J000360-TA01
July 2023

Hinton Hall, Tarporley Road
Whitchurch

Proposed Residential Institution Development

Transport Assessment

Prepared on behalf of:

Springcare Limited

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1.0 INTRODUCTION

1.1 Overview

1.1.1 This Transport Assessment (TA) has been prepared by Focus Transport Planning (Focus TP) on behalf of Springcare Limited (hereafter referred to as the Applicant) to consider the highways and transport matters related to proposals for a residential institution development at Hinton Hall, Whitchurch, Shropshire.

1.1.2 This TA forms part of the planning application submission documentation for the development of a parcel of land (the application site) to the northern outskirts of Whitchurch. The application seeks full planning permission for the delivery of a 41-bed nursing home & 2 close care apartments and construction of a 38-bed specialist dementia unit on the site, along with vehicular access to be taken directly from the route of the A49 Tarporley Road to the site's eastern boundary.

1.1.3 This report includes an assessment of the proposed site access strategy and an analysis of the impact of development related traffic over the immediate local highway network. The purpose of this report is to apprise the Local Planning and Highway Authority (LPA/LHA) Shropshire County Council (SCC of the anticipated highway and transport related effects associated with the proposed residential institution development scheme.

1.2 Transport Assessment Scope

1.2.1 This TA includes an assessment of the proposed residential institution development and an overview of the likely traffic related operational effects that could arise. This assessment has been undertaken in line with current best practice guidance on Transport Assessments, as outlined in National Planning Policy Guidance (NPPG).

1.2.2 The scope and nature of the assessment matters considered in this TA reflects the extent of highways and traffic issues considered to be of material interest to the LHA, following pre-application discussions (ref: PREAPP/20/00349).

1.2.3 In particular, the pre-application response included the following comments from Shropshire Highways:

- ***"It is considered that the principle of the development is likely to be acceptable from a highways perspective, subject to the site being served via a single satisfactory access, including visibility splays, parking and turning facilities being commensurate with the development proposed, local conditions and highway safety."***

- ***"Although the principle of the proposed conversion into a nursing home with specialist dementia unit may be acceptable in planning policy terms the submitted details have not demonstrated that the proposed access and its potential impact on the adjoining derestricted section of principal road is safe."***

- ***"Any future submission will need to demonstrate and justify that all vehicular movements generated by the proposed development are acceptable for that location and can be safely accommodated by the site access. The current layout would not appear to satisfy the highway concerns and considered the presence of the crawler lane on the A41 and any implications this may have on right turning traffic into the site."***

1.2.4 A Highways Scoping Note (HSN) was subsequently submitted to the LHA, SCC on 15th August 2022. SCC Highways responded as follows:

> ***"I refer to your email below and attachments, which relate to preapp reference PREAPP/20/00349. Having viewed the previous preapp submission and comments made by our then term consultant WSP, I consider that the fundamental issue to address is the access to the site and specifically the location of the access point relative to the adjacent highway carriageway configuration, with right turn traffic potentially sitting in the overtaking lane. Your attached scoping note includes a section under 3.2 Access Strategy and concludes that the current access arrangements onto the A49 is "entirely acceptable". I consider that this would need further supporting information to qualify this assertion and to include the submission of a road Safety Audit and traffic speeds undertaken."***

1.2.5 The LHA's pre-application response and comments to the HSN are included as **Appendix TA1** to this report.

1.3 TA Structure

1.3.1 This TA consists of eight sections including this introduction. The remainder of the report is summarised as follows:

- Section 2 provides an overview of the application site's location and existing local conditions, including surveyed traffic flows on the study area highway network, site planning history and details of local accident history;

- Section 3 provides a detailed description of the development proposals, including an overview of the proposed land use and a review of the proposed site access arrangements;

- Section 4 identifies the key assessment parameters used to inform this TA, including the proposed extent of assessment and the assessment time periods;

- Section 5 provides a review of the traffic levels anticipated to be generated by the development, and the distribution and assignment of this traffic over the local highway network;

- Section 6 considers the impact of the potential traffic loadings of the proposed development scheme on key local highway network links and junctions, as well as the need for any additional measures to mitigate the impact of development; and,

- Section 7 outlines a summary of the TA findings and provides Focus TP's conclusions.

2.0 SITE LOCATION & EXISTING CONDITIONS

2.1 Site Location

2.1.1 The strategic location of the application site is illustrated in **Figure TA1** to this report. This plan identifies the location of the site approximately 2.4km to the north of Whitchurch town centre. **Figure TA1** also identifies the key Strategic Route Network (SRN) corridor of the A49, which lies to the immediate east of the site.

2.1.2 **Figure TA2** illustrates the site location in terms of its immediate context and identifies the key areas of the local highway network including the A49 Tarporley Road. **Figure TA2** also illustrates the context of the application site relative to the existing rural areas to the north of Whitchurch.

2.2 Existing Site Conditions & Local Highway Network

Existing Site Conditions

2.2.1 The application site forms a parcel of residential dwelling land broadly rectangular in shape and located approximately 2.4km to the north of Whitchurch town centre. To the immediate north the site is bounded by agricultural land, whilst to the east lies the route of the A49 Tarporley Road. To the south lies Hinton Manor and west lies the Llangollen Branch of the Shropshire Union Canal.

2.2.2 The existing site falls within Use Class C3 – residential dwelling and comprises the Grade II listed Hinton Hall and outbuildings including stables, shippens, barns, sheds and a workshop, along with caravans, static homes, a large garage and gatehouse ('Hinton Lodge' – also listed) at the site access. Hinton Hall is set within a rural landscape setting.

2.2.3 Vehicular access to the existing site is obtained directly from the A49 Tarporley Road (the eastern boundary of the site).

Local Highway Network

2.2.4 The A49 Tarporley Road serves as a primary route to the north of Whitchurch, and crucially forms the key arterial route between the west of the town and the M56 trunk road corridor. The route is characterised by agricultural land for the majority of its length and key junctions tend to be roundabout arrangements, including that with Whitchurch Bypass to the south of the application site boundary. The route is currently subject to the national speed limit of 60mph for non-trunk roads.

2.2.5 Approximately 830m to the south of the application site lies the at-grade 3-arm roundabout junction of the A49 Tarporley Road with the Whitchurch Bypass. Further south of this junction between Shrewsbury and Ross-on-Wye, the A49 forms part of the strategic road network (SRN) managed by National Highways (NH).

2.2.6 Tarporley Road, from which access to the application site is currently taken from, serves as a key distributor route with simple priority junctions in the vicinity of the site. The route is constructed to a width of approximately 10m and is subject to a 60mph speed limit. A number of local access routes are served by Tarporley Road along its length, along with a small number of private driveways to agricultural development. In the vicinity of the site there is no footway provision, and no street lighting is in place.

2.3 Local Planning History

2.3.1 The most recent planning application on part of the application site was at Hinton Lodge (situated immediately west of the site access). The proposal was for the refurbishment and reinstatement of use as a dwelling (Re: 17/05290/FUL) with permission granted September 2018.

2.4 Review of Road Safety History

2.4.1 An appraisal of the operational safety of the immediate local network to the application site has been carried out through a review of historical Personal Injury Accident (PIA) data obtained from Crashmap.co.uk for the five-year period between Q1 2017 to Q3 2021 inclusive. Crashmap provides PIA data collected by the police. This data is approved by the National Statistics Authority and reported

on by the Department for Transport each year. This five-year search methodology accords with the search period criteria recommended in NPPG good practice guidance. Details of the search area are illustrated at **Figure TA3** to this report.

2.4.2 Review of the recorded PIA data demonstrates that there has been no recorded injury accident event along the immediate sections of the local highway network, for the full five-year search period.

2.4.3 It is therefore concluded that the above review of road safety has not identified any substantive road safety issues that would call the proposed development of the application site for residential care facility use into question.

2.5 Stage 1 Road Safety Audit – Findings

2.5.1 A Stage 1 Road Safety Audit (RSA) of the existing access junction was carried out during October 2022 with regard to the safety implications for road users of the proposed development (see **Section 3.2**).

2.5.2 The following potential issue was raised by the audit:

"General

PROBLEM

LOCATION: A49 Junction with proposed site

SUMMARY: Insufficient right turn provision could lead to rear end shunts Dedicated right turn provision has not been proposed to enable southbound vehicles to turn right into the development site. Given the location of the site access within a crawler lane section of the A49, concern is expressed that vehicles attempting to turn right into the site could be at increased risk of being struck by overtaking and potentially high speed southbound traffic.

RECOMMENDATION

Carry out further assessment and analysis to determine the appropriate level of right turn provision required."

2.5.3 The above potential issue is addressed under the access strategy in **Section 3.3** of this report and the full RSA report are included as **Appendix TA2** to this report.

2.6 Site Accessibility Audit

2.6.1 As outlined in **Section 2.2** above, the application site lies in a distinctly rural setting, set away from the closest highway network link – the A49. Moreover, given that the local highway network in the vicinity of the site serves as a key distributor route within a rural setting, it lacks formal pedestrian or cycle infrastructure. Accordingly, the site is located such that opportunities to utilise alternative modes of transport to the private car are somewhat limited.

2.6.2 With the above in mind the locational characteristics of the application site lends itself to the types of land use which would not be overly intensive in terms of vehicular trip generation – the re-use of the site as a care facility fits this land use profile. Located on the outskirts of Whitchurch, the site provides for a tranquil environment away from the busyness of town centres.

3.0 DESCRIPTION OF THE DEVELOPMENT PROPOSALS

3.1 Overview

3.1.1 The application scheme represents the conversion and extension to Hinton Hall, off Tarporley Road for future residential care facility use, to deliver 81-beds comprising a 41-bed nursing home; 2 close care apartments; and 38-bed specialist dementia unit, along with associated vehicular site access.

3.1.2 An illustrative masterplan and layouts of the driveway improvement scheme of the proposed development are provided at **Drawings M3551-PA-01-V4**, **543.21a**, **543.22b** & **543.18d** to this report.

3.1.3 It is proposed to develop the specialist dementia unit within the existing walled garden, with the nursing home and dementia unit connected via a glazed corridor.

3.1.4 The proposed site layout plan also identifies the layout of the site vehicle access arrangements, car parking areas, cycle parking, servicing area and ancillary landscaping zones.

3.2 Proposed Site Staffing Levels

3.2.1 Experience at other similar care facility sites operated by the Applicant suggests that typically up to 33 staff would be on-site at any one time.

3.3 Highway Access Strategy

3.3.1 As outlined in **Section 2** of this report, existing vehicular access to the application site is available via the existing access point direct from / onto Tarporley Road (the eastern boundary of the site).

3.3.2 The proposed access to the application site would be upgraded to a simple priority junction with a bounded surface and associated line markings in the same location as the existing access, with no right turn into the application site for all vehicles from the north and no left turn out of the site for heavy good vehicles (HGVs). **Drawing J000360-SK001** to this TA illustrates the proposed site access

arrangements and swept paths assessment of this junction are included at **Drawings J000360-ATR001 & ATR002** this report.

3.3.3 In order to inform the proposed access junction geometry, Automatic Traffic Counter (ATCs) surveys for traffic volume and vehicle speeds have been carried out along Tarporley Road at the location of the existing site access for a 7-day period from 16th – 22nd September 2022 (outside the school holiday period) and is considered to be representative of normal conditions.

3.3.4 The full ATC survey results are attached at **Appendix TA3** to this report. The observed 85th percentile speeds recorded on Tarporley Road are below:

- 85th Percentile southbound speed - 64.3mph;
- 85th Percentile northbound speed - 63.2mph.

3.3.5 The required visibility splays at the proposed site access junction have been determined using the SSD calculation methodology outlined in Manual for Streets 2 (MfS2) and based upon the observed prevailing 85th percentile speeds for each direction. The calculations are presented in **Appendix TA4** with the resultant visibility splays as follows:

- Visibility to the north - 226.1m;
- Visibility to the south - 219.4m.

3.3.6 Review of **Drawing J000360-SK002** identifies that the MfS2-derived visibility splays can be achieved at the site access junction.

3.3.7 In terms of the operational safety of the existing access junction, the Stage 1 RSA (see **Section 2.3**) has identified a potential concern for right turning vehicles into the application site from Tarporley Road. The RSA notes that, due to the location of the existing site access within a "crawler lane" section of the A49, there is an increased risk of rear end shunts when vehicles are slowing down or waiting to turn right into the site.

3.3.8 Given that this section of the A49 is on an incline, is subject to the national speed limit (60mph) and carries slow moving agricultural vehicles, it is considered that the introduction of a dedicated right turning lane in the centre of the carriageway would not be appropriate and could, in itself raise, further potential highway safety issues.

3.3.9 Given the above considerations it is proposed that the site access junction would be amended such that no right turning would be permitted from the north. Rather, traffic from the north wishing to access the application site would be required to continue past the site's access junction, before U-turning at the Tarporley Road / Whitchurch Bypass roundabout to the south, in order to then access the site via a left turn movement from the south.

3.3.10 This no right turn arrangement would result in an approximately 1.8km detour (2-min journey time) for development traffic originating from the north. This length of detour is not considered to be such that it would deter drivers from complying with the restricted turning arrangement.

3.3.11 It is proposed that the no right turn into the site access junction would be supported by a Traffic Regulation Order and associated signage strategy, comprising:

- Advanced no right turn sign ¼ mile in advance of site access (southbound approach), alongside illustration of u-turn at roundabout for care home access;
- No right turn sign at access (southbound approach);
- Ahead only carriageway markings at access (southbound approach);
- Sign at roundabout approach illustrating u-turn;
- 'Care Home' directional Sign at roundabout exit; and,
- 'Care Home' directional Sign at northbound approach to Care Home.

3.3.12 The proposed signage strategy is illustrated at **Figure TA4** with indicative signage plan at **Drawing J000360-SK003**.

3.3.13 It is acknowledged that the existing driveway connection to the hall is narrow with widths between 3.5m and 4.3m. It is therefore proposed to provide 4 passing places at suitable intervisible locations along the driveway to allow for 2 cars or 1 car and a service vehicle to pass each other safely. The proposed driveway improvement scheme is illustrated at **Drawing J000360-SK004** to this report with a swept path assessment at **Drawing J000360-ATR003** to this report showing that a rigid vehicle can safely access the application site from the public highway and turn around within the site in order to egress the site in forward gear.

3.3.14 Forward visibility assessment of the passing places is included at **Drawing J000360-SK005** to this report. Swept path assessments of the proposed passing places are included at **Drawings J000360-ATR004 to 006** this report. Priority would be given to vehicles accessing the site over vehicles egressing the application site. This arrangement would be indicated by providing TSRGD diagrams 615 and 615.1 at locations along the driveway as shown on **Drawing J00360-SK005**.

3.3.15 To reiterate:

- Excellent visibility is available at the site access junction (see **Section 3.3**);
- The proposed development would generate a limited number of trips (see **Section 5** to this report); and
- It is anticipated that the majority of movements to the application site would be from the south (main local population centre being Whitchurch, where the majority of staff members and visitors are likely to reside), and therefore traffic from the north would be limited (see **Section 5.3** to this report).

3.4 Vehicle Servicing

3.4.1 **Drawings J000360-ATR007 & 008** to this report illustrates that a 13/18 Tonne Rigid Vehicle & Refuse Vehicle can safely turn around within the proposed site layout. This assessment demonstrates that the proposed site layout is fully

accessible to larger service vehicles and therefore, would also be appropriate for access by emergency vehicles.

3.5 Sustainable Transport Measures

3.5.1 As mentioned in **Section 2.5** of this report, given that the local highway network in the vicinity of the application site serves as a key distributor route within a rural setting and lacks formal pedestrian or cycle infrastructure, it is not considered that non-car modes of transport would be favoured by staff or visitors to the site. Notwithstanding the above, 8 secure cycle parking spaces would be provided within a secure bike store located to the east of the dementia unit building, along with staff shower/changing/locker facilities within the buildings.

3.5.2 Additionally, the Applicant proposes to operate a shuttle bus service 7 days a week from two stops in Whitchurch to Hinton Hall for staff and visitors at the following times:

- From Whitchurch 2 Stops
  - 07:45
  - 13:45
  - 14:45
  - 15:45
  - 19:45

- From Hinton
  - 08:15
  - 14:15
  - 15:15
  - 16:15
  - 20:15

3.6 Car Parking

3.6.1 It should be noted that no formal parking standards for Shropshire are available. In the absence of parking standards, the level of car parking proposed at the application site has been calculated with reference to a first principles assessment,

based on the likely staffing and visitor numbers and the Applicant's experience of operating of similar sites.

3.6.2 This first principles assessment identifies the following requirements:

- 1 space per 4 residents for visitors. Applied to the proposed development this relates to 21 spaces for visitors (based on 81 residents); and

- 1 space per 2 staff, with experience identifying that some staff would car share, and others are likely to utilise the proposed shuttle service, i.e. 17 spaces for 33 total staff. An additional 6 overspill parking spaces would also be provided to accommodate additional staff vehicles that may be on-site at staff changeover periods.

3.6.3 A total of 44 car parking spaces plus 1 accessible car parking space, spread over 4 locations, are therefore proposed to support the proposed scheme. The location of these car parking spaces would be as follows:

- 18 standard car parking spaces within a car park located approximately 155m from the access junction to the south of the driveway (set aside for staff use);

- 13 standard and 1 accessible car parking spaces within a car parking area located at the main entrance to the care facility;

- 6 standard car parking spaces to the north-east of the main entrance to the care facility; and

- 7 standard car parking spaces at the turning head and northern entrance linking the nursing home and the dementia unit.

4.0 EXTENT OF ASSESSMENT & KEY ASSESSMENT PARAMETERS

4.1 Proposed Extent of Assessment

4.1.1 During pre-application discussions with SCC (see Section 1.2), the scope of the transport submissions to support a planning application for the proposed residential development formed a key issue – in particular the extent of any assessment of the local highway network that ought to be considered.

4.1.2 During the abovementioned initial discussions, it was understood that the TA would need to demonstrate given that it is proposed to take access via the existing access point; how the existing site access arrangements onto the A49 would safely accommodate the anticipated traffic generated by the proposed care facility, with specific consideration as to how traffic from the north would access the application site.

4.1.3 Section 3 of this TA has therefore set out the design and nature of the proposed site access arrangements & operation, internal site road layout and car parking, whilst section 5 of this TA will present the modelled effects at the junction of the site access road and Tarporley Road.

4.2 Assessment Time Periods

4.2.1 As mentioned in **Section 3.3** of this report, review of background daily traffic patterns derived from the September 2022 ATC surveys indicated that maximum background traffic levels over the local highway network are experienced during the following weekday time periods:

- Network AM peak hour: - **08:00-09:00**
- Network PM peak hour: **- 16:00-17:00**

4.2.2 These AM & PM peak periods are also likely to represent the maximum traffic periods associated with traffic to and from the proposed residential development. With this in mind, these time periods have been utilised for the consideration of

anticipated application site trip generation as considered in the following section of this report.

4.3 Future Year Traffic Growth Assumptions

4.3.1 It is anticipated that, based upon current market conditions, the development of the care facility site could be completed and fully occupied by the end of 2024. Accordingly, a 2024 opening year date has been utilised for core traffic demand assessments within this TA. In order to account for future network traffic conditions, an additional future design year of 2028 has been considered for all capacity related assessments. This represents 5 years beyond the submission of the planning application.

4.3.2 Guidance published by the DfT identifies that future estimates of traffic should be made through the application of regional growth factors derived from the National Transport Model (NTM). NTM forecasts give traffic growth by region, road type and whether the area is built up or not. These forecasts are then adjusted by local TEMPro factors to reflect local traffic trends. **Appendix TA5** provides the TEMPro growth factor outputs for the Shropshire 001 Super Output Area (MSOA), in which the application site lies, for the above future year periods, whilst **Table TA4.1** summarises the results.

Table TA4.1: TEMPro Adjusted NTM Growth Factors

	2022-2024	2022-2028
Weekday AM Peak	1.0200	1.0557
Weekday PM Peak	1.0202	1.0559

4.3.3 The TEMPro adjusted NTM growth factors have been applied to the 2022 surveyed traffic flows presented in **Figure TA5** to produce the 2024 Opening Year, and the 2028 Future Year background traffic flows are illustrated in **Figure TA6**.

4.4 Committed Development Traffic

4.4.1 Focus TP is not aware of any significant additional local committed development schemes that could be expected to have a material influence on future baseline traffic conditions in the immediate vicinity of the application scheme. However, given that TEMPro adjusted National Transport Model (NTM) factors, as outlined

above, already include for both local housing and employment growth projections (as derived from such sources as Local Plans), the effects of any notable committed development schemes should be inherently accounted for within the application of general network growth.

5.0 ANTICIPATED TRIP GENERATION AND DISTRIBUTION

5.1 Introduction

5.1.1 This section of the Transport Assessment seeks to identify the levels of traffic anticipated to be generated by the proposed residential institution development scheme and the routes that such traffic is likely to take on the local highway network.

5.2 Anticipated Trip Generation

5.2.1 The potential trip generation associated with the proposed development has been determined via reference to representative residential institution sites held within the industry standard TRICS development trip rate database. TRICS is a nationally regarded source of historical trip demand data and contains observed traffic data for a variety of development-type sites and, as such, can be considered to produce reliable base trip rate data.

5.2.2 As outlined in **Section 1.1**, the proposed development falls within Use Class C2 – residential institution. Trip rates for the proposed development have been generated through reference to data for similar sized care home (elderly residential) developments held in the TRICS database. Due to lack of 'freestanding' rural sites, 'edge of town' and 'suburban area' locations have been utilised.

5.2.3 The following search criteria has been applied within TRICS to obtain trip rates for this proposed use:

- Health – Care Home (Elderly Residential);
- Trip rates for vehicles were selected;
- Sites in Greater London and Ireland excluded;
- Only weekday surveys were selected;

- Due to lack of 'freestanding' rural sites, 'edge of town' and 'suburban area' locations were selected;
- Selection by number of residents (40 to 180); and
- The default date range was selected.

5.2.4 Review of the TRICS data attached at **Appendix TA6** suggests the following trip rates, for both the peak hour periods, as outlined in **Tables TA5.1** and **TA5.2** respectively below:

Table TA5.1: TRICS Derived Trip Rates – Care Home (Elderly Residential)

	Private Housing - Trip Rate *(per dwelling)*		
	Arr	**Dep**	**Total**
AM Peak (08:00-09:00)	0.085	0.063	0.147
PM Peak (16:00-17:00)	0.121	0.161	0.282

5.2.5 Application of the above trip rates to the proposed development size of 81 residents would suggest the following estimates of trip demand.

Table TA5.2: Predicted Residential Development Trips

	Private Housing - Trips		
	Arr	**Dep**	**Total**
AM Peak (08:00-09:00)	7	5	12
PM Peak (16:00-17:00)	4	11	15

5.2.6 Review of the above trip rate assessment identifies that the residential institution development of the application site would typically be expected to generate in the order of 13 two-way vehicle movements per hour during the AM peak periods, with circa 23 two-way movements predicted in the development PM peak hour. This represents just 1 additional vehicle movement every 3 minutes over the immediate local highway network and is unlikely to result in any noticeable impact upon local network operating conditions.

5.3 Predicted Development Traffic Distribution and Assignment

5.3.1 The distribution of development related traffic to and from the application site has been undertaken on the basis of a gravity model derived from the 2011 Census Journey to Work data, which provides employment destination information for all wards within the UK.

5.3.2 The 2011 Census data was analysed with regard to all employment trips made from all 2011 super output areas to the application site 2011 super output area (E02006015 : Shropshire 001) and, in particular, those made by car – see **Figure TA7** to this report. Trips to the employment destination ward were distributed on the basis of the most likely route choices that drivers would make, based on local knowledge of the area along with proprietary traffic routing software. The distribution model is included within **Appendix TA7** to this report. **Table TA5.3** below illustrates the calculated anticipated proportional distribution of traffic along the key local route corridor:

Table TA5.3: Anticipated Distribution of Development Traffic

Route	Proportion of Development Traffic
A49 Tarporley Road – North of Site Access	6%
A49 Tarporley Road - South of Site Access	94%

5.3.3 The above development turning proportions are illustrated in **Figure TA8** to this report, whilst assignment of the anticipated peak hour development trip totals to these distribution proportions is illustrated in **Figures TA9** to this report. Review of **Figures TA8** and **TA9** identifies that 2 additional two-way movements are anticipated to arise on Tarporley Road north of the site access during the AM peak hour, with 12 additional two-way movements on Tarporley Road south of the site access travelling towards the Whitchurch Bypass / Tarporley Road Roundabout. During the PM peak period 2 additional two-way movements are anticipated on Tarporley Road north of the site access, with 15 on Tarporley Road south of the site access travelling towards the Whitchurch Bypass / Tarporley Road Roundabout.

5.4 Predicted Future Year Traffic Flows

5.4.1 The anticipated assignment of development trips illustrated in **Figures TA9** have been added to the projected 2024 Opening Year and 2028 Future Year baseline network traffic movements identified in **Figures TA5** and **TA6** in the following section of this TA. The resulting 2024 Opening Year and 2028 Future Year "Do Something" (i.e. including proposed development) network traffic flows used for the assessment of development impact are illustrated in **Figures TA10** and **TA11**.

6.0 ASSESSMENT OF ANTICIPATED DEVELOPMENT TRAFFIC IMPACT

6.1 Introduction

6.1.1 This section of the report considers the operation of the immediate highway network to the application site and the ability of this network to accommodate the predicted future development traffic flow conditions identified in **Section 5**. Assessment of the impact of the development proposals has been carried out through the consideration of junction operational capacity at the junction of the site access road with the A49 Tarporley Road.

6.1.2 Paragraphs 110-111 of the National Planning Policy Framework (July 2018) (NPPF) provide guidance on the nature and detail of development transport appraisal to be carried out to support new development schemes and those key matters to be considered when determining the suitability of proposals:

> ***"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) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code, and***
>
> ***d) 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." (Para 110)***
>
> ***"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." (Para 111)***
>
> ***"All developments that will generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or Transport Assessment so that the likely impacts of the proposal can be assessed" (Para 113)***

6.1.3 Paragraph 111 to NPPF is considered to be of key relevance in the context of the review of the proposed development at Hinton Hall, Tarporley Road, and the assessment of the operation of the immediate local highway network. NPPF clearly identifies that development should only be refused on traffic and transportation grounds in those cases where highways impact would be 'severe'. This is typically understood to mean situations where development is likely to result in a material detrimental step change in highway network operating circumstances when compared to predicted baseline conditions.

6.2 Link Impact Assessment (Percentage Change)

6.2.1 Traditionally, link flow assessment criteria have been based on those percentage impact thresholds identified in 1994 Institution of Highways and Transportation report 'Guidelines for Traffic Impact Assessment'. This document suggested that more detailed analysis of highway impact and / or capacity improvements was only likely to be required for situations when either:

- Traffic to / from the development exceeds 10% of existing two-way traffic on the adjoining highway; or,

- Where traffic to / from the development exceeds 5% of the existing two-way traffic flow on the adjoining highways at locations where traffic congestion exists within the assessment period or in other sensitive locations.

6.2.2 This position was reviewed and updated in March 2007 DfT document "***Guidelines for Transport Assessment***", subsequently withdrawn in 2014, which notes:

> ***"If the TA confirms that a development will have material impact on the highway network, the level of impact at all critical locations on the network should be established. A particular example of material impact would be a worsening of congestion. In congested areas, the percentage traffic impact that is considered significant or detrimental to the network may be relatively low (possibly below the average daily variation in flow), and should have been determined in discussions with the relevant highway authorities. For the avoidance of doubt, the 1994 guidance regarding the assessment thresholds of 10 per cent and 5 per cent levels of development traffic relative to background traffic is no longer deemed an acceptable mechanism, since it creates an incentive in favour of locating development where high levels of background traffic already exist."***

6.2.3 Notwithstanding these observations, in the case of the immediate local highway network to the application site, it is considered that the traditional 5% & 10% thresholds still represents a reasonable 'contextual guide' as to the level / extent of proposed development traffic impact on immediate local routes. The use of these assessment thresholds should, of course, be viewed in the context of the predicted total development traffic levels – with **Section 5** to this report having identified that maximum peak hourly development traffic is likely to be no greater than 1 additional vehicle movement every 3 minutes.

6.2.4 **Table TA6.1** below demonstrates the anticipated changes in 2024 Baseline opening year observed traffic flows associated with the addition of the predicted proposed development traffic estimates:

Table TA6.1: Predicted Changes in Link Flow on Immediate Sections of the A49 Tarporley Road Corridor to the Site

	2024 AM Peak Period			2024 PM Peak Period		
	Devel	Baseline	% Change	Devel	Baseline	% Change
A49 Tarporley Road (North of Site Access)	2	149	1.34%	2	221	0.73%
A49 Tarporley Road (South of Site Access)	11	224	4.86%	14	218	6.52%

Two-way vehicle flow totals

6.2.5 Review of the link flow assessment results demonstrates that the proposed development is only predicted to result in link flow increases of less than 1.4% of 2024 Baseline conditions on A49 Tarporley Road during the AM peak hour. During the PM peak hour, the proposed development is predicted to result in link flow increases of just over 6.5% of 2024 Baseline conditions on A49 Tarporley Road. Such increases are well below traditional guideline 'trigger' thresholds for the undertaking of additional impact assessment and reflect the generally low levels of development traffic demand predicted (typically of the order of 1 additional vehicle every 3 minutes on any section of Tarporley Road), noting that the adjoining highways are not considered to be 'sensitive'.

6.2.6 Given the above review, it is considered that application site development traffic impact would be negligible and would not result in 'severe' network operational effects that would require the provision of specific network capacity improvements

over and above the proposed enhanced operational access arrangements to serve the proposed development.

6.3 Site Access Junction Operational Capacity

6.3.1 Notwithstanding the above conclusions regarding link impact, in order to provide a comprehensive understanding of potential operational issues of the application scheme, this TA report also includes for an appraisal of the future capacity of the proposed site access junction with A49 Tarporley Road. Operational capacity of this junction has been assessed using industry standard analysis software for give way junctions (JUNCTIONS – PICADY Module).

6.3.2 The PICADY software considers junction performance with respect to the Ratio of Flow to Capacity (RFC) and associated traffic queuing. RFC values for approach arms between 0.00 and 0.85 are generally considered to represent stable and acceptable operating conditions. Values between 0.85 and 1.0 represent variable operation i.e. possible substantive queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction. RFC values in excess of 1.0 represent overloaded conditions i.e. congested conditions.

6.3.3 Historical DfT design guidance states the following with respect to the design of new junction schemes and operating capacity thresholds:

> ***"Due to site to site entry variation, there may be a standard error of prediction of the entry capacity by the formulae of + or – 15% for any site. Thus, queuing should not occur in the various turning movements in the chosen design year peak hour in 5 out 6 peak periods or sites, if a maximum RFC of about 85% (0.85) is used. Similarly, if a maximum RFC of 75% is used, queuing will theoretically be avoided in 39 out of 40 peak hour periods or sites.***
>
> ***The general use of designs with an RFC of about 85% is likely to result in a level of provision which will be economically justified…."***

6.3.4 The above guidance identifies that it is possible for a junction to operate with individual RFC levels of above 0.85 without unacceptable congestion and delay taking place. The 0.85 threshold identifies the optimum position at which operational capacity is maximised when viewed against the likely frequency of

queuing and delay events. RFC values of above 0.85 simply demonstrate a greater potential for congestion and delay to occur, which must be viewed in the context of the extent of future year horizon under assessment and general network wide conditions.

6.3.5 Junction assessment work has been carried out for the future year 2028 for the 'Do-Something' Background + Development scenario, as this represents the maximum traffic conditions modelled. The results of these 2028 assessment runs are summarised in **Table TA6.2** below, with relevant PICADY model outputs attached as **Appendix TA8**.

Table TA6.2: A49 Tarporley Road / Site Access Junction PICADY Results: 2028 'Do-Something' Baseline + Proposed Development Traffic

Turning Movement	AM Peak (08:00-09:00)			PM Peak (16:00-17:00)		
	Traffic Flow (PCUs)	RFC	Queue (PCU)	Traffic Flow (PCUs)	RFC	Queue (PCU)
Exit from application site to A49 Tarporley Road – Southbound	1	0.00	0.0	10	0.02	0.0
Exit from application site to A49 Tarporley Road – Northbound	4	0.01	0.0	1	0.00	0.0

6.3.6 Review of these capacity assessment results demonstrates that the site access connection to the A49 Tarporley Road corridor is predicted to operate with significant spare capacity during peak periods for the future year assessment scenario. Maximum RFC values would be well below the 0.85 capacity thresholds and no queuing.

6.4 Impact Summary

6.4.1 Operational capacity assessments have been undertaken for key immediate sections of the local highway network to the application site. These results demonstrate that:

Link Flow Impact

- Forecast traffic levels associated with the care facility development scheme during critical AM & PM peak periods could be expected to be generally low, with maximum development related increases on immediate sections of the

A49 Tarporley Road corridor predicted to be less than 6.6% of 2024 opening year baseline traffic demand. Maximum link impact could be expected to occur on the section of A49 Tarporley Road to the south of the site access junction, but even in this case, development related traffic increases would only be circa 1 vehicle every 3 minutes during traditional 'rush hour' network peak periods. Such additional development flow levels would not typically be expected to result in a material / severe change in local network operating conditions.

Site Access Junction Performance

- Detailed operational capacity testing of the proposed site access connection to the A49 Tarporley Road corridor demonstrates that the proposed T-junction layout could be expected to operate with a substantive level of spare capacity, even including for 2028 future year conditions and 'worst case' 85th percentile development traffic demand estimates. Predicted RFC levels would be well below critical threshold values and maximum queuing be at negligible levels and would not impact on through traffic movements on Tarporley Road.

6.4.2 Given the above review of issues, it is considered that application site development traffic impact could be expected to only be of generally limited scale and would not result in 'severe' network operational effects that would require the provision of additional network capacity or safety improvements.

7.0 SUMMARY & CONCLUSIONS

7.1 Introduction

7.1.1 This Transport Assessment has been prepared by Focus Transport Planning on behalf of Springcare Limited in support of a planning application seeking full planning permission for the residential institution development at Hinton Hall, Whitchurch, Shropshire.

7.1.2 The project represents the development of the application site to provide 81-bed care facility served directly via the existing access on to the route of the A49 Tarporley Road. This report includes a review of existing local conditions, consideration of the development scheme, review of the proposed site access strategy and an analysis of the impact of development related traffic over the immediate local highway network.

7.1.3 This report has been prepared in accordance with National Planning Policy Guidance (NPPG), and supporting documents, with the scope and nature of the assessment matters reflecting the extent of highway and transport issues considered to be of material interest to the Local Planning & Highway Authority, Shropshire County Council.

7.2 Site Location & Existing Conditions

7.2.1 The application site is located approximately 2.4km to the north of Whitchurch town centre, with the key distributor route of the A49 immediately to the east of the site. The site comprises the Grade II listed Hinton Hall and outbuildings including stables, shippens, barns, sheds and a workshop, along with caravans, static homes, a large garage and gatehouse ('Hinton Lodge' – also listed) at the site access.

7.2.2 The application site is bounded to the north by agricultural land, to the south by Hinton Manor and to the west by the Llangollen Branch of the Shropshire Union Canal.

7.2.3 Vehicular access to the existing site is obtained directly from the A49 Tarporley Road. The private driveway forms an informal priority T-junction with Tarporley Road.

7.2.4 An appraisal of the operational safety of the immediate local network to the application site has been carried out through reference to Personal Injury Accident (PIA) data for the most recently available standard five-year search period Q1 2017 – Q3 2021. Review of the historical accident information identifies that there have been no recorded injury accident events along the immediate sections of the local highway network, for the full five-year search period.

7.2.5 The review of local highway safety records ultimately concludes that there are no substantive road safety issues that would call the proposed development of the application site into question.

7.3 Site Accessibility Audit

7.3.1 Given that the local highway network in the vicinity of the application site serves as a key distributor route within a rural setting, it lacks formal pedestrian or cycle infrastructure. Accordingly, the site is located such that opportunities to utilise alternative modes of transport to the private car are somewhat limited.

7.4 Description of the Proposal Scheme

7.4.1 Hinton Hall is proposed to be redeveloped to deliver 81-beds comprising a 41-bed nursing home; 2 close care apartments; and 38-bed specialist dementia unit.

7.4.2 Access to the development scheme is proposed to be taken from Tarporley Road to the east of the application site, via the existing priority-controlled T-junction. The TA has demonstrated that suitable visibility splays are available from the site access. This report has also outlined that it is proposed to prohibit right turn movements into the access from the north, supported by a Traffic Regulation Order and signage strategy. Any vehicles wishing to access the application site from the north would be required to continue past the site's access junction, before U-turning at the Tarporley Road / Whitchurch Bypass roundabout to the south, in order to then access the site via a left turn movement from the south.

7.4.3 It is proposed that passing places are provided at suitable intervisible locations along the driveway to allow for 2 cars of 1 car and a service vehicle to safely pass.

7.4.4 Cycle and car would be provided fully to accommodate the proposed development. The proposed site layout has been demonstrated to be fully accessible by larger service vehicles, such as a 13/18 Tonne Rigid Vehicle.

7.5 Key Assessment Parameters

Proposed Extent of Assessment

7.5.1 During pre-application discussions with SCC, it was understood that the TA would need to demonstrate given that it is proposed to take access via the existing access point; how the existing site access arrangements onto the A49 would safely accommodate the anticipated traffic generated by the proposed care facility, with specific consideration as to how traffic from the north would access the application site.

7.5.2 This TA has therefore set out the design and nature of the proposed site access arrangements & operation, internal site road layout and car parking. Furthermore, this TA has presented the modelled effects at the junction of the site access road and Tarporley Road.

Key Assessment Parameters

7.5.3 Based on the review of background daily traffic demand patterns derived from the September 2022 ATC surveys, maximum background traffic levels across the local highway network are experienced for the AM and PM peak hours of 08:00-09:00 and 16:00-17:00 respectively. Given that these AM & PM peak periods accord with the maximum traffic demand periods associated with traffic to and from the proposed residential institution development, these time periods have been utilised for the network capacity appraisals included in this TA report.

7.6 Anticipated Trip Generation and Distribution

7.6.1 Development traffic estimates have been calculated via reference to the TRICS database of development trip rates for the "Health – Care Home (Elderly Residential)" land use.

7.6.2 Based on this approach, it has been identified that the proposed development could generate approximately 13 two-way vehicle movements per hour during the AM peak periods and 23 two-way movements during the PM peak hour. The level of trip generation would equate to just 1 additional vehicle movement every 3 minute during each peak hour – a level of additional traffic that is unlikely to give rise to any noticeable impact upon local highway network operating conditions.

7.6.3 The anticipated distribution of residential institution development related peak hour traffic movements has been based upon the output of a gravity model, utilising 2011 Census Journey to Work statistics.

7.7 Assessment of Anticipated Development Traffic Impact

7.7.1 As outlined above, assessment of the impact of the development proposals has been carried out through the consideration of junction operational capacity at the junction of the site access road with the A49 Tarporley Road.

Junction Operational Impact

7.7.2 Review of these capacity assessment results demonstrates that the site access connection to the A49 Tarporley Road corridor is predicted to operate with significant spare capacity during peak periods for the future year assessment scenario. Maximum RFC values would be well below the 0.85 capacity thresholds and queuing would be at negligible levels.

Impact Summary

7.7.3 Operational capacity assessments have been undertaken for key immediate sections of the local highway network to the application site. These results demonstrate that forecast traffic levels associated with the care facility

development scheme during critical AM & PM peak periods could be expected to be generally low, with maximum development related increases on immediate sections of the A49 Tarporley Road corridor predicted to be less than 6.6% of 2024 opening year baseline traffic demand.

7.7.4 Detailed operational capacity testing of the proposed site access connection to the A49 Tarporley Road corridor demonstrates that the proposed T-junction layout could be expected to operate with a substantive level of spare capacity, even including for 2028 future year conditions and 'worst case' 85th percentile development traffic demand estimates. Predicted RFC levels would be well below critical threshold values and maximum queuing be at negligible levels and would not impact on through traffic movements on Tarporley Road

7.7.5 Given the above review of development related effects, it is considered that the proposal scheme would not result in a "severe" detrimental impact on local highway network operation. The proposals would give rise to limited increases in hourly traffic demand during critical network peak periods and not at a level that could be considered to represent a reasonable reason for highways-based objection.

7.8 Conclusions

7.8.1 This report has demonstrated that the Hinton Hall residential institution development proposals would represent appropriate and sustainable development when considered in highways and transport terms. The application site is located within a distinctly rural setting, set away from the closest highway network link – the A49. Accordingly, the site is located such that opportunities to utilise alternative modes of transport to the private car are somewhat limited.

7.8.2 With the above in mind the locational characteristics of the application site lends itself to the types of land use which would not be overly intensive in terms of vehicular trip generation – the re-use of the site as a care facility fits this land use profile. Located on the outskirts of Whitchurch, the site provides for a tranquil environment away from the busyness of town centres.

7.8.3 It is considered that the proposed development would not give rise to a severe detrimental impact on local highway network operation – development traffic increases would not be significant, and operational effects on local highway network capacity would be limited. Focus TP therefore considers that there are no overriding reasons for refusing the planning application on highways and transportation grounds.