

Holt Road  
Residential Scheme

Transport Assessment

July 2018

# Holt Road Residential Scheme

## Transport Assessment

Version 3-0

July 2018

Produced by:



For:



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## Project Information Sheet

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# 1. Introduction

- 1.1 Integrated Transport Planning Ltd has been commissioned by Wrexham Glyndŵr University to produce a Transport Assessment to support a planning application for up-to 77 residential dwellings and the construction of a new vehicular access from Holt Road.
- 1.2 This Transport Assessment is accompanied by a Framework Travel Plan that aims to increase the use of sustainable transport modes and reduce the potential impact on the local highway network. The two documents should therefore be read together.
- 1.3 The remainder of this report is organised into the following sections:
- Section 2 introduces relevant national and local transport planning policy
  - Section 3 provides an overview of the existing site, including connectivity by a range of modes and the local highway network
  - Section 4 reviews the proposed development and gives details of access, servicing and parking strategies
  - Section 5 calculates the likely traffic impact arising from the proposed development, including trip distribution and assessment of key local junctions
  - Section 6 provides a summary of key findings, proposed mitigation and a conclusion

## Pre-Application Consultation

- 1.4 A pre-application consultation highlighted a number of issues relating to transport and highways. These have been addressed when preparing the revised Transport Assessment.
- 1.5 Additional information or clarifications based on pre-application comments have been highlighted throughout the report, as shown here.

## 2. Policy

### People, Places, Futures – The Wales Spatial Plan

2.1 The Wales Spatial Plan is a high-level document that's purpose is:

- *Making sure decisions are taken with regard to their impact beyond sectoral or administrative boundaries and that the core values of sustainable development govern everything we do*
- *Setting the context for local and community planning*
- *influencing where we spend money through understanding the roles of and interactions between places*
- *providing a clear evidence base for the public, private and third (voluntary) sectors to develop policy and action.*

2.2 The Wales Spatial Plan defines sustainable development as:

*...improving wellbeing and quality of life by integrating social, economic and environmental objectives in the context of more efficient use of natural resources.*

2.3 In regard to travel and climate change, The Wales Spatial Plan supports the development of spatially targeted responses. This includes:

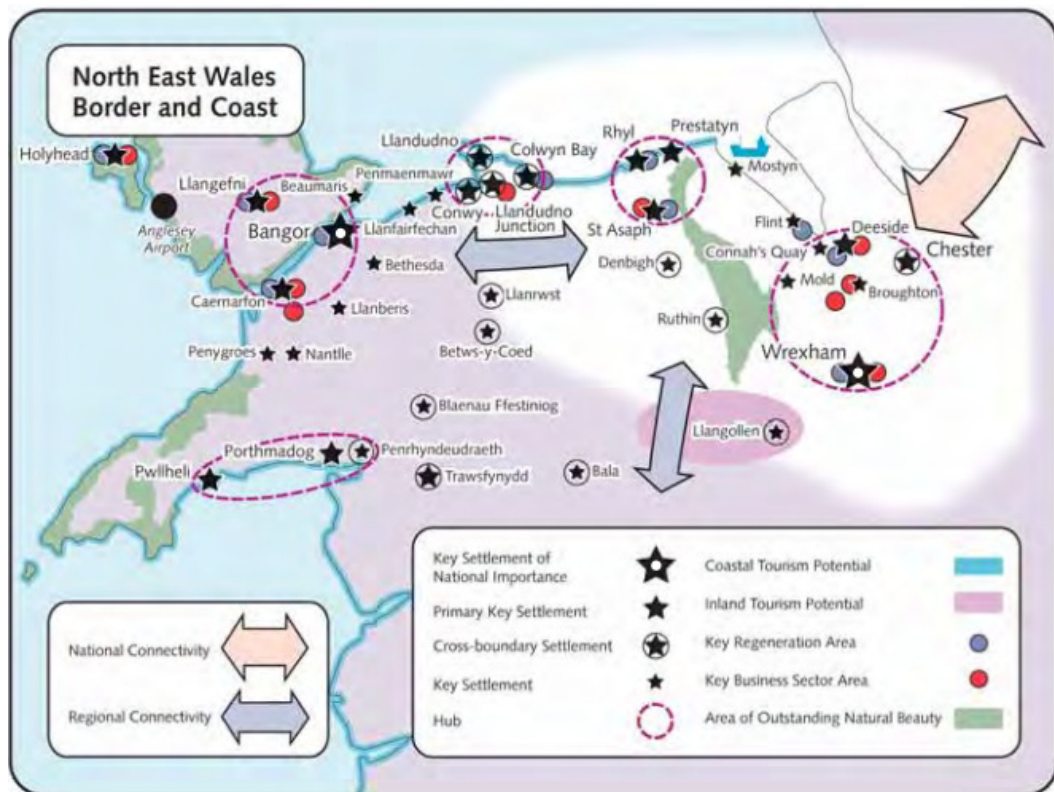
*...reducing the need to travel by co-locating jobs, housing and services, for instance, and changing behaviour in favour of 'greener' modes of travel, such as car sharing, public transport, walking and cycling.*

2.4 The Wales Spatial Plan also has a role in informing the development of Local Transport Plans. It does this by defining high-level growth and development areas and key movement corridors, such as that shown in Figure 2-1 below.

2.5 It can be seen that The Wales Spatial Plan defines Wrexham as a Key Settlement of National Importance, with emphasis later placed on:

*Strengthening key hubs as a focus for investment in future employment, housing, retail, leisure and services.*

Figure 2-1: North East Wales Border and Coast area strategy



## Planning Policy Wales (Edition 9, November 2016)

- 2.6 Planning Policy Wales sets out the land use planning policies applicable to Wales, as devolved to the Welsh Government. Its overriding aim is to translate the Welsh Government's commitment to sustainable development into the planning system.
- 2.7 In regard to transport, planning policy intends to help to achieve the Welsh Government's objectives through:
- *reducing the need to travel, especially by private car, by locating development where there is good access by walking, cycling and public transport;*
  - *locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;*
  - *improving accessibility by walking, cycling and public transport;*
  - *ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;*
  - *promoting walking and cycling;*

- *supporting the provision of high quality public transport;*
- *supporting traffic management measures;*
- *promoting sustainable transport options for freight and commerce;*
- *supporting sustainable travel options in rural areas;*
- *supporting necessary infrastructure improvements; and*
- *ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.*

2.8 Section 8.7 discusses development management and transport, setting out the following policy position for the determination of planning applications in regard to transport:

*When determining a planning application for development that has transport implications, local planning authorities should take into account:*

- *the impacts of the proposed development on travel demand;*
- *the level and nature of public transport provision;*
- *accessibility by a range of different transport modes;*
- *the opportunities to promote active travel journeys, and secure new and improved active travel routes and related facilities, in accordance with the provisions of the Active Travel (Wales) Act 2013; 124 Planning Policy Wales Edition 9 – November 2016 – Chapter 8 Transport*
- *the willingness of a developer to promote travel by walking, cycling or public transport, or to provide infrastructure or measures to manage traffic, to overcome transport objections to the proposed development (payment for such measures will not, however, justify granting planning permission to a development for which it would not otherwise be granted);*
- *the environmental impact of both transport infrastructure and the traffic generated (with a particular emphasis on minimising the causes of climate change associated with transport); and*
- *the effects on the safety and convenience of other users of the transport network.*

## Wrexham's Unitary Development Plan

2.9 Wrexham's Unitary Development Plan was adopted in February 2005. It was originally intended to expire in 2011, however consultation is ongoing for its replacement, therefore it continues to form the current statutory planning document for Wrexham County Borough Council.

2.10 The plan contains four key themes, which sit above the strategic policies:

- Sustainable development
- Countryside, Landscape and Biodiversity
- Settlement Growth
- Housing

2.11 Policy PS8 covers transport and states:

*The transport network will be developed by providing an integrated range of travel options to and from principal residential, commercial, employment and education centres by making the best use of the existing road and rail network, including, where necessary, the provision of facilities for both passenger and freight interchange and by the encouragement of public transport, cycling and walking.*

2.12 Policy T8 covers parking delivered as part of a development and states:

*Development granted planning permission will be required to provide vehicle parking spaces either on site or nearby, in accordance with the Council's current parking standards. Special regard will be paid to the following factors, as appropriate: -*

- a) the availability of public transport nearby,*
- b) proximity to public car parking,*
- c) proximity to local services and facilities,*
- d) road safety hazards and amenity considerations arising from on-street parking in the vicinity of the site.*

*Where implementation difficulties arise in making parking provision on-site or nearby, the Council will require a developer to make financial contributions for measures to assist public transport, or walking and cycling as appropriate.*

### 3. Existing Site

#### Site Location

- 3.1 The application site is located within the Rhosnesni neighbourhood of Wrexham, to the north-east of the town centre, as shown in Figure 3-1. The site is bounded to the southeast by Holt Road, to the west by Dean Road and is surrounded by residential property to the north.
- 3.2 Holt Road is an A-class single carriageway road with a width of approximately 7m and serves as a principle route into Wrexham Town Centre from the northeast. It is a 30mph road with limited direct frontage, is fully lit and has continuous footways along both sides of the carriageway.
- 3.3 The existing site currently serves as amenity space with the existing private vehicular access located on Dean Road. Pedestrian access to the site is currently available from Holt Road via a gate in the existing fence line.

Figure 3-1: Holt Road Residential Scheme Development Site



Source: Open Street Map Contributors

## Accessibility

### Walking

- 3.4 The application site is centrally-located within an existing residential area, as shown in Figure 3-1, therefore there is an excellent provision of local walking routes. The surrounding walking environment is highly permeable, particularly with the recent development to the south of Holt Road introducing new traffic-free links and open spaces.
- 3.5 There is a toucan crossing immediately adjacent to the site on Holt Road and a series of pedestrian crossings between the site and the town centre. All surrounding streets are lit and are provided with footways, providing a safe means of access to the town centre for pedestrians.
- 3.6 Table 3-1 includes an example of some of the numerous local destinations within an acceptable walking distance of the proposed development. Distances and walking times have been measured from the main pedestrian entrance for the new development on Holt Road. Walking distances of up to 2km are generally acceptable under CIHT's *Providing for Journeys on Foot* guidance.

**Table 3-1: Local destinations**

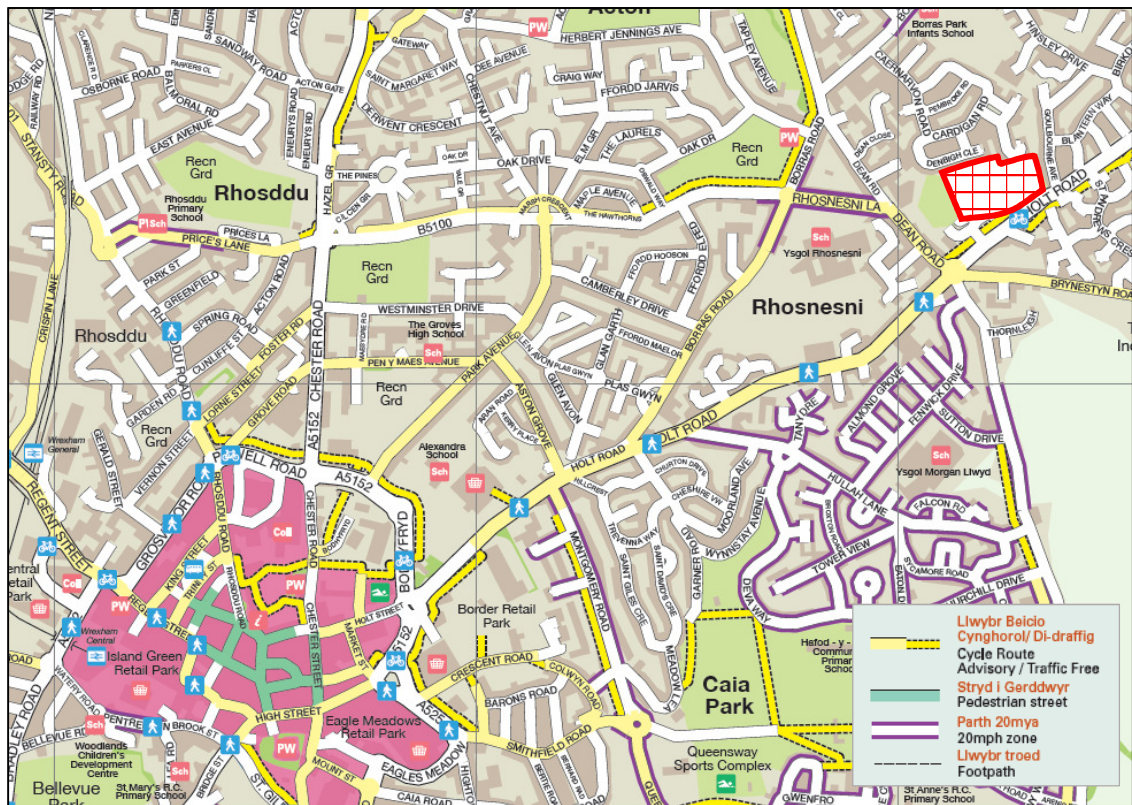
| Location                                 | Distance | Walking time |
|------------------------------------------|----------|--------------|
| Post Office / McColl's Convenience Store | 300m     | 4 minutes    |
| Gate Hangs High Public House             | 500m     | 7 minutes    |
| Rhosnesni High School                    | 600m     | 8 minutes    |
| Borras Park Community Primary School     | 900m     | 12 minutes   |
| Wrexham Town Centre                      | 2.2km    | 29 minutes   |
| Wrexham Central Train Station            | 2.7km    | 35 minutes   |

### Cycling

- 3.7 Wrexham has a good network of cycle routes across the town, which consist of traffic-free paths, low-traffic streets and cycle lanes. Figure 3-2 shows an extract of the Wrexham cycle map, on which Holt Road is highlighted as an advisory route for cyclists, which provides direct access to the town centre.

- 3.8 A shared use cycleway / footway exists alongside Holt Road directly adjacent to the development site, linking one side to the other via the toucan crossing. The cycleway ends at the roundabout with Dean Road / Cefn Road / Bryn Estyn Road; the cycle routes thereafter are clearly indicated by signposts

Figure 3-2: Wrexham cycle map



Source: Sustrans Cymru

## Bus

- 3.9 The nearest bus stop to the application site is located on Holt Road, on the site frontage. The number 35 bus service, operated by Arriva, is the principal service and operates every 30 minutes during the peak hours on both weekdays and Saturdays, and hourly during the off-peak period. This provides access to Wrexham town centre, which has a wide range of services and amenities, including Wrexham Central Rail Station.
- 3.10 The C56 service, operated by Stagecoach, is the alternative service offered at this location, which operates every 120 minutes and provides access to Wrexham and Chester.

Table 3-2: Bus service summary

| #   | Route                | Daytime frequency (minutes) |                            |
|-----|----------------------|-----------------------------|----------------------------|
|     |                      | Week.                       | Sat.                       |
| 35  | Wrexham (Arriva)     | 30 (peak)<br>60 (off-peak)  | 30 (peak)<br>60 (off-peak) |
| C56 | Wrexham (Stagecoach) | 120                         | 120                        |
| C56 | Chester (Stagecoach) | 120                         | 120                        |

Sources: Arrivabus.co.uk, stagecoachbus.com

## Rail

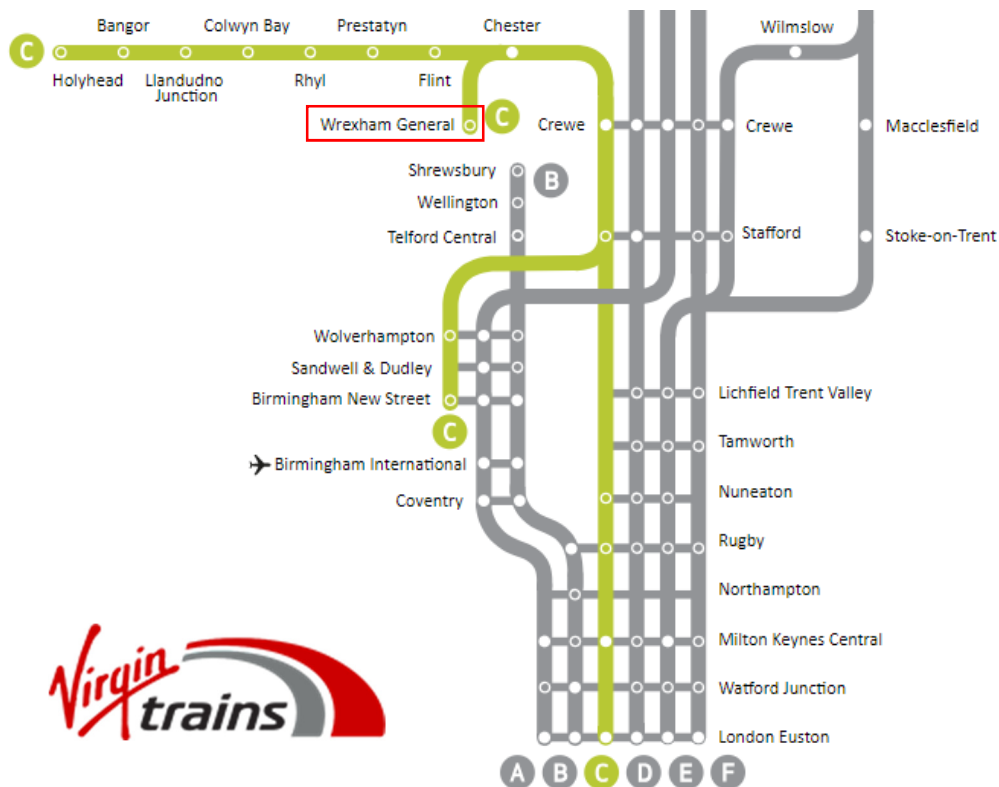
- 3.11 Wrexham Central station is located in the centre of Wrexham and is the closest to the development site; approximately 2.7 kilometres from the site on foot. However, the number 35 bus service provides a frequent link to the high street, which is a 160-metre walk from the rail station and the bus station is within a 5-minute walk, providing further links.
- 3.12 Wrexham Central Station is operated by Arriva Trains Wales and served by frequent services between Wrexham–Bidston (for connections to Liverpool). Services run at hourly intervals during weekdays, with an enhanced service at peak hours.
- 3.13 Wrexham General Station is located approximately 600 metres to the northwest of the bus station. This station is also operated by Arriva Trains Wales, but also has the additional benefit of being served by long-distance services operated by Virgin Trains West Coast on a limited basis. The network maps of both operators are shown below as Figure 3-3 and Figure 3-4 respectively.
- 3.14 Arriva Trains Wales operates two routes through Wrexham: Shrewsbury–Chester and Wrexham–Bidston (for connections to Liverpool). Direct services are also available to Holyhead, Birmingham International and Cardiff. Services run at hourly intervals during weekdays, with an enhanced service at peak hours.
- 3.15 Virgin Trains currently operate one direct service between Wrexham and London Euston every weekday morning with a return service in the evening.
- 3.16 Wrexham is also set to benefit significantly from the recently-announced Wales and Borders franchise, which will commence in October 2018. This will include investment in new services, trains and stations, including the acceleration of a North Wales Metro.

Figure 3-3: Arriva Trains Wales network map extract



Source: Arriva Trains Wales

Figure 3-4: Virgin Trains West Coast network map extract



Source: Virgin Trains

## Local Highway Network

### *Holt Road (A534)*

- 3.17 The proposed development site will be directly accessed via Holt Road; a wide single-carriageway road which provides access to Wrexham town centre to the south west and links via a roundabout to the A5156 and Holt New Road (A534) in the north east.
- 3.18 Holt Road is fully lit and has wide footways on both sides of the carriageway. It is subject to a speed limit of 30mph and is comprised of largely residential frontage with direct access to properties along its length. It also functions as a distributor road, providing access to residential access roads. Much of Holt Road benefits from existing waiting restrictions in the form of double yellow lines in order to minimise disruption to the free-flowing traffic.
- 3.19 The site benefits from its proximity to an existing toucan crossing immediately adjacent to the proposed access point on Holt Road. There are also several uncontrolled crossings with refuge islands along the length of the road which aid pedestrian connectivity and act as traffic calming features.
- 3.20 Much of Holt Road features an advisory on-street cycle lane in the southbound direction, with segregation provided at key locations, such as directly outside of the proposed development site and the roundabout with the A5152, closer to the centre of town.

Figure 3-5: Holt Road



### *A5156 / A534*

- 3.21 The A5156 is a dual-carriageway road which provides access to the northwest and North Wales, via the A483 at Junction 6. The A5156 is accessed via Holt Road at the roundabout with the A534 to the north-east of the development site.
- 3.22 The A534 is a continuation of Holt Road to the northeast which becomes a dual-carriageway following the roundabout with the A5156, facilitating eastbound vehicle movements to Wrexham Industrial Estate and Crewe.
- 3.23 The A5156 and A534 have recently been upgraded with a new dual carriageway link being provided to serve the Wrexham Industrial Estate. This has included the provision of a new, larger, roundabout at the junction with Holt Road.

### *Dean Road (B5100)*

- 3.24 Dean Road is a single-carriageway road with residential frontage along its length. As well as providing an alternative route for cars to access the A483 interchange in the North, the street links residential areas and provides access to local schools. The street is classified as an advisory route for cyclists, as shown in Figure 3-2.
- 3.25 Dean road is a fully-lit urban route, with footways along both sides of the carriageway. Kerb-side parking is uncommon, as most properties have off-street parking and the traffic is free-flowing. There are several uncontrolled crossings with refuge islands along the length of the road which aid pedestrians and act as traffic calming features.
- 3.26 As Dean Road enters the mini-roundabout with Borrass Road and Jeffreys Road, waiting restrictions are present in the form of double yellow lines, to discourage on-street parking.

### *Cefn Road*

- 3.27 Cefn Road begins at the roundabout with Holt Road and Dean Road, immediately south of the development site. Cefn Road is a wide, well-lit single-carriageway road with residential frontage along its length.
- 3.28 Much of the road is subject to a 30mph speed limit, which transitions to a 20mph limit within the vicinity of the nearby Ysgol Morgan Llwyd school. Central hatching and traffic calming measures are also in place within the vicinity of the school, in form of speed cushions.

### *Bryn Estyn Road*

- 3.29 Bryn Estyn Road is an unclassified minor road, with limited direct frontage along much of its length. To the west, the road is subject to a 30mph speed limit, is well-lit and has footways present on both sides of the carriageway. Upon entry to the residential area, before the transition to the 30mph speed limit, surface treatments are in place.
- 3.30 To the east, as the road leaves the residential area, the carriageway becomes single track road and is subject to the national speed limit with the absence of street lighting. In this location, the road is bounded by the tall hedgerows on both sides.
- 3.31 Bryn Estyn Road provides access to Wrexham Rugby via a priority junction at approximately half way along its length, thereafter the road terminates and grants access only to cycles via a link through to Sandy Lane.

### Road Safety

- 3.32 Recorded collision locations from the 'Crash Map' website have been used to assess whether there are any clusters of concern on the local highway network surrounding the development site. National Planning Practice Guidance states that collision records should be interrogated for the most-recent available three-year period – in this case 2015–17, inclusively.

Figure 3-6: Recorded collision locations and severity (2015-17)

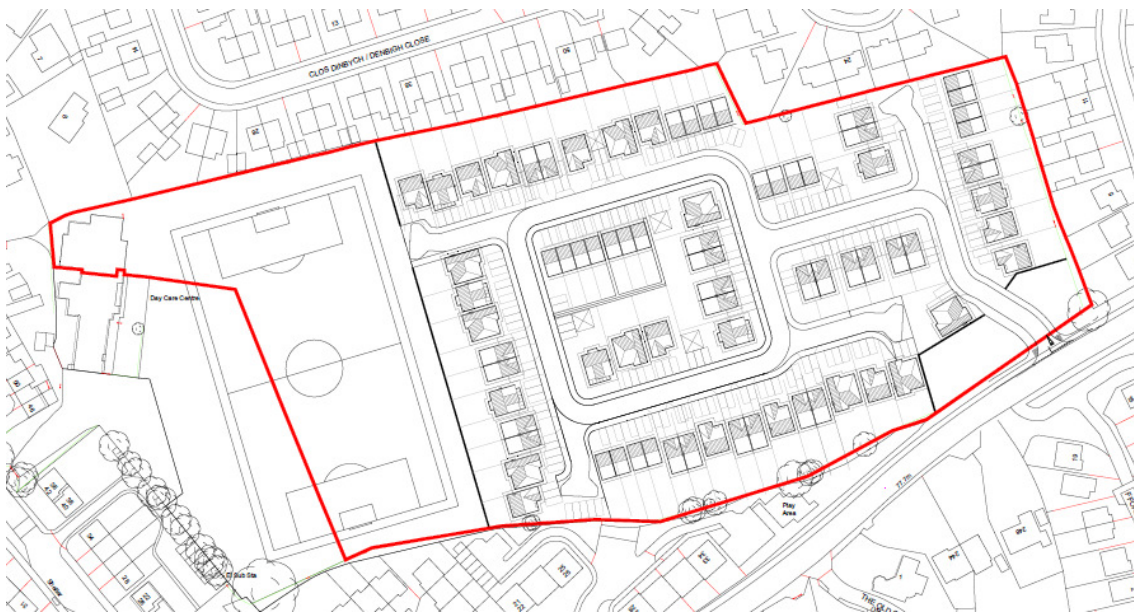


- 3.33 It can be seen that there have been minimal collisions on the local highway network during this period, commensurate with the suburban environment. The two recorded incidents have been classified as 'slight' in severity. There were no 'serious' collisions within the immediate vicinity of the proposed development site.
- 3.34 One collision occurred on Dean Road and the other collision took place on the circulatory carriageway of the roundabout. It should be noted that neither collision occurred on Holt Road, adjacent to the development site.
- 3.35 Reviewing the collision summary data and locations it is considered that there is no obvious pattern that would suggest an existing problem that would be exacerbated by the proposed development.

## 4. Proposed Development

- 4.1 The proposed development seeks to obtain outline permission for up to 77 residential dwellings, with access to be gained via a new vehicular junction with Holt Road. Figure 4-1 introduces the site layout / masterplan, showing the proposed accesses to the residential site off Holt Road.

Figure 4-1: Proposed site layout



Source: Day Architectural Ltd

- 4.2 It should be noted that whilst the proposed development makes provision for the retention of a sports pitch to the west of the residential development, no amendments to the current operation of the sports or council-operated facilities, including its car parking or access, are proposed. No further assessment of the land accessed off Dean Road has therefore been deemed necessary.

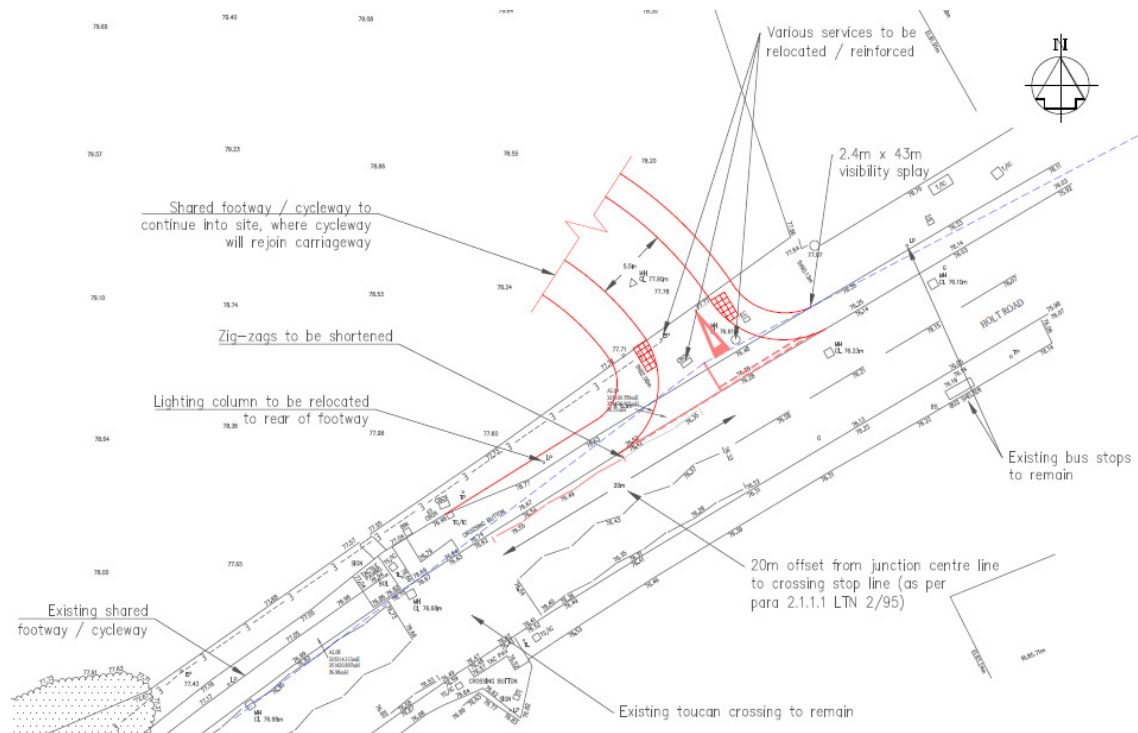
### Access and Parking

- 4.3 A new vehicular access will be created on Holt Road to serve the development of up-to 77 dwellings. The proposed access will be in the form of a priority T-junction with a 5.5m carriageway width for the minor arm in line with Manual for Streets (MfS) guidance. On the western side of the minor arm, the 3m-wide shared footway / cycleway will be extended into the site. On the eastern side of the minor arm, a 2m-wide footway will enter the site. Visibility splays of 2.4m x 43m are achievable in both

directions from the proposed site access, in line with MfS requirements for 30mph roads.

- 4.4 Access to the site is somewhat constrained by the existing toucan crossing. The proposed access has been positioned to minimise the impact on the crossing – following feedback obtained from WCBC Highways during pre-application discussions, the access was moved further east to ensure a suitable distance between the minor arm and the stop line. Placing the proposed access to the east of the toucan crossing allows the development to tie in to the existing cycle path, providing a continuous link to the town centre, without interrupting the existing cycleway.
- 4.5 Other options were investigated for the location of the proposed access; however, due to the existing residential areas bounding the site, there is limited opportunity to link through into the development site.
- 4.6 In accordance with Manual for Streets (MfS) design standards, the sight stopping distance for a 30mph road requires a visibility splay of 2.4m x 43m in both directions, which has been achieved without obstruction above 600mm (included in Appendix A). The 2.4m set back or 'X' distance is deemed appropriate for the characteristics of Holt Road and is line with Manual for Streets guidance.
- 4.7 Note that the proposed junction shown in Figure 4-2 has been updated based on pre-application consultation feedback, including relocation to ensure 20m from the centreline to the toucan crossing stop line, consideration of nearby bus stops, and relocation of tactile paving further into the site.

Figure 4-2: Proposed Holt Road access



- 4.8 The existing vehicular access on Dean Road will be retained to serve the retained playing field to the west of the proposed residential development, however will not link through to the proposed residential development.
- 4.9 Car parking standards for the development site are contained within Wrexham Borough Council Local Planning Guidance entitled Local Planning Guidance Note No. 16. The standards are based on maximum provision and therefore provide flexibility in the level of provision based on the accessibility of the site location.
- 4.10 The standards require up to 1.5 spaces for one-bedroom dwellings, up to 2 spaces for two-bedroom dwellings, and; up to 3 spaces for three and four-bedroom dwellings. The use of fractions of a space indicate the use of assigned and unassigned spaces, allowing provision for visitor parking to those sites with a high number of single bedroom dwellings. The standards also require two cycle parking spaces per dwelling, irrespective of the number of bedrooms.
- 4.11 As an outline application, the final mix of housing has not yet been determined. The proposed layout does, however, make provision for two off-street parking spaces per dwelling, therefore demonstrating that it is possible to achieve the parking standards set out above.

## Servicing

- 4.12 It is proposed that the internal road network will be put forward for adoption and therefore constructed to a standard that will allow access by refuse vehicles and fire appliances. This will allow kerb-side collections of refuse and direct frontage access by emergency vehicles.
- 4.13 Whilst, due to the outline nature of the application, the internal layout is shown indicatively, the layout allows larger vehicles to enter, circulate and exit in a forward gear. Short cul-de-sacs are provided off the main access roads, which are provided with turning heads.

## 5. Traffic Impact

### Trip Generation

- 5.1 Based on trip rates for similar developments in the TRICS database, the peak hour trip generation has been calculated and summarised in Table 5-1. Trip rates have been obtained for privately owned dwellings.
- 5.2 The following criteria were selected when filtering comparable sites in TRICS:
- Great Britain (excluding Greater London and Ireland)
  - 'Suburban' or 'Edge of Town' location
  - 7-363 dwellings
  - No Travel Plan

**Table 5-1: Vehicle trip rates and generation**

|                                | AM Peak (08:00-09:00) |       |       | PM Peak (17:00-18:00) |       |       |
|--------------------------------|-----------------------|-------|-------|-----------------------|-------|-------|
|                                | Arr.                  | Dep.  | Total | Arr.                  | Dep.  | Total |
| <b>Trip rate</b>               | 0.167                 | 0.435 | 0.602 | 0.402                 | 0.219 | 0.621 |
| <b>Vehicle trip generation</b> | 13                    | 33    | 43    | 31                    | 17    | 48    |

- 5.3 Table 5-1 demonstrates that the proposed development would generate a maximum of 43 two-way vehicle trips during the AM peak period and 48 two-way vehicle trips during the PM peak period, or less than one vehicle movement every minute. The full TRICS output report can be found in Appendix C.

## Trip Distribution

- 5.4 Trips have been distributed based on Nomis 2011 Census data, in order to obtain Journey to Work (JTW) travel data for Wrexham. It is considered that the 2011 Census JTW data for trips in and out of Wrexham is an acceptable method for distributing the proposed development trips around the highway network.
- 5.5 Wrexham has been selected as the location of residence, whilst the places of work outputs chosen at the Major Super Output Area (MSOA) level for Wrexham, and Local Authority level for further afield. From this output, the number of trips and percentage have been calculated from their destination of work from Wrexham. The complete Origin & Destination vehicle trips to can be seen in Appendix D.
- 5.6 The journey to work census data has been used to proportion the trips onto the highway network based on the percentage of trips and the arterial route that they take. The trips have then been assigned to the network in accordance with the most likely route choice that the vehicles will follow during a weekday journey in the AM peak periods using Google Map's route planner tool.
- 5.7 It has been assumed that vehicles travelling to work during the morning peak (outbound trips) will take the reverse journey for their inbound, evening journey home. The inbound and outbound route choices have been summarised in Appendix D.

## Junction Assessment

### Traffic Surveys

- 5.8 Traffic surveys were carried out at the following two junctions on the surrounding local highway network, on the week commencing 23th April 2018. These comprised manual classified counts. The results of the surveys have been provided in Appendix D:
- Holt Rd / Birkdale Rd / St Mellion Cres roundabout
  - Holt Rd / Bryn Estyn Rd / Cefn Rd (Greyhound) roundabout
- 5.9 The two surveyed junctions were identified as those most likely to experience the greatest impact from the proposed development in accordance with the trip distribution exercise.

### Future year growth

- 5.10 Future year growth has been calculated using Temprow, which considers the planned local plan development for Wrexham and can forecast the increase in traffic associated with growth in residential and employment sites.
- 5.11 As requested by Wrexham CBC Highways, future year growth has been assessed up to 15-years post opening (2035). It should be noted that the emerging local plan extends to 2028 therefore there is significant uncertainty with presenting predicted impacts for this far in the future. Growth factors are based on current committed and allocated development, as well as current and predicted trends in travel behaviour, all of which are subject to change within this period.

Table 5-2: Growth factors

| Year        | AM Peak | PM Peak |
|-------------|---------|---------|
| 2018 → 2020 | 1.0335  | 1.0316  |
| 2018 → 2035 | 1.2062  | 1.1991  |

Source: Temprow v7.2 (Wrexham 011; urban; minor roads)

## Modelling scenarios

5.12 The following scenarios have been presented for both the AM (08:00-09:00) and PM (17:00-18:00) peak periods:

- 2018 Baseline
- 2020 Baseline
- 2020 Baseline + Development
- 2035 Baseline
- 2035 Baseline + Development

## Results

### *Proposed Development Access*

5.13 Table 5-3 shows a summary of the PICADY assessment carried out at the proposed site access with Holt Road, as shown in the scheme drawing shown in Figure 4-2.

5.14 It can be seen that the proposed junction operates well within capacity in both peak periods with minimal queuing and RFCs of less than 0.85. The proposed development access junction has only been assessed during the 2020 Baseline + Development and 2035 Baseline + Development Scenarios, by virtue of it serving the proposed development.

**Table 5-3: Proposed development access junction assessment summary**

| Arm                         | AM Peak     |      | PM Peak     |      |
|-----------------------------|-------------|------|-------------|------|
|                             | Queue (PCU) | RFC  | Queue (PCU) | RFC  |
| 2020 Baseline + Development |             |      |             |      |
| Development Access          | <1          | 0.10 | <1          | 0.06 |
| Holt Road (E)               | <1          | 0.02 | <1          | 0.08 |
| 2035 Baseline + Development |             |      |             |      |
| Development Access          | <1          | 0.11 | <1          | 0.07 |
| Holt Road (E)               | <1          | 0.02 | <1          | 0.10 |

*Holt Rd / Birkdale Rd / St Mellion Cres roundabout*

- 5.15 Table 5-4 shows a summary of the ARCADY assessment carried out at the existing roundabout junction between Holt Road North (A534) / Birkdale Road / Holt Road South (A534) / St Mellion Crescent.
- 5.16 It can be seen that the proposed junction operates well within capacity in both peak periods during the 2018 Baseline scenario, with minimal queuing and RFCs under 0.85.
- 5.17 The 2020 Baseline scenario is in line with growth expected over the 2-year period, however, the junction continues to operate well within capacity in all AM and PM peak scenarios with a negligible increase in RFCs and no increase to queuing.
- 5.18 The introduction of development trips to the 2020 Baseline scenario again shows a negligible increase to RFCs, with no increase to queueing. This indicates the insignificant impact that the development trips will have to the surrounding highway network.
- 5.19 Similarly, the 2035 Baseline scenario and the 2035 Baseline + Development show that the junction is operating well within capacity during both peak periods, with RFC figures well below the 0.85 RFC threshold. It can therefore be concluded that the development generated impact at the junction is negligible and no further assessment is required.

**Table 5-4: Holt Rd / Birkdale Rd / St Mellion Cres roundabout summary**

| Arm                 | AM Peak     |      | PM Peak     |      |
|---------------------|-------------|------|-------------|------|
|                     | Queue (PCU) | RFC  | Queue (PCU) | RFC  |
| 2018 Baseline       |             |      |             |      |
| Holt Road (NE)      | <1          | 0.34 | 1           | 0.57 |
| St Mellion Crescent | <1          | 0.15 | <1          | 0.08 |
| Holt Road (SW)      | <1          | 0.47 | <1          | 0.41 |
| Birkdale Road       | <1          | 0.22 | <1          | 0.10 |
| 2020 Baseline       |             |      |             |      |
| Holt Road (NE)      | <1          | 0.36 | 1           | 0.59 |
| St Mellion Crescent | <1          | 0.15 | <1          | 0.08 |
| Holt Road (SW)      | <1          | 0.48 | <1          | 0.43 |
| Birkdale Road       | <1          | 0.23 | <1          | 0.11 |

| Arm                         | AM Peak     |      | PM Peak     |      |
|-----------------------------|-------------|------|-------------|------|
|                             | Queue (PCU) | RFC  | Queue (PCU) | RFC  |
| 2020 Baseline + Development |             |      |             |      |
| Holt Road (NE)              | <1          | 0.36 | 1           | 0.60 |
| St Mellion Crescent         | <1          | 0.16 | <1          | 0.08 |
| Holt Road (SW)              | 1           | 0.50 | <1          | 0.43 |
| Birkdale Road               | <1          | 0.24 | <1          | 0.11 |
| 2035 Baseline               |             |      |             |      |
| Holt Road (NE)              | <1          | 0.42 | 2           | 0.69 |
| St Mellion Crescent         | <1          | 0.19 | <1          | 0.11 |
| Holt Road (SW)              | 1           | 0.57 | 1           | 0.50 |
| Birkdale Road               | <1          | 0.30 | <1          | 0.13 |
| 2035 Baseline + Development |             |      |             |      |
| Holt Road (NE)              | <1          | 0.42 | 2           | 0.70 |
| St Mellion Crescent         | <1          | 0.19 | <1          | 0.11 |
| Holt Road (SW)              | 1           | 0.58 | 1           | 0.51 |
| Birkdale Road               | <1          | 0.31 | <1          | 0.13 |

### *Holt Rd / Bryn Estyn Rd / Cefn Rd (Greyhound) roundabout*

- 5.20 Table 5-5 shows a summary of the ARCADY assessment carried out at the existing Greyhound Roundabout.
- 5.21 The shading for the future year scenarios highlights the change in RFC as a result of the proposed development compared with the respective baseline scenario, with green indicating a neutral or positive impact and orange indicating a negative impact.
- 5.22 It can be seen that the proposed junction operates within capacity in the AM peak period during the 2018 Baseline scenario, with minimal queuing and RFCs of less than 0.85. This junction is however, approaching the 0.85 threshold, which indicates that the junction is nearing capacity. In the PM peak period, it can be seen that the junction is operating over capacity, experiencing a much higher RFC on the Holt Road (N) junction arm than the AM peak.

- 5.23 The 2020 Baseline scenario is in line with growth expected over the 2-year period, showing an RFC of 0.86 on the Holt Road (N) arm during the AM peak, indicating that it is operating marginally over capacity in this scenario. The PM peak period shows the Holt Road (N) arm to be operating over capacity prior to the introduction of trips associated with the development; producing much higher RFCs than the AM peak.
- 5.24 The introduction of development trips to the 2020 Baseline scenario shows a marginal increase to the queue and RFC figures on the Holt Road (N) arm for both the AM and PM peak periods. This is due to Holt Road acting as a primary route in to the town centre.
- 5.25 Similarly, the 2035 Baseline scenario shows that the Holt Road (N) junction arm is already operating significantly over capacity during both peak periods. It should be noted the small marginal increase resulting from the proposed development, therefore it should not fall solely on the proposed development to develop and fund any potential mitigation.

Table 5-5: Holt Rd / Bryn Estyn Rd / Cefn Rd (Greyhound) roundabout summary

| Arm                         | AM Peak     |      | PM Peak     |      |
|-----------------------------|-------------|------|-------------|------|
|                             | Queue (PCU) | RFC  | Queue (PCU) | RFC  |
| 2018 Baseline               |             |      |             |      |
| Holt Rd (NE)                | 4           | 0.81 | 12          | 0.95 |
| Bryn Estyn Rd               | <1          | 0.05 | <1          | 0.13 |
| Cefn Rd                     | 2           | 0.71 | 2           | 0.65 |
| Holt Rd (SW)                | 1           | 0.57 | 2           | 0.71 |
| Dean Rd                     | 1           | 0.57 | <1          | 0.39 |
| 2020 Baseline               |             |      |             |      |
| Holt Rd (NE)                | 5           | 0.84 | 18          | 0.99 |
| Bryn Estyn Rd               | <1          | 0.06 | <1          | 0.14 |
| Cefn Rd                     | 3           | 0.74 | 2           | 0.68 |
| Holt Rd (SW)                | 1           | 0.59 | 3           | 0.74 |
| Dean Rd                     | 1           | 0.60 | <1          | 0.41 |
| 2020 Baseline + Development |             |      |             |      |
| Holt Rd (NE)                | 6           | 0.86 | 20          | 0.99 |

| Arm                         | AM Peak     |      | PM Peak     |      |
|-----------------------------|-------------|------|-------------|------|
|                             | Queue (PCU) | RFC  | Queue (PCU) | RFC  |
| Bryn Estyn Rd               | <1          | 0.06 | <1          | 0.14 |
| Cefn Rd                     | 3           | 0.75 | 2           | 0.68 |
| Holt Rd (SW)                | 1           | 0.59 | 3           | 0.76 |
| Dean Rd                     | 1           | 0.60 | <1          | 0.41 |
| 2035 Baseline               |             |      |             |      |
| Holt Rd (NE)                | 30          | 1.04 | 95          | 1.19 |
| Bryn Estyn Rd               | <1          | 0.08 | <1          | 0.17 |
| Cefn Rd                     | 8           | 0.91 | 4           | 0.80 |
| Holt Rd (SW)                | 3           | 0.74 | 8           | 0.91 |
| Dean Rd                     | 3           | 0.75 | 1           | 0.51 |
| 2035 Baseline + Development |             |      |             |      |
| Holt Rd (NE)                | 35          | 1.05 | 98          | 1.19 |
| Bryn Estyn Rd               | <1          | 0.08 | <1          | 0.17 |
| Cefn Rd                     | 9           | 0.92 | 4           | 0.80 |
| Holt Rd (SW)                | 3           | 0.74 | 9           | 0.92 |
| Dean Rd                     | 3           | 0.75 | 1           | 0.52 |

## Construction Traffic Management Plan

- 5.26 It is considered that the provision of a Construction Traffic Management Plan would be advantageous in limiting the impact of the development on the local highway network during construction phases.
- 5.27 Given the outline nature of the planning application at this stage it is considered sensible to condition any planning permission on the provision of a CTMP once further details of the proposed development are determined at reserved matters stage.

## 6. Framework Travel Plan

- 6.1 A Framework Travel Plan has been produced alongside this Transport Assessment, to act as an umbrella document that encourages joined up thinking when seeking to reduce the transport impact of the proposed development.
- 6.2 This contains an action plan with roles and responsibilities, setting out steps that will be taken to reduce private car use and encourage the take-up of active and public transport modes.
- 6.3 If the Framework Travel Plan is successful, it will achieve a significant reduction in the number of car-based trips to what has been robustly assessed in the sections above. This will encourage active modes to help improve people's wellbeing and quality of life, and to retain additional capacity on the local highway network for others.

## 7. Conclusion

- 7.1 Integrated Transport Planning Ltd has been commissioned by Wrexham Glyndŵr University to produce a Transport Assessment to support a planning application for up-to 77 new residential dwellings and the construction of a new vehicular access off Holt Road.
- 7.2 The site is located within an existing residential area, to the East of Wrexham and the A483. The site is well connected to the remainder of Wrexham on foot and cycle via Holt Road, which is a primary route into the town centre, as well as via frequent bus services.
- 7.3 The proposed development includes the provision of a new vehicular access off Holt Road – integrating with the existing 3m wide shared use footway / cycleway for access into the town centre.
- 7.4 Assessment of key local junctions has confirmed some existing capacity issues during the PM peak, however the proposed development generates a marginal increase in the level of queuing. The level of impact is not considered to be severe and does not consider commuters shifting to alternative modes or routes, which would not happen were there to be no congestion.
- 7.5 A Framework Travel Plan has been prepared, which is intended to be converted into a full Travel Plan at reserved matters stage. The Framework Travel Plan identifies tangible steps that can be taken to reduce the impact on the local highway network and therefore have a benefit for both proposed and existing local residents.
- 7.6 In conclusion, it is considered that, the proposed development has a negligible impact on the local highway network and the site offers a genuine opportunity to deliver sustainable development that is well served by walking and cycling routes, in particular. It is therefore considered to be in line with planning policy for Wales and Wrexham.



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