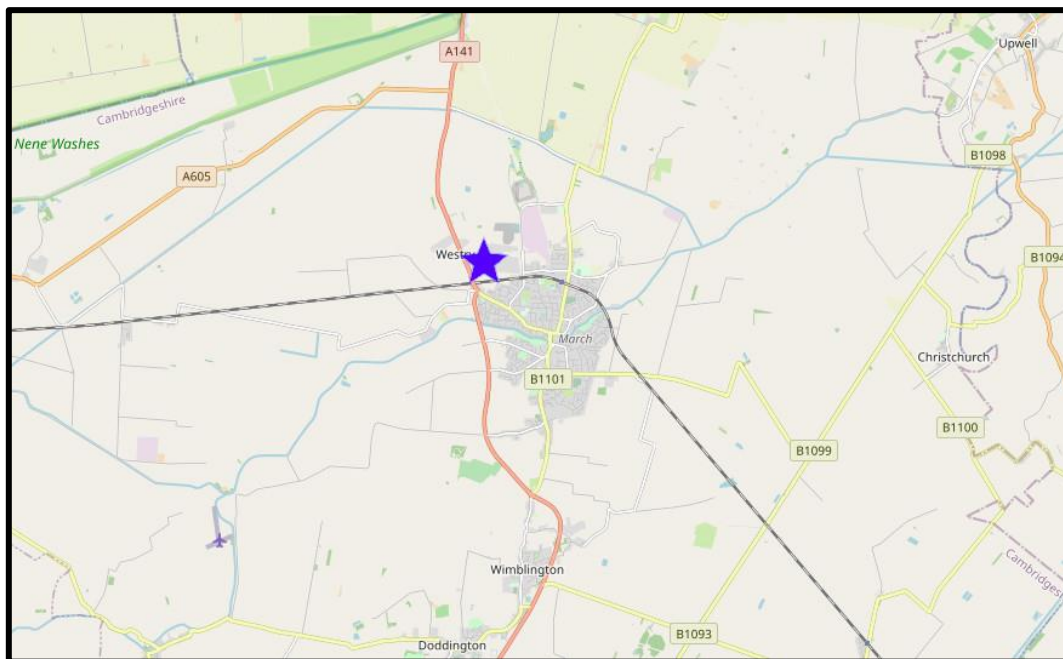
Source: Google. N.B. All Distances, Locations and Areas approximate. The southern boundary of the proposal site is indicated by a blue star.

- 2.4.9 A local charity organisation called FACT also operates a "dial-a-bus" service for the Fenland area, which provides weekday accessible minibus services for those who have difficulty using conventional modes of transport. The B&M and Tesco by the site currently operate as drop-off points and the service provides routes to various local destinations, including Welney, Christchurch, Chatteris, Wimblington and March.
- 2.4.10 Having regard to the proximity of the bus stops, the regularity of the 33 and 46 routes, the option of the FACT "dial-a-bus" service, and the areas that the existing local buses serve, the site is accessible by public transport.

2.5 Highways Access

- 2.5.1 The existing site access junctions will be removed and a new access in the form of a priority junction will be constructed on the north side of Hostmoor Avenue west of the location of the existing access. All movements are permitted through the junction, except right-turn exit movements from the access onto Hostmoor Avenue. A raised kerbed island will be provided along the centreline of Hostmoor Avenue opposite the access to deter right-turn exit movements.
- 2.5.2 Hostmoor Avenue meets the A141 Wisbech Road via a 'left out' priority junction (all movements permitted except the right-turn out of Hostmoor Avenue) c.100m west of the proposed site access junction. The A141 Wisbech Road has a ghost island right-turn lane for northbound traffic turning into Hostmoor Avenue.
- 2.5.3 Land west of the A141 Wisbech Road has planning consent for the development of a 6,888 sq.m. retail park, known as Westry Retail Park, and the A141 / Hostmoor Avenue Priority Junction to be upgraded to a 45m diameter four-arm roundabout (local planning authority reference F/YR15/0640/F). The provision of this roundabout would allow for right-turn movements from Hostmoor Avenue onto the A141 Wisbech Road.
- 2.5.4 A further application (reference F/YR18/0566/F), which has yet to be determined, proposes to extend the previously consented Westry Retail Park and to upgrade the A141 / Hostmoor Avenue Priority Junction to a 60m diameter four-arm roundabout. Further details are provided at Section 4.4.
- 2.5.5 The A141 Wisbech Road meets the A141 / B1099 Roundabout (also known as 'Peas Hill Roundabout'), a five-arm priority-controlled roundabout, approximately 400m south of the A141 / Hostmoor Avenue Priority Junction. The B1099 Wisbech Road arm of the roundabout provides a route into the centre of March and the A141 Isle of Ely Way arm of the roundabout provides a north-south route that bypasses the west side of March.
- 2.5.6 The A141 Wisbech Road meets the A47 approximately 5km north of the A141 / Hostmoor Avenue Priority Junction. The A47 forms part of the Strategic Road Network (SRN) between Peterborough and Lowestoft.
- 2.5.7 Figure 2.5 below shows the site in its local highway context.

Figure 2.5 – Highway Network



Source: OpenStreetMap.org. N.B. the proposal site is indicated by a blue star.

- 2.5.8 Overall, the site has a prominent location in relation to the local road network from which it is readily accessible.

2.6 Section Conclusion

- 2.6.1 The proposal site is surrounded by a pedestrian network that includes a number of crossing facilities, and a residential catchment within walking distance of the store. March and the surrounding area is conducive to cycling and the bus stops local to the site are served by regular bus services, which provide access to / from a variety of destinations. The proposal site also has a prominent location relative to the local highway network. Overall, the site is accessible by all relevant transport modes.

3.0 PROPOSED DEVELOPMENT

3.1 Introduction

3.1.1 The development proposals are shown on the plan provided at Appendix 1. The proposals include the development of an Aldi foodstore with site composition including the following:-

- An Aldi discount foodstore with a Gross Internal Area (GIA) of 1,804 sq.m. and a Gross External Area (GEA) of 1,881 sq.m. including a sales area of 1,315 sq.m., with the remaining space used for storage, staff amenity and other back-of-house activities.
- A car park with 106 spaces, of which six spaces will be dedicated for disabled users, ten spaces for parents with young children, four active Electric Vehicle (EV) spaces, and 20 spaces adapted for future EV connectivity.

3.2 Proposed Site Access Arrangements

3.2.1 The existing site access junctions will be removed and a new access in the form of a priority junction will be constructed on the north side of Hostmoor Avenue west of the location of the existing access. All movements are permitted through the junction, except right-turn exit movements from the access onto Hostmoor Avenue. A raised kerb island is proposed along the centreline on Hostmoor Avenue opposite the access to deter right-turn exit movements.

3.2.2 Service vehicles will access the site via the proposed priority access junction on Hostmoor Avenue.

3.2.3 Pedestrian access into the site will be via footway connections from the existing footway on the north side of Hostmoor Avenue through the proposed access junction. A pedestrian refuge island with dropped kerbs and tactile paving is proposed within the centre of the access.

3.2.4 The site access arrangements are shown at Appendix 2.

3.2.5 The existing traffic island on the Hostmoor Avenue arm of the Tesco Access Roundabout will be upgraded to a pedestrian refuge island with dropped kerbs and tactile paving.

3.2.6 Hostmoor Avenue is subject to a 30mph speed limit. The site access plan at Appendix 2 provides 2.4 x 43m visibility splays east and west of the proposed site access junction in accordance with Manual for Streets.

3.2.7 A Stage 1 Road Safety Audit (RSA) was undertaken by The Safety Forum from Thursday 1st October 2020 to Monday 5th October 2020 for the proposed vehicular access arrangements at Hostmoor Avenue. No safety issues were identified by the RSA.

3.3 Proposed Signalisation of the A141 / Hostmoor Avenue Junction

3.3.1 It is proposed that, during the interim period from the construction of the Aldi to the delivery of the roundabout as part of the Westry Retail Park development (F/YR15/0640/F and F/YR18/0566/F), the A141 / Hostmoor Avenue Priority Junction be upgraded to a signal-controlled junction.

- 3.3.2 Such proposals were discussed with CCC during pre-application discussions, the details of which are set out later in this report. As summarised in their pre-application consultation report, dated 9th April 2021 (Appendix 4), CCC expressed the following:

"CCC would take the view that the Aldi and McDonald's proposals together would trigger the need for intervention at the A141/Hostmoor Avenue junction, whether this be in the form of the proposed signals (with the recommended 'KEEP CLEAR' markings) as an interim scheme or the roundabout to be delivered as part of the Westry development, depending on delivery timescales of the Aldi store and Westry roundabout."

- 3.3.3 In a follow-up email, dated 19th April 2021, CCC stated the following in relation to the delivery of the signal scheme:

"The McDonald's site has not yet carried out its impact assessment. If the infrastructure is deemed needed to accommodate either development we would condition the signal scheme individually for both the Aldi and McDonald's developments, and whichever development is delivered first will deliver the scheme. Of course, the developers may enter an agreement amongst themselves to share the costs, but in planning terms the first developer must bear the full delivery obligation."

- 3.3.4 It is envisioned that a condition will be applied to any planning permission requiring the signal scheme to be delivered following the construction of the proposed Aldi or McDonald's.

- 3.3.5 A plan showing the proposed signal scheme layout is provided at Appendix 5.

3.4 Servicing

- 3.4.1 An Aldi store typically receives an average of four HGV deliveries per day. Three articulated HGV deliveries per day come from the Regional Distribution Centre (RDC) and there is one delivery per day of milk by a local supplier, usually using a medium sized goods vehicle.
- 3.4.2 Daily deliveries of milk, bread and morning fresh produce are received prior to, or as early as possible after, the store opening in the morning, and are delivered by one Aldi HGV and one milk delivery vehicle.
- 3.4.3 In addition to goods deliveries, each store has 1-2 collections of General Waste and Animal By-products per week.
- 3.4.4 Newspapers are delivered daily to the store, and a dedicated locker is provided within the service bay area for newspapers to be securely delivered.
- 3.4.5 Aldi stores have a cardboard bailer within the warehouse, and all cardboard packaging is bailed. Together with any plastics as required for recycling, this is then back loaded to the RDC with each Aldi HGV.
- 3.4.6 Aldi operate a closely managed servicing arrangement for each of its stores. The Aldi articulated service vehicle is able to carry frozen, chilled and mixed goods assembled at Aldi's RDC, enabling the potential to reduce journeys and vehicle kilometres compared to separate deliveries, thus providing an efficient servicing regime.
- 3.4.7 Aldi operates its own fleet of dedicated vehicles and drivers. Aldi HGVs are driven and operated by the dedicated Aldi driver.

- 3.4.8 The Aldi store warehouse has been designed as a result of years of experience to hold enough stock to prevent unnecessary deliveries, but is also of efficient size to ensure the freshest possible products and to prevent over-stocking. The efficient stock holding in their stores further reduces the need for multiple daily deliveries.
- 3.4.9 Stores are constructed with a delivery ramp, sheltered canopy and dock leveller system which means products can be unloaded without any external activity, such as forklift trucks, scissor lifts or cages, and in less than half the time were these facilities not provided. The usual time for unloading an Aldi HGV is 30 - 60 minutes.
- 3.4.10 During unloading, the back of the vehicle body is at the shop floor level, enabling the driver to wheel pre-packed pallets directly from the HGV to the dedicated storage area within the store. The delivery system is extremely efficient.
- 3.4.11 All Aldi vehicles are equipped with Reversing Cameras and Audible Warning Systems enabling the driver and customers to be aware of the reversing vehicle. Where required, a trained Pedestrian Marshal is utilised by the store to guide pedestrians in a safe manner whilst a service vehicle is manoeuvring.
- 3.4.12 HGV access to the service area has been designed to accommodate the required turning manoeuvres of the largest service vehicle (FTA 16.5m articulated goods vehicle). The service vehicle will drive forwards into the site, reverse into the service ramp and then drive out forwards to exit the site.
- 3.4.13 The proposed site layout has been assessed for delivery vehicle manoeuvres based on the FTA 16.5m articulated goods vehicle and details of the swept path assessment are provided at Appendix 6. The track plots show that the service route through the proposed access junction and car park is satisfactory and that service vehicles would be able to manoeuvre within the site, enabling service vehicles to arrive and depart to / from the site in forward gear.

3.5 Parking

- 3.5.1 Paragraph 105 of the National Planning Policy Framework NPPF, February 2019 states:-

"If setting local parking standards for residential and non-residential development, policies should take into account:-

- *The accessibility of the development;*
- *The type, mix and use of the development;*
- *The availability of and opportunities for public transport;*
- *Local car ownership levels; and*
- *The need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles."*

3.5.2 Paragraph 106 of the NPPF 2019 states:-

"Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network, or for optimising the density of development in city and town centres and other locations that are well served by public transport (in accordance with chapter 11 of this Framework). In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists."

Fenland District Council Local Plan (Adopted May 2014)

3.5.3 The car parking standards pertinent to the proposed development are set out at Appendix A of the FDC adopted Local Plan.

3.5.4 The car parking standards for 'Class A1 Shops (excluding non-food)' are maximum standards and set out at Figure 3.1 below.

Figure 3.1 – Class A1 Car Parking Standards

2. Class A1 Shops (excluding non-food)	For each shop unit and retail warehouse/garden centre, two spaces and in addition:
Units up to 499 sq.metres *	One additional space for every 25 sq.metres of floor space over 50 sq.metres of floor space.
Units up to 1999 sq.metres	One parking space for every 20 sq.metres of floor space
Units over 2000 sq.metres	One parking space for every 10 sq.metres of gross floorspace
* Area referred to is gross floor area.	

3.5.5 For units up to 1,999 sq.m. Gross Floor Area (GFA), the FDC standards indicate a maximum provision of one space per 20 sq.m. GFA. This equates to a maximum standard of 94 spaces for the proposed development ($1,881 \div 20 = 94.1$). The proposed development includes a provision of 106 parking spaces, which is broadly according to the standards. The additional car park spaces will aid in accommodating any unexpected and seasonal spikes in parking demand.

3.5.6 Policy LP15 of the Local Plan outlines the standards for cycle parking provision, set out as follows:

"Development schemes should provide well designed car and cycle parking appropriate to the amount of development proposed, ensuring that all new development meets the Council's defined parking standards as set out in Appendix A."

3.5.7 The Local Plan does not include a quanta of parking standards, as the provision should be appropriate to the development. The proposed development includes a provision of four cycle stands capable of securing up to eight cycles, which, based on the scale of the development and its location within the local cycle network, is considered to be appropriate by the applicant.

-
- 3.5.8 As a comparison, the Aldi store on Sandyland in Wisbech features three cycle stands and is situated within a town centre location.
- 3.5.9 FDC does not currently have any standards pertaining to the provision of electric charging spaces. However, to encourage the use of electric vehicles, the proposed development includes a provision of four active EV charging bays and 20 spaces adapted for future EV connectivity.

British Standard 8300:2009

- 3.5.10 Paragraph 4.2.1.3 of the British Standard 8300:2009 indicates that for shopping facilities a disabled parking provision of one disabled space per disabled employee and 6% of total car parking spaces should be designated for disabled users.
- 3.5.11 This equates to a disabled parking provision of six spaces for the proposed development ($106 \times 6\% = 6.4$). The proposed development includes a provision of six disabled spaces and thus accords with the standards.

3.6 Section Conclusion

- 3.6.1 Swept path analysis has shown that access arrangements of the proposed development are suitable for their intended use.
- 3.6.2 The proposed parking provision broadly accords with local and national standards.

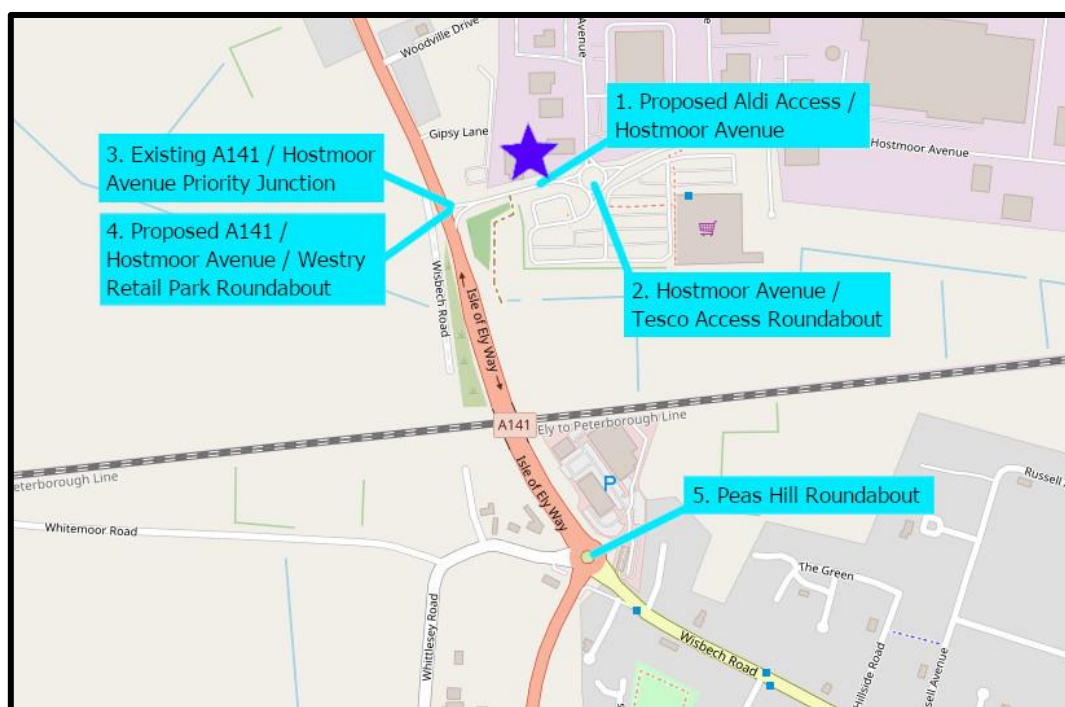
4.0 TRAFFIC ASSESSMENT

4.1 Introduction

4.1.1 This section of the report provides details of the traffic data used for the assessment of the study area junctions. The assessment considers the effect of the traffic that would be attracted to the development using the following study area indicated at Figure 4.1 below:

- 1) Proposed Aldi Access / Hostmoor Avenue Priority Junction
- 2) Hostmoor Avenue / Tesco Access Roundabout ('Tesco Access Roundabout')
- 3) Existing A141 / Hostmoor Avenue Junction (Priority and Signal Junction)
- 4) Proposed A141 / Hostmoor Avenue / Westry Retail Park Roundabout
- 5) A141 / B1099 / Whittlesey Road Roundabout ('Peas Hill Roundabout')

Figure 4.1 – Transport Assessment Study Area



Source: OpenStreetMap. N.B. the proposal site is indicated by a blue star.

4.2 Existing Traffic Flows

- 4.2.1 Due to the current conditions surrounding Covid-19, obtaining new traffic data that accurately represents "normal" traffic conditions is problematic. Therefore, in this instance, historic data recorded prior to the implementation of lockdown measures in the UK in March 2020 has been obtained and appropriately adapted for use in this traffic assessment.
- 4.2.2 As part of the pre-application process, CCC provided manual classified turning count (MCC) survey data of the study junctions, undertaken on Tuesday 27th March 2018 from 07:00 to 19:00 hours and on Saturday 9th May 2015 from 11:30 to 14:30 hours.

- 4.2.3 The same survey data was used for the MTC Engineering TA (October 2018) produced for the proposed expansion of the consented Westry Retail Park, under planning application F/YR18/0566/F.
- 4.2.4 The traffic surveys have identified the peak hours, during which the study area is at its busiest, which are recorded as follows, consistent with the Westry Retail Park TA:
- Weekday AM Peak: 08:00 – 09:00.
 - Weekday PM Peak: 16:45 – 17:45.
 - Saturday Midday Peak: 11:30 – 12:30.
- 4.2.5 Diagrams illustrating the observed flows are provided at Appendix 7.
- 4.2.6 The validity of the May 2015 traffic data was evaluated in the Connect Technical Note 'TN05 – Existing Traffic Data Assessment' (20th November 2020), provided at Appendix 3.
- 4.2.7 TN05 evaluated the May 2015 data against the trend in traffic growth across the March area, using available traffic data derived from automatic traffic count (ATC) surveys of key traffic corridors around March and TEMPRO growth rates.
- 4.2.8 In pre-application discussions, CCC reviewed TN05 and provided the following feedback in a consultation report, dated 8th December 2020, provided at Appendix 4:

"The Highway Authority are happy with the methodology used to demonstrate the validity of the May 2015 traffic count data used within the assessment as outlined in TN05. This demonstrated the 2015 observed average traffic flows are comparable to the corresponding TEMPRO growth trend for 2015 for the local area of March. The Highway Authority will therefore accept use of the baseline traffic count data undertaken in May 2015 within the Transport Assessment which will form part of the planning application for a new Aldi store when submitted."

4.3 Base Year Traffic Flows

- 4.3.1 As advised by CCC in a pre-application consultation report dated 26th February 2020, this assessment is based on a baseline year of 2021 and future year of 2026. Growth factors have been applied to the observed traffic flows to represent the baseline and future years, to account for projected economic growth and local development forecasts.
- 4.3.2 The growth factors have been derived based on TEMPRO version 7.2 database. This has been adjusted based on the following TEMPRO outputs:
- Result type: Trip ends by time period
 - Area: "Fenland"
 - Transport mode: Car Driver
 - Trip end type: Origin/Destination
 - Area type: All
 - Road type: All
 - Time period: AM, PM and Saturdays (all times of day)

4.3.3 The TEMPRO growth rates are summarised below at Table 4.1.

Table 4.1 – TEMPRO Growth Rates

Peak Period	TEMPRO Growth Rates	
	2018 to 2021	2018 to 2026
AM	1.0465	1.1325
PM	1.0450	1.1339
Peak Period	2015 to 2021	2015 to 2026
Sat	1.0966	1.2003

4.3.4 The TEMPRO growth factors have been applied to the relevant observed flows to derive the forecast future baseline traffic flows. Diagrams illustrating these flows on the highway network at Appendix 8.

4.4 Committed Developments

4.4.1 The following developments have been identified in the pre-application advice from CCC for consideration as committed development within this TA:

- McDonald's, March - F/YR19/1093/F - Erection of a two-storey drive-thru restaurant/takeaway on land south of Hostmoor Avenue.
- Westry Retail Park - F/YR18/0566/F - Erection of 13 x retail units, 1 x drive-thru restaurant/coffee shop, 2 x units with A3/A5 use, and a new roundabout on the A141.

F/YR19/1093/F – McDonald's, March

4.4.2 Currently, the planning application for the proposed McDonald's development (planning reference F/YR19/1093/F) has yet to be determined by FDC. Despite this, at the request of CCC, McDonald's trips will be considered in this traffic assessment.

4.4.3 A Transport Statement was produced by MTC Engineering, dated October 2019, for the McDonald's, which proposed a trip generation to the site based on TRICS and a set of trip type assumptions. In responding to the MTC October 2019 TA, CCC did not accept the methodology of the TRICS assessment and a revised traffic assessment has yet to be produced.

4.4.4 Therefore, Connect undertook a separate traffic assessment for the consideration of the McDonald's trips, the methodology and results of which are set out in the Connect report 'TN02 – Response to Pre-application Comments' (17th August 2020), provided at Appendix 3. The assessment was accepted by CCC in a pre-application consultation report, dated 3rd September 2020 (Appendix 4).

4.4.5 The assessed trip attraction figures of the proposed McDonald's, as derived from the TRICS database during the surveyed peak hours, has been extracted from TN02 and shown at Table 4.2 below.

Table 4.2 – TRICS Data – Fast Food Drive Through

Peak	Average Trip Rates			Traffic Attraction (based on 493 sq.m. GFA)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM 08:00-09:00	11.792	11.726	23.518	58	58	116
PM 16:45-17:45	10.622	10.774	21.396	52	53	105
Sat 11:30-12:30	23.608	20.962	44.570	116	103	220

- 4.4.6 The distribution methodology for the McDonald's trips is detailed in TN02.
- 4.4.7 Diagrams showing the distribution of each of the proposed McDonald's trip types are provided at Appendix 9.
- 4.4.8 As the McDonald's is not yet consented, for simplicity the development will be assumed to be delivered around the same time as the proposed Aldi.

F/YR18/0566/F – Westry Retail Park

- 4.4.9 The application F/YR18/0566/F proposes the expansion of the approved Westry Retail Park on land to the west of the A141, from the 6,888 sq.m. retail park floor space consented under planning permission F/YR15/0640/F, to a 14,771 sq.m. retail park. Planning application F/YR18/0566/F also proposes upgrading the existing A141 / Hostmoor Avenue Priority Junction to a 60m diameter priority roundabout (replacing the consented 45m diameter roundabout).
- 4.4.10 In order to test the 'worst-case' traffic scenario associated with Westry Retail Park, this assessment includes the traffic associated with the full 14,771 sq.m. Westry Retail Park, along with the 60m roundabout associated with it. The vehicle trips and distribution on the local road network have been obtained from the MTC Engineering TA, dated October 2018.
- 4.4.11 In Section 5.0 of this report, the junction capacity assessment for the 45m roundabout has also been tested based on the consented 6,888 sq.m. floor space.
- 4.4.12 It should be noted that the Westry Retail Park trips extracted from the MTC Engineering TA includes the trip generation already consented under planning permission F/YR15/0640/F and the additional trips assessed with the proposed expansion in floor area of the retail park.
- 4.4.13 For the purposes of this assessment, it is considered unlikely that the Westry Retail Park development will be constructed by 2021 and so has not been included in the 2021 scenario.
- 4.4.14 The committed development traffic flows associated with the Westry Retail Park development are shown at Appendix 10.
- 4.4.15 The combined traffic flows of the 2026 baseline + Westry Retail Park scenario are shown at Appendix 11.

4.5 Assessment Scenarios

4.5.1 The traffic effect of the proposed development has been assessed at the study junctions based on the following scenarios:

- 2021 Base
- 2021 Base + McDonald's + Aldi
- 2026 Base + McDonald's + Aldi
- 2026 Base + Westry Retail Park
- 2026 Base + Westry Retail Park + McDonald's + Aldi

4.6 Proposed Discount Foodstore Trip Attraction

4.6.1 To calculate the trip attraction of the proposed discount foodstore, the arrival and departure figures for a store with similar compositional and locational characteristics as the proposed foodstore have been obtained.

4.6.2 The following methodology and resultant discount foodstore trip numbers were agreed by CCC in their pre-application consultation report, dated 3rd September 2020, provided at Appendix 4.

4.6.3 The existing Aldi store on Sandyland in Wisbech has been selected, which is located approximately 16km north of the proposal site and shares a similar customer catchment area as the proposed development.

4.6.4 The Aldi Wisbech store is equipped with Automatic Number Plate Recognition (ANPR) technology that records the times of vehicular arrivals and departures to and from the store's car park. The resultant traffic data is provided by the car parking management company Parking Eye.

4.6.5 This Parking Eye data has been obtained for the period from Monday 10th February 2020 to Sunday 16th February 2020 to assess the weekday and Saturday trip numbers. The ANPR records traffic data from 00:00 to 20:00.

4.6.6 The observed trip numbers for the Aldi Wisbech store have been converted into trip rates per 100 sq.m. GFA, by dividing the trip numbers by the c.1,600 sq.m. GFA of the Wisbech store, and multiplying the results by 100.

4.6.7 The resultant average-weekday and Saturday arrival and departure peak hour trip rates per 100 sq.m. of the Wisbech store have been applied to the 1,881 sq.m. GFA of the proposed March store to derive the vehicle trip attraction of a foodstore the size of the proposed development.

4.6.8 It should be noted that this is likely to provide an overly robust trip assessment of the proposed store for two reasons. Firstly, the Wisbech store has more population in its catchment than the proposed March store will have and, secondly, the relationship between store size and trip attraction is not precise so factoring up the Wisbech flows to the March store size is likely to provide an over estimate.

4.6.9 Table 4.3 below shows the average weekday and Saturday arrival and departure trip rates for the Aldi Wisbech store alongside the equivalent trip attraction of the proposed development for the network AM, PM and Saturday peak hours.

Table 4.3 – Parking Eye – Proposed Trip Attraction

Peak Period	Trip Rates (per 100 sq.m.)			Trip Numbers (per 1,881 sq.m.)		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
AM 08:00 – 09:00	4.150	3.113	7.263	78	59	137
PM 16:45 – 17:45	4.750	5.131	9.881	89	97	186
SAT 11:30 – 12:30	8.438	8.594	17.031	159	162	320

4.7 Development Trip Types – Primary and Secondary Trips

Pass-by / Diverted / Linked Trips / Trade Diversions

4.7.1 The traffic that will be attracted to the proposed foodstore will comprise the following trip types:-

- Pass by trips resulting from people who currently use the road adjacent to the site for a trip involving another purpose who will visit the site while passing.
- Diverted trips derived from people who are using the road network close to the site for another purpose who will divert their trips to visit the store while passing in the broad vicinity.
- Transferred trips by people who would change their destination from a competing attraction, to the proposed development.
- Linked trips undertaken by existing visitors to a specific local retail centre who visit the proposed development as part of their existing trip.
- Primary trips made by people who travel for the specific purpose of visiting the proposed foodstore, but not included in the trip types above.

4.7.2 TRICS research report 14/1 titled 'Pass-by & Diverted Trips' sets out that a large variety of results have been observed for the combination of pass-by, diverted, and linked trips and that a site-by-site approach should be taken to the application of these 'secondary' trips. Specifically the TRICS 14/1 report notes that:

"It is recommended that for an assessment of the quantum of pass-by and diverted trips that a first principles approach is taken for each site, whereby a process is defined for the assessment of these trips and agreed by the applicant and determining authority."

4.7.3 The commercial and academic research contained within the TRICS 14/1 report identifies levels of pass-by proportions ranging from 6% to 72%, combined levels of pass-by and diverted trip proportions ranging from 57% to 67%, and average linked trip proportions (with town centres / district centres) ranging from 46% to 60%.

4.7.4 The research is undertaken by a number of researchers and institutions, which shows (and which is logical) that some trip types will overlap others, such as 'transferred pass-by' trips.

Aldi Linked Trips Surveys

- 4.7.5 A substantial proportion of customers that visit Aldi combine their trips with a visit to other nearby stores. As a result of this, many of the trips associated with Aldi are linked trips and are therefore derived from existing trips that are already on the highway network.
- 4.7.6 The proportion of trips linked with nearby uses has been assessed by reference to the survey data collected at Aldi's Lichfield, Reading (Calcot) and Lewes stores in February 2008, February 2009 and June 2015 respectively. The survey results are shown at Table 4.4.

Table 4.4 – Linked Trip Survey Results

Location	Day(s)	Total Interviews	Other Linked Location	Town Centre Linked		Other Linked		Both Town Centre and Other Linked	
				No.	%	No.	%	No.	%
Lichfield	Friday	310	Tesco	54	17.4	70	22.6	45	14.5
Lichfield	Saturday	366	Tesco	96	26.2	60	16.3	57	15.5
Calcot	Friday and Saturday	548	Sainsbury's	-	-	111	20.3	-	-
Lewes	Week long (excl. Tuesday)	1,200	Not Specified	207	17.3	378	31.5	102	8.5

- 4.7.7 Table 4.4 indicates that, on a Friday 40%, of customers visiting the Aldi store in Lichfield linked their trips with visits to the nearby Tesco supermarket or the town centre, and 14.5% linked with both. On the Saturday 42.5% of customers linked their trip with the Tesco supermarket or town centre and 15.5% visited both. A total of 54.5% of trips to the store on the Friday and 58% of trips on the Saturday were linked. These results indicate linkage figures in the range identified within the TRICS research (i.e. 46% to 60%).
- 4.7.8 At the Calcot store, the total number of visitors linking their trip with the Town Centre was not identified, but 20.3% of trips on the Friday and Saturday combined were linked with the Sainsbury's foodstore located approximately 2.5km to the west of the Aldi store.
- 4.7.9 At the Lewes store, across the six days 40% of respondents linked their trips with the Town Centre or another off-site facility. Of the respondents travelling by all modes this ranged from 27% on the Sunday to 68% on the Saturday, while for respondents travelling by car this ranged from 23% on the Sunday to 68% on the Saturday.

Assessment of Secondary Trip Types

- 4.7.10 The first principles that determine the proportion of secondary trips used within this assessment involve consideration of the site, and the ability for the location characteristics to result in proportions of secondary trips within the ranges set out within the TRICS research. In doing so, the assessment will identify a set of proportions that are suitably robust as a means to consider the effects of the proposed development.

- 4.7.11 The TRICS research shows that the proportion of pass-by trips can vary significantly up to observed values of approximately 70% and is dependent on a number of factors, not limited to vehicle volumes on the roads adjacent to the site, the proximity of residences, the proximity of employment / retail, and the number of competing attractions. For simplicity, this assessment is based on a pass-by rate of 10% (i.e. 10% of the Aldi traffic is from existing trips on Hostmoor Avenue).
- 4.7.12 Likewise, the TRICS research shows that proportion of diverted trips can vary site-to-site and again for simplicity, a diverted rate of 20% has been used (i.e. 20% of the Aldi traffic is diverted from its existing journey on the A141).
- 4.7.13 The TRICS and Aldi store research identifies linked-trip proportions in the region of c.50% and above, which is dependent upon the proximity of local retail destinations. As above, and established within the TRICS research, linked trips may include pass-by or diverted trips and so care must be taken when assigning these proportions. For simplicity, this assessment assumes 30% linked trips with Tesco, and 10% linked trips with Westry Retail Park. In the scenario without Westry Retail Park, for simplicity this assessment assumes 20% new trips instead.
- 4.7.14 The secondary trips described above are assigned to the study area network as follows:-
- Pass-by Trips: these trips will be drawn from eastbound / westbound movements on Hostmoor Avenue adjacent to the proposed Aldi Access, pro-rata with the observed traffic flows.
 - Diverted Trips: these trips will be drawn from northbound / southbound movements on the A141, pro-rata with the observed traffic flows.
 - Linked Trips: Tesco – assuming that existing Tesco traffic first visits the proposed Aldi store, then travels on to Tesco, and then departs Tesco to return home.
 - Linked Trips: Westry Retail Park – assuming trips are made to the retail park first, then to the proposed Aldi store and then home.

Assessment of Primary Trip Types

- 4.7.15 The assessment is based on the simplified assumption that and that 10% of Aldi trips are 'new' trips to the study area network, attracted solely to Aldi and which are using the local road network for no other purpose.
- 4.7.16 The distribution of primary trips is based on the assumptions set out at Table 4.5 below, which is guided by the observed traffic movements of the local highway network, the local customer catchment area, and logical route choices to and from the proposed development.
- 4.7.17 In the pre-application scoping discussions with CCC, Connect suggested that two-thirds of Aldi trips will turn into Hostmoor Avenue from the A141 south, one-sixth (16.7%) will turn into Hostmoor Avenue from the A141 north, and one-sixth (16.7%) will travel from the east on Hostmoor Avenue. CCC subsequently requested that the Peas Hill Roundabout is included in the TA, and as such, it is now assumed that the two-thirds of Aldi traffic to/from the A141 south is divided at Peas Hill into 25% from areas to the south via the A141 (equating to 16.7% of the total Aldi trips), and 75% from March via the B1099 (equating to 50% of the total Aldi trips).

Table 4.5 – Primary Trip Distribution

Origin / Destination	Percentage
Hostmoor Avenue (east)	16.7%
A141 North	16.7%
B1099 Wisbech Road	50.0%
A141 Isle of Ely Way	16.7%
	100%

- 4.7.18 The simplified assumption has been made that 15% of Aldi trips comprise trips which were previously made to the nearby Tesco superstore, but will be transferred to Aldi instead, and that 5% of Aldi trips comprise trips which were previously made to the Aldi store in Wisbech.
- 4.7.19 Trips to Tesco will be transferred from Hostmoor Avenue and the Tesco roundabout pro-rata with the observed traffic flows.
- 4.7.20 Trips from the Aldi in Wisbech are drawn from existing trips north/south on the A141 to represent residents of March who would usually drive to Aldi in Wisbech but instead use the proposed new Aldi.

Summary of Proposed Development Trip Types

- 4.7.21 By way of summary, this assessment is based on the trip type assumptions shown at Table 4.6.

Table 4.6 – Summary of Proposed Development Trip Types

Trip Type	Percentage of Total Development Trips	
	With Westry Retail Park	Without Westry Retail Park
New to Study Area Network	10%	20%
Pass-by Trips	10%	10%
Diverted Trips	20%	20%
Transferred from Tesco	15%	15%
Transferred from Aldi Wisbech	5%	5%
Linked with Tesco	30%	30%
Linked with Westry Retail Park	10%	0%

- 4.7.22 Diagrams showing the distribution of each of the proposed development trip types are provided at Appendix 12.

4.8 Net Development Effect

- 4.8.1 The net traffic effect of the proposed development, being the combination of each of the above trip type assumptions, is shown on diagrams at Appendix 12, and expressed in proportionate terms of the predicted 2026 base year traffic (including assessed Westry Retail Park traffic) at Table 4.7 below.

Table 4.7 – Net Traffic Effect

Junction		2026 Assessment Peak Hour		
		AM	PM	Sat
Junction A - Hostmoor Ave / Tesco / Martin Ave Roundabout	Net Aldi Traffic	21	51	85
	2026 base + Westry RP traffic	885	1425	1914
	% Effect	2%	4%	4%
Junction B - Proposed Aldi Access	Net Aldi Traffic	131	195	334
	2026 base + Westry RP traffic	733	1145	1487
	% Effect	18%	17%	22%
Junction C – A141 / Hostmoor Ave Junction	Net Aldi Traffic	31	49	82
	2026 base + Westry RP traffic	2583	3676	3649
	% Effect	1%	1%	2%
Junction D – A141 / B1099 Peas Hill Roundabout	Net Aldi Traffic	9	19	30
	2026 base + Westry RP traffic	2711	3434	3462
	% Effect	0%	1%	1%

N.B. The figures include some mathematical rounding.

- 4.8.2 Table 4.7 shows that at the Tesco Access Roundabout, the proposed development is expected to result in traffic increases of 2%, 4% and 4% of predicted 2026 base levels during the AM, PM and Saturday peak hours respectively.
- 4.8.3 The proposed development is predicted to result in traffic level increases on Hostmoor Avenue at the location of the proposed site access junction by factors of 18%, 17% and 22% during the AM, PM and Saturday peak hours respectively.
- 4.8.4 At the A141 / Hostmoor Avenue Junction, the proposed development is predicted result in a 1% increase in traffic from predicted 2026 base levels during the AM and PM peak periods and a 2% increase during the Saturday peak hour.
- 4.8.5 The proposed development is expected to result in less than 1% traffic level increases at the Peas Hill Roundabout for all peak hours.
- 4.8.6 Overall, the proportionate effect of the proposed development will be minor, with the exception of Hostmoor Avenue which will be moderate. Despite this, as agreed with CCC, all of the study junctions will be assessed for junction capacity in the next section.
- 4.8.7 The proposed development trips and the assessed McDonald's trips have been combined with the 2021 baseline and the 2026 baseline + Westry Retail Park flows to produce the future assessment scenarios with the proposed developments.
- 4.8.8 The '2021 base + McDonald's + Aldi' are shown on diagrams at Appendix 13, the '2026 base + McDonald's + Aldi' flows at Appendix 14, and the '2026 base + Westry Retail Park + McDonald's + Aldi' flows at Appendix 15.

4.9 Multi-modal Trip Generation

- 4.9.1 The modal split for the proposed Aldi foodstore is based on the multi-modal trip generation assessment set out in Section 6.5 of the MTC Engineering October 2015 TA for the consented Westry Retail Park.
- 4.9.2 The MTC multi-modal trip generation assessment used vehicular, pedestrian and cyclist arrival and departure data from surveys undertaken at the nearby Tesco on Saturday 9th May 2015. The MTC TA states that CCC agreed that the modal split for the retail park would likely be similar to the modal split surveyed for the Tesco site.
- 4.9.3 To calculate the proportion of public transport users, a telephone survey was undertaken as part of the Retail Assessment for the Westry Retail Park, which entailed questioning residents within the retail park customer catchment area how they regularly travel to undertake food and non-food retail shopping trips.
- 4.9.4 Then based upon the vehicular, pedestrian and cyclist data gathered for the nearby Tesco and the public transport data collected via the telephone interviews, the MTC assessment calculated the approximate modal split of the retail park to be the following.

Table 4.8 – Modal Split of Trips to Consented Retail Park

	Vehicle	Pedestrian	Cyclist	Public Transport	Total
Proportion of Total	93.1%	2.7%	0.2%	4.0%	100.0%

- 4.9.5 It is likely that the modal split of trips to the proposed Aldi foodstore will be similar to the modal split of trips to the consented retail park and to the nearby Tesco based on the similarities each site shares with being retail shopping units and their proximity to one another in the same area of March.

4.10 Section Conclusions

- 4.10.1 The proposed development traffic has been derived based on data from the existing Aldi store in Wisbech.
- 4.10.2 The assessment takes into account the future baseline traffic flows derived from observed traffic flows and TEMPRO growth rates, committed development traffic associated with the Westry Retail Park development, and the anticipated trip types and distribution of the proposed Aldi foodstore and nearby McDonald's.
- 4.10.3 The combination of all of the above shows that the proportionate traffic effect of the proposed development will be minor at all of the study junctions, with the exception of Hostmoor Avenue which will be moderate.

5.0 JUNCTION CAPACITY AND COLLISION ANALYSIS

5.1 Introduction

5.1.1 The assessment in Section 4.0 identifies that the net traffic effect of the proposed development is minor to moderate at the study junctions. Despite this, all of the study junctions will be assessed for junction capacity.

5.1.2 A collision analysis of the local area has also been undertaken.

5.2 Road Safety / Collision Analysis

5.2.1 Collision data has been obtained from CCC for the study area for the five-year period from 2015 to 2019. A plan showing the details and location of the recorded personal injury collisions over this period is provided at Appendix 16.

5.2.2 The accident plan shows that there were a total of 12 collisions recorded within the study area, during the study period. Of the 12 collisions, one was classified as 'serious' and the remaining as 'slight'. Table 5.1 gives details of the types of collisions that occurred in the study area.

Table 5.1 – Collision Summary

Location	Ref	Date	Severity	Road Surface	Pedestrian Involvement	Cyclist Involvement
A141 c.85-100m south of Hostmoor Ave Jct	151132	03/08/2015	Slight	Dry	No	No
	17239384	27/09/2017	Serious	Dry	No	No
	19885820	24/09/2019	Slight	Wet/Damp	No	No
A141 Jct with Gypsy Lane	151490	15/09/2015	Slight	Dry	No	No
	17235059	18/09/2017	Slight	Wet/Damp	No	No
A141 40m north of Hostmoor Ave Jct	1665127	21/04/2016	Slight	Dry	No	No
A141 Isle of Ely Way 100m from Peas Hill Rbt	17231348	13/08/2017	Slight	Dry	No	No
B1099 Wisbech Road	151985	28/11/2015	Slight	Wet/Damp	No	No
A141 Isle of Ely Way 45m from Peas Hill Rbt	151243	12/08/2015	Slight	Dry	No	No
A141 Isle of Ely Way 20m from Peas Hill Rbt	17231372	14/10/2017	Slight	Dry	No	No
Peas Hill Roundabout	18297249	09/05/2018	Slight	Dry	No	Yes
	19873912	22/08/2019	Slight	Dry	No	No

- 5.2.3 As shown above, no specific location within the study area is shown to have had more than five collisions (i.e. one or more collisions per year), and the number of incidents is not abnormal for a busy A-road such as the A141.
- 5.2.4 The proposed development traffic effect, set out at Section 4.0, is not likely to materially worsen the occurrence or materially affect the pattern of collisions.
- 5.2.5 No accidents are shown to have occurred near the location of the proposed site access junction on Hostmoor Avenue.
- 5.2.6 On this basis, no pattern of collisions has been identified which is attributable to a road layout deficiency, nor one which is likely to be materially worsened by the development proposals.

5.3 Computer Modelling Software

- 5.3.1 Industry-standard junction capacity modelling software, appropriate to the specific study junction/s, has been used to assess the development traffic effect on their capacity and operation.
- 5.3.2 The PICADY9 module of the Junctions9 package is an industry standard computer package for modelling the operation of priority (give-way) junctions. PICADY uses the geometry of the junction combined with traffic flow information to predict capacity. The software provides a number of results in its output, the most meaningful of which is the Ratio of Flow to Capacity (RFC), where an RFC of 1.00 on any approach to the junction reflects a traffic demand equal to the theoretical capacity of that approach.
- 5.3.3 The ARCADY9 computer program is an industry standard computer package for modelling the operation of roundabouts. ARCADY uses the geometry of the roundabout combined with traffic flow information to predict capacity.
- 5.3.4 LINSIG3 is an industry standard tool for assessing signalised junction layouts. The most useful outputs from the software are the Degree of Saturation (DoS) and the Mean Maximum Queue (MMQ) values. A DoS of 100.0% represents a situation where a link is operating at its theoretical capacity. The results are reported in terms of passenger car units (PCUs).

5.4 Capacity Analysis

Proposed Aldi Access / Hostmoor Avenue Priority Junction

- 5.4.1 The PICADY9 computer program has been used to assess the operation of the proposed site access priority junction on Hostmoor Avenue.
- 5.4.2 The operation of the priority junction has been assessed in the 2021 base and 2026 base + Westry Retail Park scenarios with the proposed Aldi and McDonald's traffic during the weekday AM / PM and Saturday peak hours, based on the proposed junction geometry.
- 5.4.3 The junction has been operated using a 'DIRECT' traffic profile, which is based on the proportionate 15-minute east-west traffic levels on Hostmoor Avenue observed by the traffic surveys undertaken on the Tesco Access Roundabout. This ensures that the demand profile best reflects the observed traffic conditions. The McDonald's and Aldi traffic have been assumed to exhibit the same traffic profile as existing observed traffic.
- 5.4.4 The results of the PICADY tests are set out at Table 5.2. The full output report is provided at Appendix 17.

Table 5.2 – PICADY Summary – Proposed Aldi Access

	AM			PM			SAT		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2021 Base + McDonald's + Aldi									
Aldi to Hostmoor Ave (East)	0.1	6.46	0.10	0.2	6.77	0.15	0.4	8.41	0.28
From Hostmoor Ave (East)	0.1	5.61	0.04	0.1	4.24	0.06	0.3	4.07	0.14
2026 Base + Westry RP + McDonald's + Aldi									
Aldi to Hostmoor Ave (East)	0.1	6.62	0.10	0.2	7.03	0.16	0.4	9.01	0.29
From Hostmoor Ave (East)	0.1	5.33	0.04	0.1	4.06	0.07	0.5	3.92	0.16

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

5.4.5 The junction capacity test for the proposed Aldi access junction on Hostmoor Avenue indicates that the junction will operate within capacity in the 2021 and 2026 scenarios with the proposed development in place and with the inclusion of Westry Retail Park and McDonald's.

5.4.6 The predicted maximum average queue lengths for right-turning vehicles into Aldi are less than one vehicle in all scenarios, which demonstrates that there is minimal likelihood of queues interacting with the Tesco roundabout.

A141 / Hostmoor Avenue Priority Junction

5.4.7 The assessment of the A141 / Hostmoor Avenue Priority Junction was carefully considered during pre-application discussions. Connect Technical Note 'TN07 – Junction Capacity Assessment' (23rd February 2021) presents a series of junction capacity assessment undertaken for the junction, based on the following scenarios agreed by CCC in an email dated 13th January 2021:

- 1) 2021 and 2026 Base + McDonald's and Aldi without Westry Retail Park
 - a. The existing baseline junction layout with calibrations made following survey work undertaken on Friday 2nd October 2020 and Saturday 3rd October 2020.
 - b. The proposed signal-controlled junction layout assessed in the Connect Technical Note 'TN04 – Traffic Signal Junction Capacity Assessment' (12th November 2020), provided at Appendix 3.
- 2) 2026 Base + McDonald's and Aldi with Westry Retail Park
 - a. The 45m roundabout layout consented for Westry Retail Park (local planning reference F/YR15/0640/F).
 - b. The 60m roundabout layout proposed for Westry retail Park (local planning reference F/YR18/0566/F).

5.4.8 In addition, scenario 1a was assessed but without any junction capacity calibrations.

5.4.9 Details of the tests are set out in TN07, which is provided at Appendix 3, of which includes the model outputs. This section of the TA will present the results of each scenario.

Scenario 1a – Existing A141 / Hostmoor Avenue Junction – Calibrated

- 5.4.10 The results of the PICADY tests for the existing A141 / Hostmoor Avenue Junction, based on calibrations, is shown at Table 5.3 below.
- 5.4.11 The junction has been tested using a 'DIRECT' traffic profile, based on the observed traffic levels. The McDonald's and Aldi traffic have been assumed to exhibit the same traffic profile as existing traffic.

Table 5.3 – A141 / Hostmoor Avenue Junction: Existing Layout – Calibrated

	AM			PM			SAT		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2021 Base									
Hostmoor Ave to A141 (S)	0.9	9.70	0.42	3.3	21.15	0.78	5.1	23.69	0.86
From A141 (S)	1.8	17.34	0.64	1.2	14.89	0.56	3.9	25.07	0.81
2021 Base + McDonald's + Aldi									
Hostmoor Ave to A141 (S)	1.1	10.48	0.48	5.5	31.00	0.87	12.4	54.70	0.98
From A141 (S)	2.6	21.61	0.72	1.6	17.67	0.63	9.7	36.64	0.95
2026 Base									
Hostmoor Ave to A141 (S)	1.0	10.65	0.46	5.9	33.52	0.87	11.2	54.76	0.96
From A141 (S)	2.6	22.51	0.72	1.7	18.98	0.64	4.3	26.60	0.83
2026 Base + McDonald's + Aldi									
Hostmoor Ave to A141 (S)	1.3	11.59	0.52	11.0	62.84	0.96	37.3	163.27	1.08
From A141 (S)	4.0	28.35	0.80	2.4	23.42	0.72	23.8	57.14	1.05

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

- 5.4.12 The results of the 2021 PICADY tests, based on the existing junction layout with intercept calibrations, indicates that the junction approaches capacity during the Saturday peak hour, but remains within theoretical capacity with the McDonald's and Aldi in place.
- 5.4.13 In the 2026 scenario, the introduction of the McDonald's and Aldi results in the junction becoming over capacity during the Saturday peak hour, but remains within capacity during the AM and PM peak hours.
- 5.4.14 Normally an RFC of less than 0.85 is considered to indicate satisfactory performance of a junction to allow for a standard error within the PICADY formula of +/- 15%. However, the margin of error in this instance has been significantly reduced because the performance of the junction has been directly observed. Therefore, an RFC of 1.00 is more relevant in this case than 0.85.

Scenario 1a: Existing A141 / Hostmoor Avenue Junction – Uncalibrated

- 5.4.15 The A141 / Hostmoor Avenue Junction has been tested based on the existing junction layout without 'direct intercept adjustments' applied to the model as above.
- 5.4.16 The same model inputs used in the calibrated model above have been inputted in this model without calibrations.

5.4.17 The results of the PICADY tests, based on the 2021 and 2026 base scenarios, are shown at Table 5.4.

Table 5.4 – A141 / Hostmoor Avenue Junction: Existing Layout – Uncalibrated

	AM			PM			SAT		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2021 Base									
Hostmoor Ave to A141 (S)	1.7	18.42	0.59	39.4	271.42	1.13	71.7	393.01	1.17
From A141 (S)	1.8	17.34	0.64	1.2	14.91	0.56	3.9	25.07	0.81
2021 Base + McDonald's + Aldi									
Hostmoor Ave to A141 (S)	2.3	21.91	0.67	84.4	532.24	1.25	163.4	861.30	1.33
From A141 (S)	2.6	21.61	0.72	1.6	17.70	0.63	9.7	36.64	0.95
2026 Base									
Hostmoor Ave to A141 (S)	2.1	22.16	0.65	93.9	610.52	1.29	145.5	799.69	1.31
From A141 (S)	2.6	22.51	0.72	1.7	19.02	0.64	7.7	33.78	0.92
2026 Base + McDonald's + Aldi									
Hostmoor Ave to A141 (S)	3.0	28.74	0.74	142.7	900.32	1.41	241.2	1296.26	1.48
From A141 (S)	4.0	28.35	0.80	2.4	23.51	0.72	23.8	57.14	1.05

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

5.4.18 The results of the PICADY tests, based on the existing junction layout without intercept calibrations, indicates that the Hostmoor Avenue approach is expected to operate over capacity during the PM and Saturday peak hours in both the 2021 and 2026 base scenarios.

5.4.19 The A141 northbound approach is predicted to approach theoretical capacity during the Saturday peak hour in the 2021 base scenario with McDonald's and Aldi traffic, and overcapacity in the 2026 base scenario with McDonald's and Aldi traffic. The approach is expected to remain within capacity during the AM and PM peak hours.

5.4.20 As stated in their consultation report, dated 9th April 2021 (Appendix 4), CCC acknowledged the following:

"Given the above, CCC would take the view that the Aldi and McDonalds proposals together would trigger the need for intervention at the A141/Hostmoor Avenue junction, whether this be in the form of the proposed signals (with the recommended 'KEEP CLEAR' markings) as an interim scheme or the roundabout to be delivered as part of the Westry development, depending on delivery timescales of the Aldi store and Westry roundabout."

5.4.21 These mitigation options are assessed below.

Scenario 1b: Proposed A141 / Hostmoor Avenue Signalised Junction

- 5.4.22 The Connect Technical Note 'TN04 – Traffic Signal Junction Capacity Assessment' (12th November 2020), provided at Appendix 3, tested the operation of the A141 / Hostmoor Avenue Junction based on an alternative layout proposed by Connect where all approaches are signal-controlled.
- 5.4.23 Following comments raised by CCC in a consultation document, dated 11th February 2021, in relation to TN04, the Linsig model of the proposed signal scheme was revised. Details are provided in the Connect technical note 'TN06 – Response to Pre-application Comments' (19th February 2021), provided at Appendix 3, and reiterated in TN07.
- 5.4.24 Following the submission of TN06 and TN07 to CCC for review, a video meeting was held on 22nd March 2021 where CCC provided advice on the Linsig modelling parameters for the proposed signal scheme. A revised Linsig model was produced following the meeting and issued to CCC for re-evaluation. The revised Linsig outputs are provided at Appendix 17.
- 5.4.25 The results of the most recent Linsig tests for the proposed signal scheme are shown at Table 5.5 below.

Table 5.5 – A141 / Hostmoor Avenue Junction: Proposed Signal Layout

Junction Approach	AM 08:00-09:00		PM 16:45-17:45		SAT 11:30-12:30	
	DoS	MMQ	DoS	MMQ	DoS	MMQ
2021 Base + McDonald's + Aldi						
Hostmoor Avenue Left	55.6%	7.5	87.6%	18.2	78.7%	17.4
A141 Northbound Ahead	40.7%	0.3	47.5%	0.5	35.2%	0.3
A141 Northbound Right	78.5%	9.2	66.7%	8.8	66.0%	11.6
A141 Southbound Ahead Left	77.9 : 77.9%	18.1	88.7 : 88.7%	25.8	79.9 : 79.9%	13.9
2026 Base + McDonald's + Aldi						
Hostmoor Avenue Left	59.5%	8.2	94.4%	22.9	87.0%	21.7
A141 Northbound Ahead	44.1%	0.4	51.5%	0.5	38.7%	0.3
A141 Northbound Right	84.1%	10.6	71.8%	9.9	73.2%	13.3
A141 Southbound Ahead Left	84.3 : 84.3%	21.8	96.3 : 96.3%	35.4	85.1 : 85.1%	16.3

- 5.4.26 The Linsig model has been run on a three-stage sequence, Stage 2 of which includes the Hostmoor Avenue eastbound pedestrian crossing being called every cycle. In practice, it is expected that there will be a relatively low frequency of pedestrian calls for the crossing, perhaps once in every fourth cycle as an estimate. Therefore, the majority of cycles are likely to operate on a two-stage sequence, which could result in the junction potentially operating with more efficiency.

5.4.27 A consultation report was produced by CCC, dated 9th April 2021 (Appendix 4), in response to the revised proposed signal scheme tests, in which is stated the following:

"As previously noted within this document, the A141/Hostmoor Avenue signal junction scheme is anticipated to operate above the normally required 90% degree of saturation, being 96.3%. That said, the A141/Hostmoor Avenue junction as a signal junction is anticipated to operate with more available capacity in the '2026 Base + McDonald's + Aldi' than if it remained as its existing layout."

5.4.28 Further in their response, CCC suggested that 'KEEP CLEAR' markings would be required at the proposed McDonald's access on Hostmoor Avenue and at the Gipsy Lane junction on the A141 southbound. The scope for these markings will be considered.

Scenario 2a: Consented 45m Roundabout (F/YR15/0640/F)

5.4.29 As part of the planning permission for the Westry Retail Park (local planning authority reference F/YR15/0640/F), it has been consented that the A141 / Hostmoor Avenue Junction be redeveloped into a 45m diameter roundabout, with a new west access into the retail park.

5.4.30 The roundabout has been assessed based on the trips associated with the consented 6,888 sq.m. retail park.

5.4.31 The operation of the roundabout has been assessed using the ARCADY computer program based on a 'DIRECT' traffic profile derived from the 2018 weekday and 2015 Saturday observed flows on the junction.

5.4.32 Details of the ARCADY assessment parameters are set out in TN07 and the results of the assessment for the 2026 base year are shown at Table 5.6 below.

Table 5.6 – Consented A141 / Hostmoor Avenue Roundabout: 45m Diameter

	AM			PM			SAT		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2026 Base + Westry RP									
A141 (N)	3.0	10.14	0.76	4.6	15.02	0.83	1.8	8.16	0.64
Hostmoor Avenue	0.6	6.96	0.38	2.5	14.81	0.72	2.5	12.21	0.72
A141 (S)	2.2	6.92	0.69	3.3	9.05	0.77	2.9	8.31	0.75
Westry Retail Park	0.1	4.34	0.10	0.3	5.33	0.25	0.5	5.70	0.32
2026 Base + Westry RP + McDonald's + Aldi									
A141 (N)	3.1	10.65	0.77	5.1	16.58	0.85	2.0	9.10	0.67
Hostmoor Avenue	0.7	7.15	0.43	3.4	18.58	0.78	4.1	17.29	0.82
A141 (S)	2.3	7.17	0.70	3.5	9.63	0.79	3.5	9.68	0.78
Westry Retail Park	0.1	4.43	0.11	0.3	5.52	0.26	0.5	6.25	0.35

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

5.4.33 The results of the ARCADY tests for the consented 45m roundabout indicate that the roundabout is expected to operate within capacity in the 2026 base + Westry Retail Park scenario with the proposed Aldi and McDonald's traffic.

Scenario 2b: Proposed 60m Roundabout (F/YR18/0566/F)

- 5.4.34 As part of the planning application for the expansion of the consented Westry Retail Park (local planning authority reference F/YR18/0566/F), it is proposed that the consented 45m roundabout increase in diameter to 60m.
- 5.4.35 The roundabout has been assessed based on the trips associated with the expanded 14,771 sq.m. retail park.
- 5.4.36 The operation of the roundabout has been assessed using the ARCADY computer program based on a 'DIRECT' traffic profile derived from the 2018 weekday and 2015 Saturday observed flows on the junction.
- 5.4.37 Details of the ARCADY assessment parameters are set out in TN07 and the results of the assessment for the 2026 base year are shown at Table 5.7 below.

Table 5.7 – Proposed A141 / Hostmoor Avenue Roundabout: 60m Diameter

	AM			PM			SAT		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2026 Base + Westry RP									
A141 (N)	2.2	7.11	0.69	3.8	11.29	0.80	1.8	7.41	0.65
Hostmoor Avenue	0.4	4.73	0.30	1.5	8.24	0.60	1.7	7.90	0.63
A141 (S)	1.5	4.58	0.61	2.5	6.23	0.72	2.4	6.01	0.71
Westry Retail Park	0.2	3.52	0.17	0.6	4.90	0.40	1.1	6.05	0.52
2026 Base + Westry RP + McDonald's + Aldi									
A141 (N)	2.3	7.29	0.70	4.1	12.21	0.81	2.0	8.06	0.67
Hostmoor Avenue	0.5	4.77	0.34	1.8	9.29	0.65	2.4	9.75	0.72
A141 (S)	1.5	4.66	0.61	2.6	6.42	0.72	2.7	6.78	0.73
Westry Retail Park	0.2	3.54	0.17	0.7	5.00	0.40	1.2	6.66	0.55

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

- 5.4.38 The ARCADY tests show that the proposed 60m roundabout will be able to accommodate the expected increases in traffic demand as a result of the expanded Westry Retail Park development and the proposed Aldi and McDonald's more satisfactorily than the consented 45m roundabout.

Tesco Access Roundabout

- 5.4.39 The ARCADY9 computer program has been used to assess the operation of the Tesco Access Roundabout.
- 5.4.40 The model has been built using the same geometric parameters as used in the Westry Retail Park TA, which was accepted as a valid model.
- 5.4.41 At the request of CCC in pre-application discussions, the roundabout has been tested using a 'DIRECT' traffic profile derived from the traffic surveys undertaken at the roundabout. The assessed Westry Retail Park, McDonald's and Aldi traffic has been assumed to exhibit the same traffic profile as the traffic surveys.

5.4.42 The results of the ARCADY tests for the 2021 and 2026 base scenarios are set out at Table 5.8. The full output report is provided at Appendix 17.

Table 5.8 – ARCADY Summary – Tesco Access Roundabout

	AM			PM			SAT		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2021 Base									
Martin Avenue	0.1	4.29	0.05	0.2	3.83	0.15	0.3	4.39	0.26
Hostmoor Avenue (E)	0.2	2.91	0.16	0.3	2.94	0.23	0.3	2.98	0.20
Tesco access	0.1	3.04	0.12	0.4	3.72	0.31	1.0	5.09	0.49
Hostmoor Avenue (W)	0.4	3.16	0.31	0.4	2.99	0.29	0.6	3.39	0.38
2021 Base + McDonald's + Aldi									
Martin Avenue	0.1	4.28	0.05	0.2	3.92	0.16	0.4	5.86	0.29
Hostmoor Avenue (E)	0.2	2.90	0.16	0.3	2.98	0.24	0.3	3.57	0.21
Tesco access	0.1	3.04	0.11	0.4	4.14	0.30	1.0	6.73	0.50
Hostmoor Avenue (W)	0.4	3.16	0.31	0.6	3.38	0.38	1.3	4.88	0.57
2026 Base + Westry RP									
Martin Avenue	0.1	4.42	0.06	0.2	4.11	0.17	0.4	4.79	0.29
Hostmoor Avenue (E)	0.2	2.94	0.19	0.4	3.21	0.29	0.4	3.30	0.27
Tesco access	0.1	3.13	0.13	0.5	4.05	0.34	1.2	5.77	0.55
Hostmoor Avenue (W)	0.5	3.32	0.34	0.5	3.17	0.33	0.8	3.75	0.43
2026 Base + Westry RP + McDonald's + Aldi									
Martin Avenue	0.1	4.40	0.06	0.2	4.15	0.17	0.5	6.68	0.34
Hostmoor Avenue (E)	0.2	2.93	0.19	0.4	3.23	0.30	0.4	3.98	0.28
Tesco access	0.1	3.13	0.12	0.5	4.44	0.34	1.3	8.09	0.57
Hostmoor Avenue (W)	0.5	3.32	0.34	0.7	3.62	0.42	1.7	5.71	0.63

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

5.4.43 The junction capacity assessment for the Tesco Access Roundabout indicates that the roundabout will operate within capacity in both the 2021 and 2026 scenarios with the proposed Aldi and McDonald's in place.

5.4.44 The ARCADY tests show average maximum queue lengths of less than two vehicles on the Hostmoor Avenue (west) approach, which will have minimal interference with movements through the proposed Aldi site access.

Peas Hill Roundabout

5.4.45 The ARCADY9 computer program has been used to assess the operation of Peas Hill Roundabout.

5.4.46 The model has been built using the same geometric parameters used in the Westry Retail Park TA, which was accepted as a valid model.

5.4.47 At the request of CCC, the roundabout has been tested using a 'DIRECT' traffic profile derived from the traffic surveys undertaken at the roundabout. The assessed Westry Retail Park, McDonald's and Aldi traffic has been assumed to exhibit the same traffic profile as the traffic surveys.

5.4.48 The results of the ARCADY tests for the 2021 and 2026 base scenarios are set out at Table 5.9 below. The full output report is provided at Appendix 17.

Table 5.9 – ARCADY Summary – Peas Hill Roundabout

	AM			PM			SAT		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2021 Base									
A141 (N)	0.8	3.02	0.46	1.4	3.78	0.59	1.0	3.08	0.51
Retail Park	0.1	17.07	0.05	0.5	25.88	0.34	1.3	24.31	0.57
B1099	2.4	11.20	0.71	1.6	9.12	0.61	2.0	10.66	0.68
A141 (S)	2.3	10.10	0.71	3.2	12.77	0.77	2.4	11.23	0.71
Whittlesey Road	0.2	7.51	0.14	0.3	9.71	0.25	0.2	8.57	0.14
2021 Base + McDonald's + Aldi									
A141 (N)	0.9	3.08	0.47	1.5	3.94	0.60	1.2	3.28	0.54
Retail Park	0.1	17.80	0.06	0.6	30.29	0.38	1.6	31.88	0.64
B1099	2.6	12.00	0.73	1.7	9.81	0.64	2.5	12.62	0.72
A141 (S)	2.3	10.28	0.71	3.4	13.75	0.78	2.8	12.81	0.74
Whittlesey Road	0.2	7.73	0.15	0.3	10.16	0.25	0.2	9.30	0.15
2026 Base + Westry RP									
A141 (N)	0.9	3.13	0.47	1.9	4.61	0.66	1.5	3.86	0.61
Retail Park	0.1	18.75	0.06	1.9	81.76	0.71	6.5	107.94	0.97
B1099	3.8	15.88	0.80	3.3	16.53	0.78	6.3	27.17	0.89
A141 (S)	4.4	16.13	0.83	10.5	34.13	0.94	10.0	35.69	0.93
Whittlesey Road	0.2	8.97	0.18	0.5	13.68	0.34	0.3	12.70	0.21
2026 base + Westry RP + McDonald's + Aldi									
A141 (N)	0.9	3.15	0.48	2.0	4.70	0.67	1.6	3.95	0.62
Retail Park	0.1	19.00	0.06	2.2	95.80	0.76	7.8	127.30	1.02
B1099	3.9	16.14	0.81	3.6	17.59	0.79	7.2	31.26	0.91
A141 (S)	4.6	16.71	0.84	11.2	36.15	0.94	11.3	39.95	0.94
Whittlesey Road	0.2	9.11	0.18	0.5	13.87	0.34	0.3	13.11	0.22

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

5.4.49 The junction capacity assessment for Peas Hill Roundabout indicates that in the 2026 Base + Westry Retail Park scenario the Retail Park, B1099 and A141 (S) arms approach capacity during the Saturday peak hour and the A141 (S) arm approaches capacity during the PM peak hour.

5.4.50 The addition of the proposed Aldi and McDonald's traffic results in only a marginal increase in demand, which cannot be considered to represent a severe residual cumulative impact at this junction, in the context of the NPPF.

5.5 Section Summary

5.5.1 No pattern of collisions has been identified which is attributable to a road layout deficiency, nor one which is likely to be materially worsened by the development proposals.

Proposed Aldi Access / Hostmoor Avenue Priority Junction

5.5.2 The junction capacity test for the proposed Aldi Access on Hostmoor Avenue indicates that the junction will operate within capacity in the future scenarios with the proposed development and nearby McDonald's in place and with the inclusion of Westry Retail Park.

- 5.5.3 The predicted maximum average queue lengths for right-turning vehicles into Aldi are less than one vehicle in all scenarios, which demonstrates that there is minimal likelihood of Aldi queues interacting with the Tesco roundabout.

Existing A141 / Hostmoor Avenue Priority Junction

- 5.5.4 The junction capacity assessment for the existing A141 / Hostmoor Avenue Priority Junction indicates that for both the calibrated and uncalibrated models, the junction is predicted to operate over capacity during the Saturday peak hour in the 2026 future scenario with the proposed Aldi and McDonald's in place.
- 5.5.5 During pre-application discussions, CCC acknowledge that the existing situation at the roundabout, coupled with the impact of the Aldi and McDonald's development, would trigger the need for intervention at the junction, whether this be in the form of an interim signal scheme or the roundabout delivered as part of the Westry Retail Park, depending on timescales.

Proposed A141 / Hostmoor Avenue Signal Scheme

- 5.5.6 The signalisation of all arms of the junction is proposed as an interim scheme between the construction of the Aldi or McDonald's and the delivery of the consented roundabout as part of the Westry Retail Park development.
- 5.5.7 The proposed signal scheme was assessed using Linsig and indicates that the junction will operate within theoretical capacity during all peak hours for the 2021 and 2026 scenarios with the proposed Aldi and McDonald's in place.

Consented 45m Roundabout (F/YR15/0640/F)

- 5.5.8 The results of the ARCADY tests for the 45m roundabout consented as part of the Westry Retail Park development (reference F/YR15/0640/F) indicate that the roundabout will operate within capacity in the 2026 future scenario with the Westry Retail Park, Aldi and McDonald's traffic.

Proposed 60m Roundabout (F/YR18/0566/F)

- 5.5.9 The results of the ARCADY tests for the 60m roundabout proposed as part of the Westry Retail Park development (reference F/YR18/0566/F) indicate that the roundabout will operate within capacity in the 2026 future scenario with the expanded Westry Retail Park, Aldi and McDonald's traffic.

Tesco Access Roundabout

- 5.5.10 The junction capacity assessment for the Tesco Access Roundabout indicates that the roundabout will operate within capacity in the 2021 and the 2026 scenarios with the Westry Retail Park, Aldi and McDonald's in place.
- 5.5.11 The ARCADY tests show queue lengths of less than two vehicles on the Hostmoor Avenue (West) approach, which will have minimal interference with movements through the proposed Aldi site access.

Peas Hill Roundabout

- 5.5.12 The junction capacity assessment for Peas Hill Roundabout indicates that in the 2026 Base + Westry Retail Park scenario the Retail Park, B1099 and A141 (S) arms approach capacity during the Saturday peak hour and the A141 (S) arm approaches capacity during the PM peak hour.

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- 5.5.13 The addition of the proposed Aldi and McDonald's traffic results in only a marginal increase in demand, which cannot be considered to represent a severe residual cumulative impact at this junction, in the context of the NPPF.

6.0 SUMMARY AND CONCLUSIONS

6.1 Summary

6.1.1 Connect Consultants Limited is a firm of transport planning and highway design consultants that have been instructed by Aldi Stores Limited in relation to their proposed Aldi discount foodstore on Hostmoor Avenue in March, Cambridgeshire. The report is summarised as follows:-

- The site is accessible by a choice of travel modes and will reduce reliance on the private car consistent with national and local planning policy.
- The proposed development is well conceived in terms of its access arrangements, composition and layout.
- The proposed car park broadly accords with local parking standards. The proposed cycle parking provision is appropriate for the scale and location of the development.
- It has been demonstrated that the service arrangements will be able to accommodate delivery traffic.
- The traffic assessment included in this report is based on realistic traffic scenarios, including the 'worst-case' traffic levels associated with the committed Westry Retail Park development and the proposed McDonald's. The analysis demonstrates that the proposed development net traffic effect will be minor to moderate at the study junctions.
- The collision data shows that there are no locations where more than five collisions occurred during the study period, and no pattern of collisions has been identified which is attributable to a road layout deficiency, nor one which is likely to be materially worsened by the development proposals.
- Capacity assessments of the proposed site access junction, Tesco Access Roundabout and Peas Hill Roundabout show that the proposed development traffic can be accommodated by the junctions.
- Following pre-application discussions with CCC regarding the operation of the existing A141 / Hostmoor Avenue Junction, an interim signalisation scheme is proposed to be implemented between the construction of the Aldi or McDonald's and the delivery of the roundabout as part of the Westry Retail Park development, depending on delivery timescales.

6.2 Conclusions

6.2.1 The results of this assessment highlight that the proposed development is acceptable from a transport perspective and in accordance with Paragraph 109 of the NPPF and the local adopted Policy LP15(C).

Appendices

APPENDIX 1 – SITE LAYOUT

