ATKINS

Member of the SNC-Lavalin Group

Land West of Watling Street, Park Street, Hertfordshire

Transport Assessment

M Scott Properties Ltd, Ms T Sutton, Ms T Good, Mr W Hughes and Mr J Hughes

14 January 2022

Notice

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This document has 69 pages including the cover.

Document history

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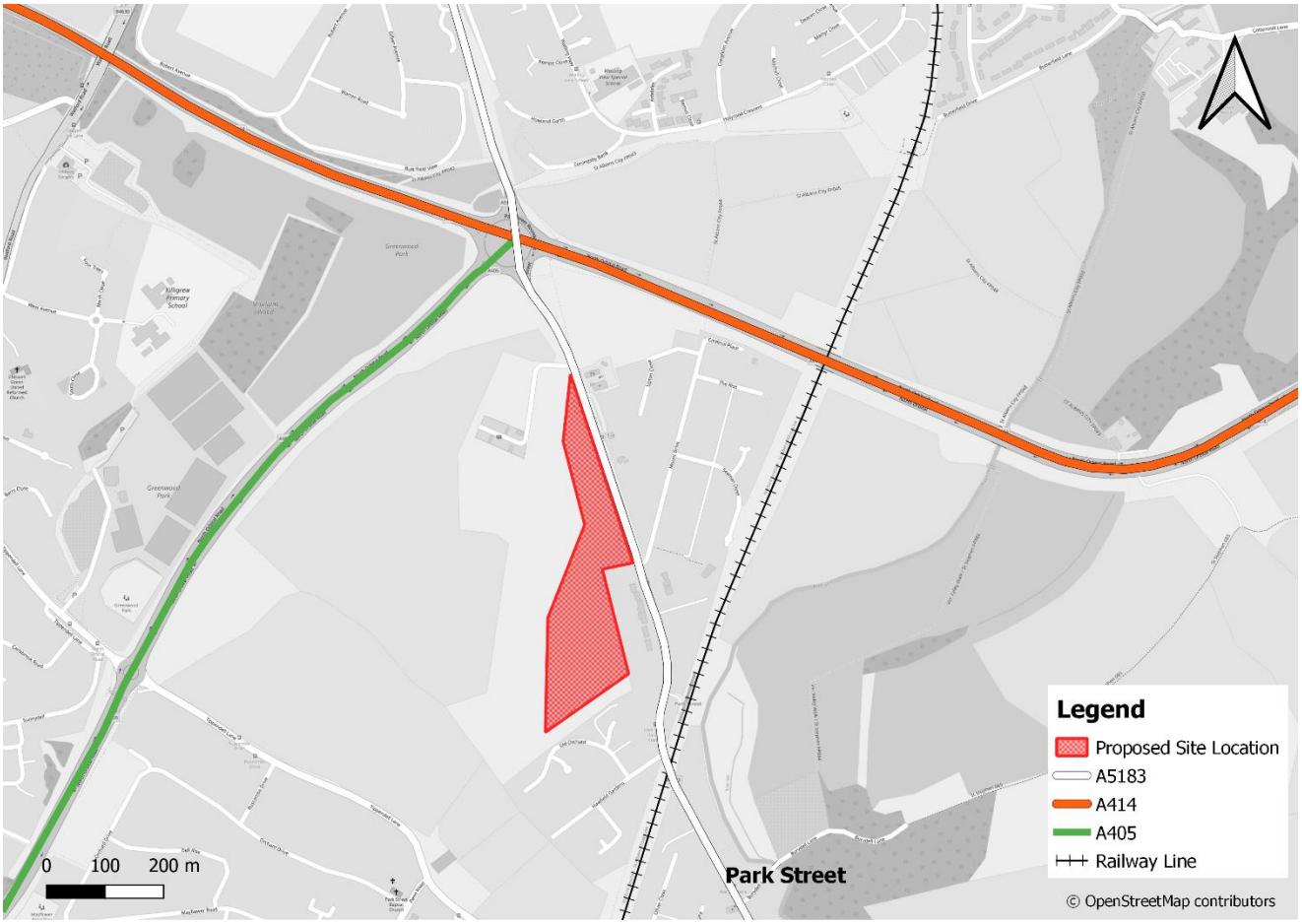
1. Introduction

1.1. Atkins has been commissioned by M Scott Properties Ltd., Ms T Sutton, Ms T Good, Mr W Hughes and Mr J Hughes to prepare a Transport Assessment (TA) in support of an outline planning application for a residential development of up to 95 dwellings on Land West of Watling Street, Park Street, St Albans. This includes associated infrastructure and a site access junction to/from Watling Street (A5183).

Background

1.2. The proposed development site is located north of Park Street, approximately 4km south of St Albans and 4km north of Radlett. The A5183 runs north/south along the eastern boundary of the site and is the main distributor road connecting Park Street to St Albans, as well as the A414 via the Park Street Roundabout. The site currently consists of agricultural land and is bounded to the west by hedgerows and arable farmland, and to the east by Watling Street. There are also existing properties to the north and to the south. The Local Highway Authority (LHA) in the area is Hertfordshire County Council (HCC). The proposed site is shown in Figure 1-1.

Figure 1-1 - Proposed Site Location



Scoping

1.3. Based on a residential development of 95 units, a TA is required in accordance with the National Planning Policy Guidance (NPPG) on '*Travel Plans, Transport Assessment and Statements in decision-taking'* in the chapter titled *'Transport Evidence Bases in Plan Making'*[1].

[1] Department for Transport (2014) *Travel Plans, Transport Assessment and Statements in decision-taking' C*hapter Titled *'Transport Evidence Bases in Plan Making*

1.4. Scoping discussions were held on site between Atkins and HCC on 3rd November 2021, this transport assessment is therefore based on the agreed scope. The pre-application meeting notes are provided in Appendix A.

Report Structure

1.5. The remainder of this report is structured as follows:

- Section 2 outlines the national and local planning policy relevant to the proposed development;
- Section 3 details the baseline conditions of the site, reviewing the existing pedestrian, cycle and public transport provision, as well as the local highway network;
- Section 4 outlines the development proposals, including the proposed accommodation schedule and description of the proposed site access arrangements and car and cycle parking provision;
- Section 5 presents the predicted multi-modal trip generation of the proposed development;
- Section 6 provides an assessment of the impact of the proposed development on the transport networks; and
- Section 7 summarises the findings of the TA and presents the conclusions of the assessments undertaken.

2. Policy Review

2.1. This Section of the TA summarises the National and Local Policy considered relevant to the transport aspects of the proposed development in Park Street.

National Planning Policy

2.2. The National Planning Policies relevant to the proposed residential development in Park Street has been considered and summarised below.

National Planning Policy Framework (July 2021)

2.3. The National Planning Policy Framework (NPPF) outlines the Government's planning policies for England, and the subsequent application processes. Within the policy document a framework is provided to enable local authorities to produce local and neighbourhood plans to reflect the priorities and needs of local communities. The framework aims to simplify the planning system in order to become more widely accessible. The framework emphasises that successful future developments should consider the importance of sustainability and environmental protection during the planning process and thereafter.

- The NPPF has identified three overarching objectives which seek to promote sustainable development, these are as follows:
- An environmental objective – 'to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy';
- A social objective – 'to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being'; and
- An economic objective – 'to help build strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure'.

2.4. The proposed development at Park Street complies with the National Planning Policy Framework as the proposal aims to encourage and facilitate the use of sustainable transport modes where possible, to reduce reliance on the private car. The proposed development minimises the need to travel by car as it is located within a walkable distance from local amenities and public transport infrastructure, see paragraph 3.3 - 3.15.

Cycle Infrastructure Design – Local Transport Note 1/20 (LTN1/20) (2020)

2.5. This document offers guidance on the design of cycle infrastructure and how this may be integrated with highway improvements and new developments. The following key points of information within the document which are relevant to the development are:

- New housing development provides a major opportunity to create new and improved cycle infrastructure;
- Cycling facilities should be regarded as an essential component of the site access and any off-site highway improvements that may be necessary. Developments that do not adequately make provision for cycling in their transport proposals should not be approved. This may include some off-site improvements along existing highways that serve the development; and
- New and improved highways will need to strike an appropriate balance to best meet the various design objectives that have been set, including the needs of people using cycles.
- This TA aims to consider the guidance provided by the LTN1/20 during the development of proposals and mitigations measures2.

[2] Depart for Transport (July 2020) *Local Transport Note 1/20 – Cycle Infrastructure Design.*

- Other Selected National Policies
- Other National Policy which adheres to the Park Street Development are as follows:
- Climate Change Act 2008 – sets the target to reduce the UK's CO2 emissions 80% of 1990 levels by 2050. This has since been updated in 2019 when the UK outlined targets to become carbon neutral by 2050;
- Future of mobility: Urban Strategy (March 2019) and Bus Services (Act 2017) – this strategy outlines government's approach to maximising the benefits from transport innovation in cities and towns. Thereby increasing the implementation and subsequent use of sustainable modes of transport. For instance, E-scooters could be a fast and sustainable mode of travel easing the burden on the network and reducing carbon emissions.; and
- The Road to Zero 2018 – this policy outlines the next steps towards a sustainable road transport network by implementing the following legislation:
- Ending the sale of new conventional petrol and diesel cars and vans by 2035 (originally 2040); and
- Aim for almost every car and van to be zero emission by 2050.
- Government Cycling and Walking Policy for England July 2020 – Government wants to see a step-change in cycling and walking in the coming years. Increasing cycling and walking can help improve air quality, combat climate change, improve health and wellbeing, address inequalities and tackle congestion on our roads. This policy aids to create connected, healthier, and more sustainable communities.

2.6. The proposed development adheres to these policy objectives as the sustainability of the site, from a transport perspective, has been considered to minimise the impact on the local transport network, in terms of private car use, and provide sustainable travel options wherever possible.

Local Planning Policy

Hertfordshire County Council Local Transport Plan (2018-2031)

2.7. The HCC Local Transport Plan 4 (LTP4) sets out the plans, policies and programmes for transport and transport infrastructure. The plan covers the period up to 2036.

2.8. There are nine objectives under the three themes of place, people and prosperity. These objectives are as follows:

- Improve access to international gateways and regional centres outside Hertfordshire;
- Enhance connectivity between urban centres in Hertfordshire;
- Improve accessibility between employers and their labour markets;
- Enhance journey reliability and network resilience across Hertfordshire;
- Enhance the quality and vitality of town centres;
- Preserve the character and quality of the Hertfordshire environment;
- Reduce carbon emissions;
- Make journeys and their impact safer and healthier; and
- Improve access and enable participation in everyday life through transport.

2.9. The proposed development adheres to this policy as it seeks to enhance the connectivity within Park Street, St Albans and the wider strategic network. This will seek to improve accessibility to employment, journey quality and the reliability of the public transport network in Hertfordshire. Wider consideration of the sustainability of the development site, in terms of Government initiatives, has also satisfies the LTP objectives.

City and District of St Albans District Local Plan Review (1994)

2.10. The current Local Plan adopted by St Albans City and District Council is the District Local Plan Review (1994). This was updated in 2018 however, this was later withdrawn. Any policies stated in the original Local Plan (1994) is considered out of date.

3. Baseline Conditions

3.1. This Section details the baseline conditions of the site, reviewing the existing pedestrian, cycle and public transport provision, as well as the local highway network and Personal Injury Accident (PIA) records for the last five years.

Existing Site

3.2. The proposed development site is located north of Park Street village 0.45km from the village centre accessed via Watling Street. Park Street is situated approximately 4km south of St Albans and approximately 4km north of Radlett. The A5183 runs north-south along the eastern boundary of the site and is a main distributor road connecting Park Street to St Albans as well as the A414 via the Park Street Roundabout. The site currently consists of agricultural land and is bounded to the west by hedgerows and arable farmland, Watling Street runs along the site boundary line to the east, there is an existing residential property to the north and an existing residential area to the south.

Sustainable Travel

3.3. This Section considers the existing walking, cycling and public transport provision within the vicinity of the site providing access to local amenities.

Walking and Cycling

3.4. The existing footway that runs alongside the eastern boundary of the proposed development site is currently considered in poor quality as it appears overgrown and narrow for pedestrians and cyclists alike. On the boundary of the site along the A5183, north of the site access, there is also a lack of formal pedestrian crossing.

3.5. An existing shared footway/cycleway runs from the end of the north eastern boundary of the site from the A5183 heading north before splitting into three. One part of the route heads northwards providing an underpass for cyclists and pedestrians under the A5183/A414/A405 roundabout. A second route heads eastwards running parallel with the A414 and the third heads south west alongside the A405.

3.6. The Institute of Highways and Transportation (IHT) have provided guidelines on the desirable, acceptable and considered distances for different types of walking trips for pedestrians without a mobility impairment, and these are summarised in Table 3-1[3].

Table 3-1 - IHT Walking and Distance and Guidelines

	Town Centres (m)	Commuting/ School/ Recreational	Other Journeys (m)
Desirable	200	500	400
Acceptable	400	1000	800
Considered	800	2000	1200

3.7. There are a number of local amenities and facilities within walking and cycling distance from the development site, shown in Table 3-2. Walking and cycling times were calculated using google maps and checked using the Open Route Service (ORS) tool.

[3] http://www.ciht.org.uk/download.cfm/docid/D66AD936-281C-4220-BF109289B5D01848

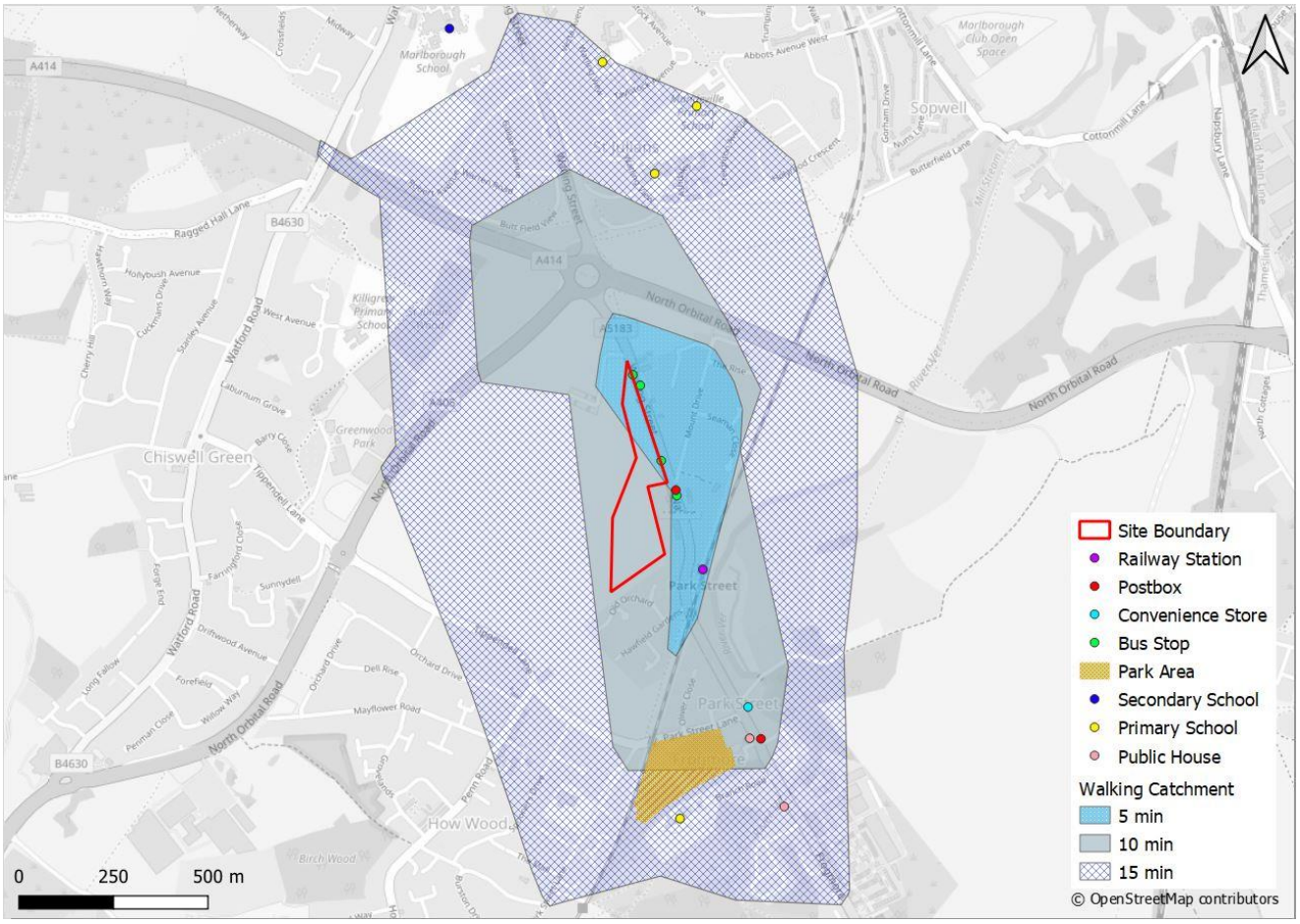
Table 3-2 - Walk and Cycle Times to Local Amenities

	Amenity	Distance (m)	Walking Time (mins)	Cycling Time (mins)
Education	Park Street Primary School	1113	14	4
	Mandeville Primary School	1448	17	5
	Watling View School	966	12	5
	St Adrians Catholic Primary School	1287	16	6
	The Marlborough Science Academy	1448	19	7
Services	BP Petrol Station/M&S Simply Food	322	4	1
	Mount Drive Post box	69	1	1
	Park Street Post box	805	11	4
	Twinsco Convenience Store	644	8	2
Leisure/Recreation	Park Street Sports & Social Club	805	9	3
	Moor Mill Fishery	1770	20	5
Travel	Bus Stop – Mount Drive (North)	5	1	1
	Bus Stop – Mount Drive (South)	91	1	1
	Bus Stop – North Orbital Road (North)	161	3	1
	Bus Stop – North Orbital Road (South)	161	2	1
	Park Street Railway Station	322	4	1
	National Cycle Route 6	1448	17	4

Note: Distances are calculated from the centre of the proposed site, with an assumed average walking speed of 3mph, and assumed cycle speed of 10mph

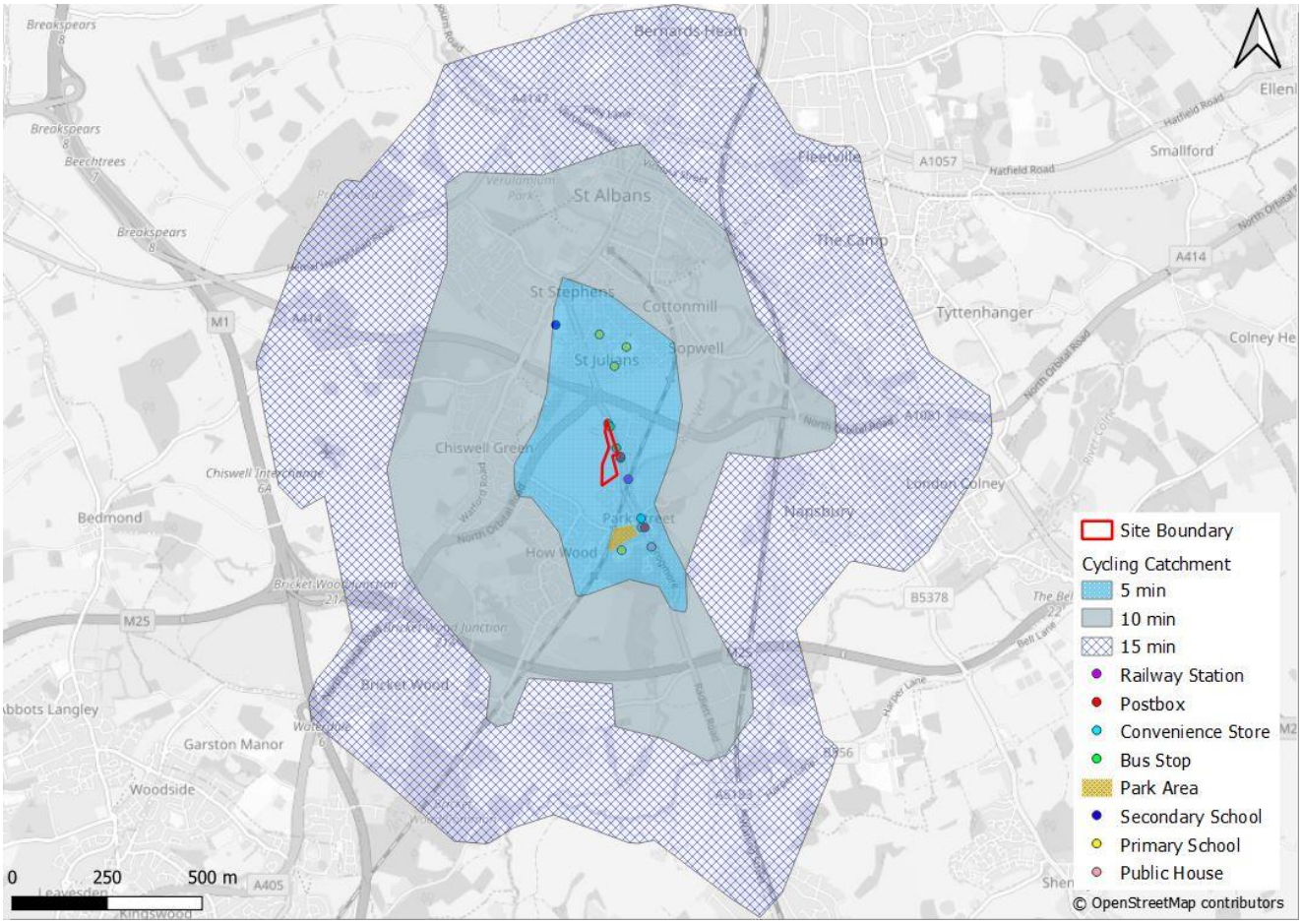
3.8. Figure 3-1 shows approximate walking times from the development. All local amenities within Park Street and those nearby within St Albans are within a 15 minute walk (based on walking speeds of 3mph). Access from the development is provided via existing pedestrian infrastructure on Watling Street on the north eastern boundary of the development. Marlborough Science Academy is the only nearby secondary school and is around a 20 minute walk from the site which is accessed via Watling Street and the A414 underpass. The secondary school is considered to be within an acceptable distance from the site (around 1.5km).

Figure 3-1 - Walking Times from the Proposed Park Street Site



3.9. Figure 3-2 shows cycling times from the development. All of Park Street and a large proportion of St Albans are within a 15-minute cycle ride. Therefore, all identified local amenities are within a 15-minute cycle ride.

Figure 3-2 - Cycling Times from the proposed Park Street site



Public Transport: Bus

3.10. The closest bus stops offering access to all local bus services from the proposed development are located on Watling Street. North Orbital Road bus stops are located on the eastern boundary of the development 161 metres from the site. Mount Drive bus stops are located at the eastern boundary of the development 7 metres from the site. These stops offer two bus services: 601 The Alban Way and the 635. The 601 route runs between Welwyn City Garden and Borehamwood. The 635 runs between Hatfield and Watford.

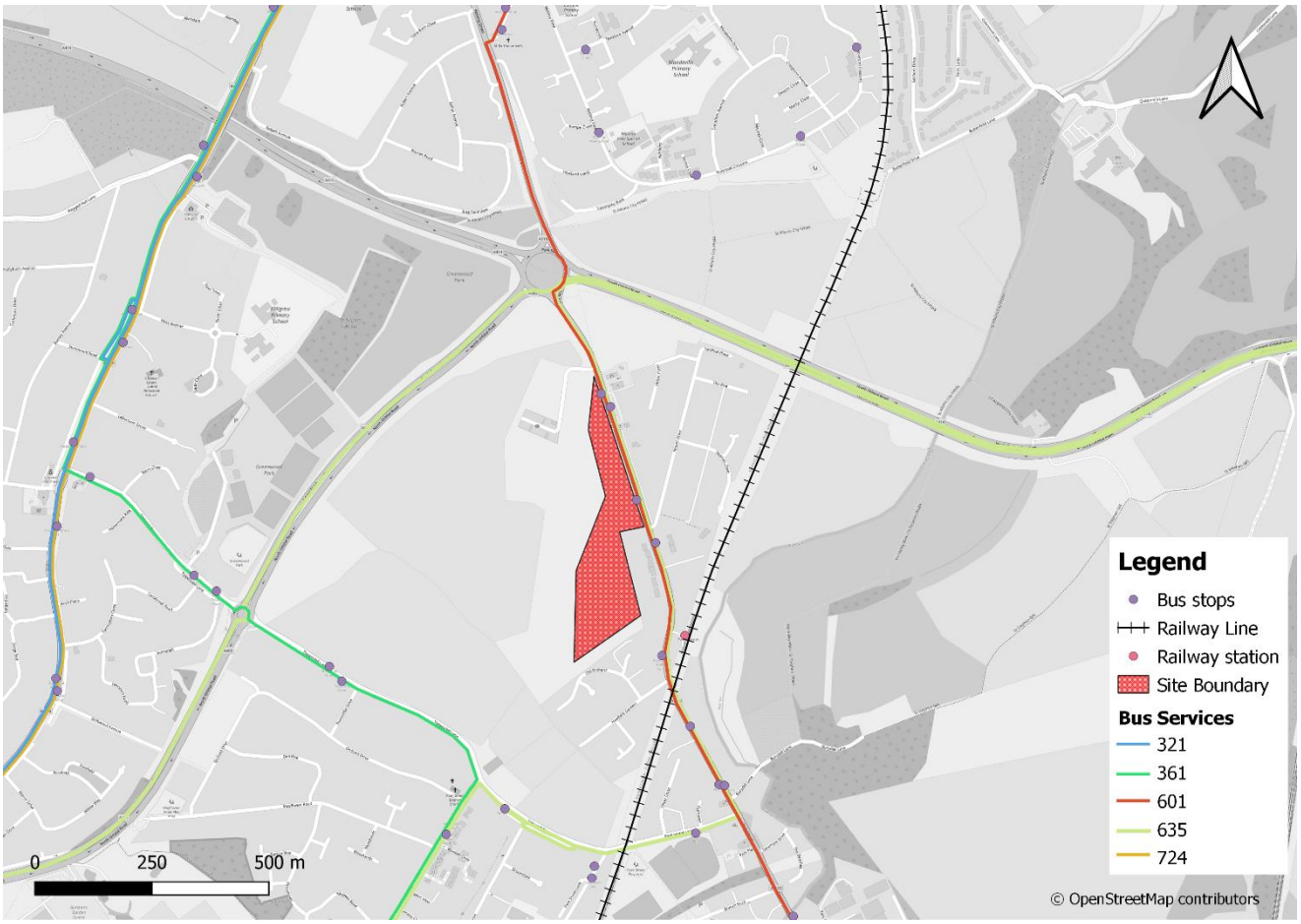
3.11. Table 3-3 provides a summary of the main bus services currently serving the A5183 corridor Watling Street corridor along the frontage of the site.

Table 3-3 - Existing Bus Service Timetable

	Route	Frequency of Service		
		Weekdays	Saturday	Sunday
601 The Alban Way	Welwyn City Garden – Borehamwood	Hourly between 06:16 – 18:45	Hourly between 07:17 – 18:39	N/A
635	Hatfield – Watford	1 within the hour between 06:25 – 17:20	N/A	N/A

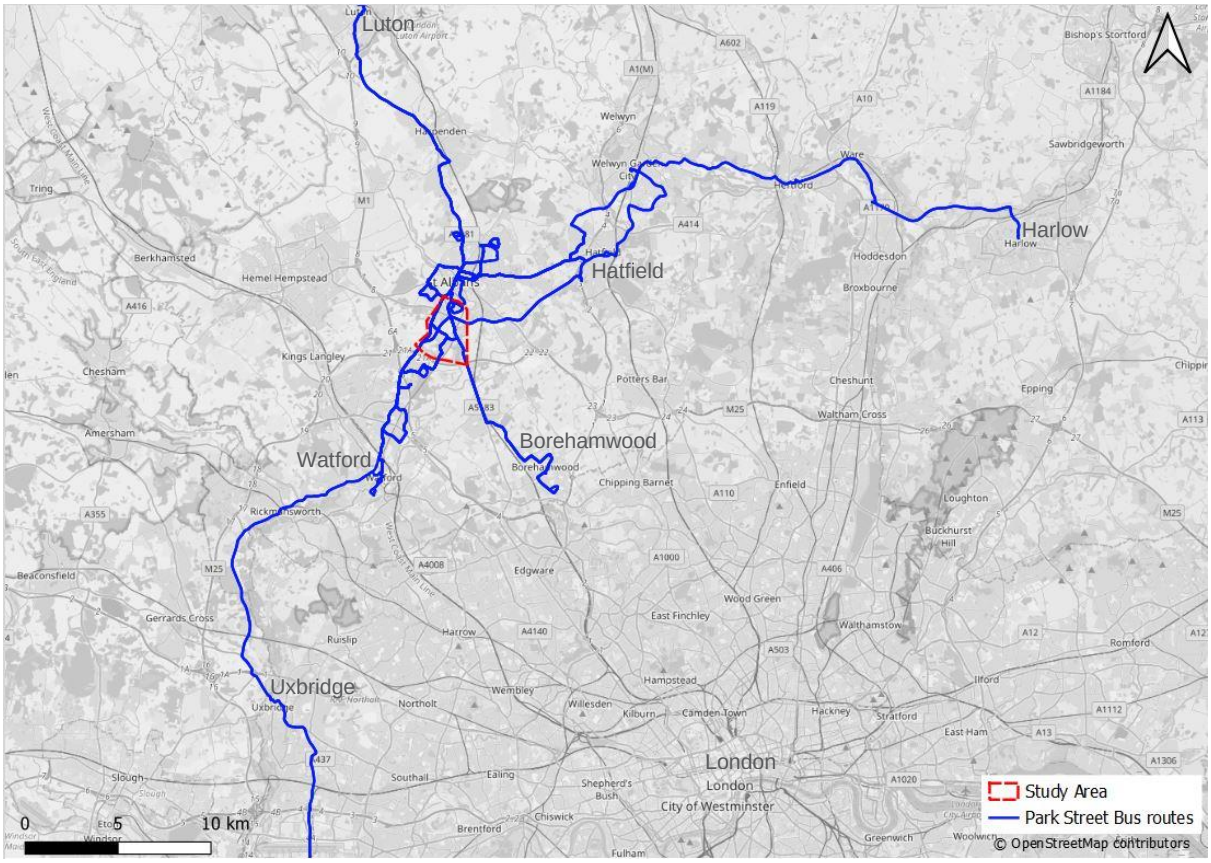
3.12. Figure 3-3 presents the existing bus routes that run close to the proposed development site. The 601 and 635 services run adjacent to the east boundary of the site whilst there are routes further afield, for instance the 321, 361 and 724 services. Park Street Railway Station is also situated near the proposed site.

Figure 3-3 - Existing public transport amenities surrounding the proposed development site



3.13. Figure 3-4 presents the bus route destinations from Park Street. Bus services from Park Street are provided to London Heathrow Airport, Luton and Harlow. This demonstrates that bus routes close to the development offer regional connectivity to the wider strategic network.

Figure 3-4 - Bus Route Destinations from Park Street



Public Transport: Rail

3.14. The closest railway station to the development is Park Street Railway Station. This is a service running on the Abbey Line, a semi-rural line offering services between Watford Junction and St Albans Abbey in each direction every 45 minutes. The railway station is located 0.45km away from the proposed development (6-minute walking and 2-minute cycling time).Table 3-4 provides a summary of the rail services available at this station.

Table 3-4 - Existing Rail Services from Park Street Railway Station

Destination	Frequency of Departures		Travel Time
	Peak	Off-Peak	
St Albans Abbey	Approximately every 45 minutes	Approximately every 45 minutes	5-7 minutes
Watford Junction	Approximately every 45 minutes	Approximately every 45 minutes	19-33 minutes

3.15. Park Street Railway Station is open 24 hours a day and offers the following facilities:

- Sheltered cycle parking for 12 spaces;
- Car parking for 23 spaces;
- Ticket machines;
- Customer help point; and
- Pay Phones.

Local Highway Network

3.16. This Section considers the local highway network surrounding the proposed development site.

Watling Street (A5183)

3.17. The Watling Street runs north-south along the eastern boundary of the development and will provide vehicle access to development. Watling Street is a main distributor road going towards St Albans. To the north, Watling Street connects to the A414 and North Orbital Road at the Park Street Roundabout providing strategic links from east to west. North of the Park Street Roundabout, Watling Street continues to St Albans. To the south Watling Street provides links to Radlett and beyond this, it provides onward connections to Watford, Borehamwood and north London. Watling Street is a single carriageway with a 30mph speed limit enforced to the south of the site, however this changes to 40mph along the boundary of the site travelling north towards the Park Street Roundabout. Once Watling Street reaches the Park Street Roundabout, the road is subjected to a national speed limit of 60mph.

A414

3.18. The A414 runs west-east from Hemel Hempstead at the Breakspear Way/Green Lane/A414 roundabout to London Colney at the A414/A1081/High St roundabout. The A414 intersects with Watling Street at the Park Street Roundabout. Between the M1 and Park Street Roundabout, the A414 is classified as part of the Strategic Road Network managed and maintained by National Highways.

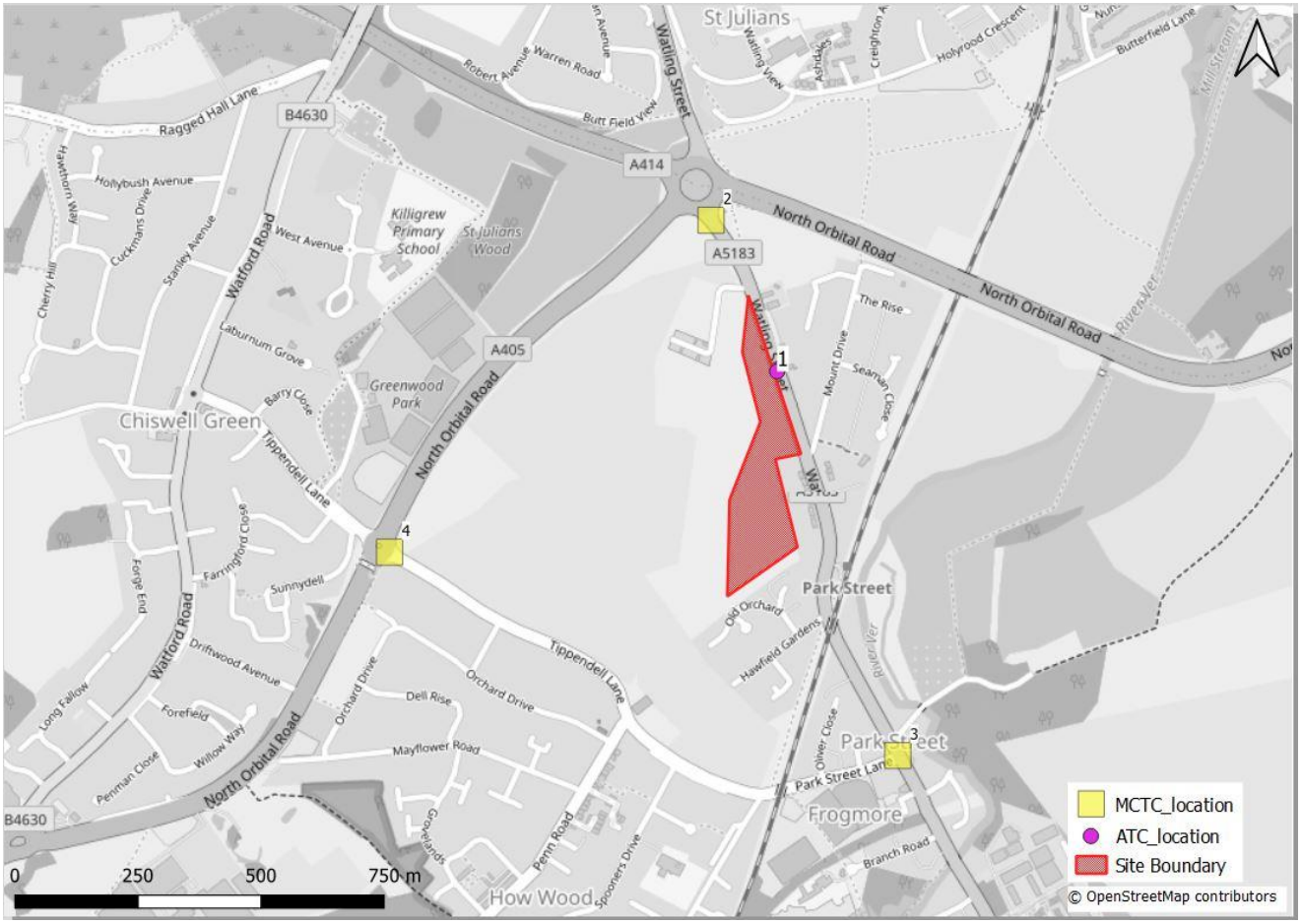
North Orbital Road (A405)

3.19. The North Orbital Road provides a highway link to Watford between the Park Street Roundabout and the A405/A41/High Road roundabout. Heading south, the North Orbital Road also provides access to the M25 Junction 21A.

Traffic Survey Data

3.20. In order to record baseline traffic flows on the local highway network, traffic data was collected in the form of Automated Traffic Counts (ATCs), Manual Classified Turning Counts (MCTCs), and queue length counts at key locations agreed in the scoping stage with HCC. The locations of these survey counts are illustrated in Figure 3-5.

Figure 3-5 - Survey Locations



3.21. The ATC surveys were conducted on five consecutive days between 2nd November 2021 and 8th November 2021, at the entrance of the development site on Watling Street, see Figure 3-5.

3.22. Table 3-5 presents a summary of the recorded two-way peak hour flows on the highway link, as well as 12- hour and 24-hour total flows across five days.

Table 3-5 - Highway Link Flows at Survey Locations

Link	AM Peak Hour (0800-0900)	PM Peak Hour (1700-1800)	12hr (0700-1900)	24hr
Watling Street				
Northbound	470	462	4,117	4,956
Southbound	466	345	4,000	5,076
Two-way	936	807	8,117	10,033

Personal Injury Data

3.23. PIA data was obtained from the Department for Transport for the area anticipated to be impacted by the development for the most recent five-year period available (December 2014 – December 2019). Over the five-year period, a total of 133 accidents occurred within the study area with 174 casualties and 266 vehicles involved.

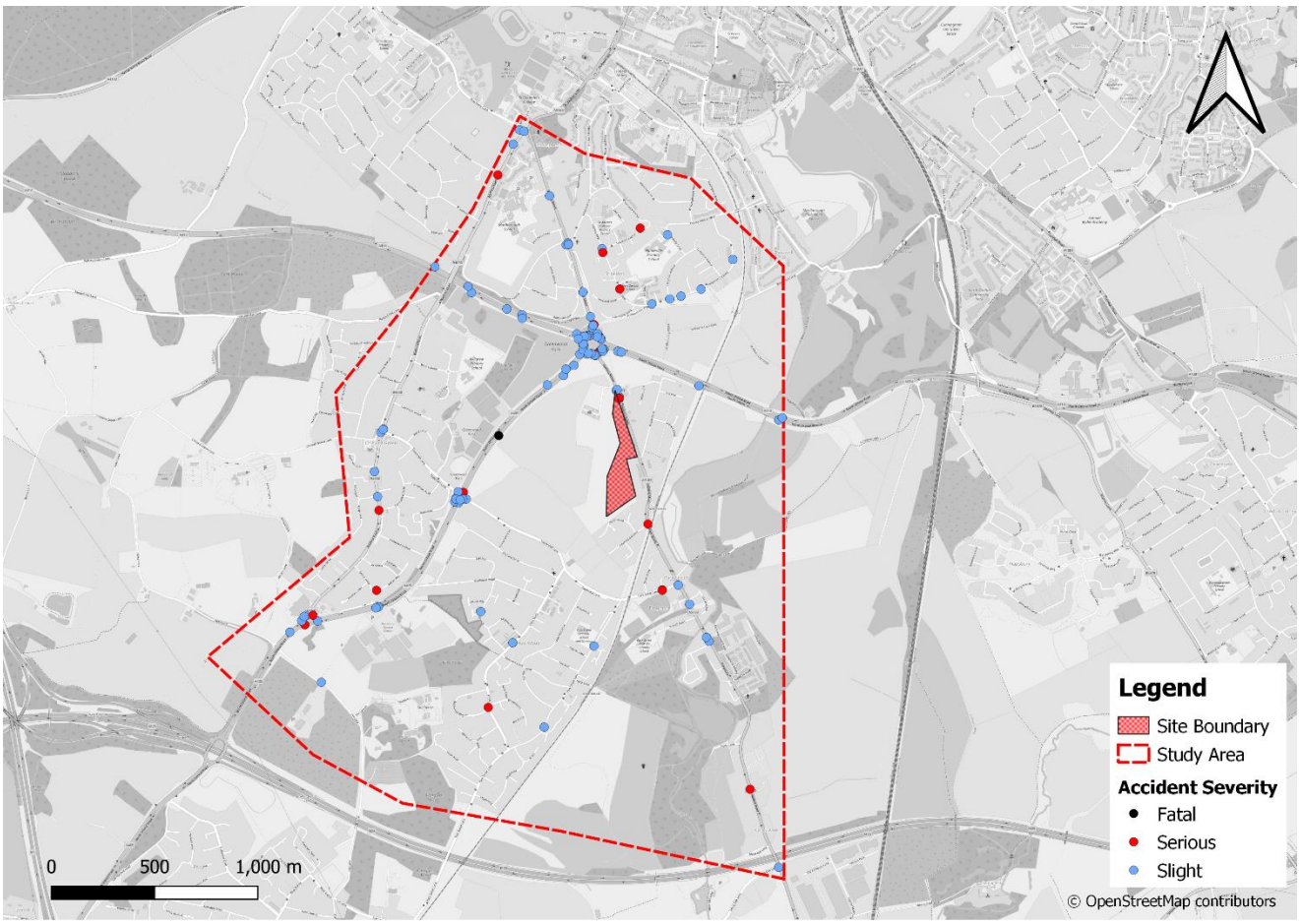
3.24. The following patterns were observed:

- Out of the total number of accidents 86% were slight in severity;
- 63% of the total number of accidents occurred at junctions (42% occurred at a roundabout and 21% at other junctions);
- 76% of total accidents occurred during daylight conditions; and
- 72% of total accidents occurred during dry conditions.

3.25. A spatial analysis of child casualties within the study area was carried out and identified 4 child casualties and 1 potential child casualty of a pedestrian or cyclist nature had occurred over the five-year period. There was no associated trend in child-related casualties and location of occurrence, and it should be noted that none occurred directly outside the proposed development site. However, one child casualty occurred outside Mandeville Primary School within the five-year period.

3.26. Figure 3-6 presents the distribution of Road Traffic Accidents (RTAs) within the study area surrounding the proposed development site over the 5-year period. Most RTAs are of a slight severity with one fatal RTA occurring along the A405. Most RTAs within the study area tend to converge around the Park Street Roundabout. Overall, there are not a significant number of accidents occurring on Watling Street next to the boundary of the proposed development site

Figure 3-6 - Distribution of Road Traffic Accidents (RTAs) within the 5-time period



3.27. Figure 3-7 below charts the RTAs on Park Street Roundabout in more detail. illustrates the RTAs situated around Park Street Roundabout. Most RTAs associated with Park Street Roundabout are slight in severity with three RTAs being of a serious nature.

Figure 3-7 - Distribution of RTAs on Park Street Roundabout within the 5-year period

3.28. In summary, the number of accidents recorded over the five-year period does not suggest there are existing safety issues with the surrounding highway network. This is due to most accidents within the study area being 'slight' in severity with accidents on the Park Street Roundabout appearing proportionate at all adjoining arms. During spatial analysis, no trend was found within child pedestrian/cyclist casualties.

Committed Developments

3.29. At present, there are no committed developments in close proximity to the Park Street development site that could have a significant impact on the local transport network or the delivery of the development.

3.30. A proposed Strategic Rail Freight Interchange is proposed to the east and south of Park Street and west of London Colney (ref: 5/2009/0708). The proposed highway infrastructure includes for a new junction on the A414 onto the A5183, where it goes under the M25. Although the area generally is likely to see increased traffic, it is expected to have a positive impact on Park Street itself given the new highway on the site which provides a link between the A414 and A5183 to the south of the village, creating a bypass effect.

Summary

3.31. This Section summarises the baseline conditions of the existing transport infrastructure that exists around the proposed development site.

3.32. The local highway network surrounding the development consists of three main A-roads; A5183 which runs along the north eastern boundary of the proposed development site, the A414 and the A405. Part of the A414 is classified as part of the Strategic Road Network.

3.33. Over a five-year period, most RTAs in the area surrounding the proposed development site have been 'slight' in severity with many converging on the Park Street Roundabout, proportionately at each junction point. There was not a significant number of accidents along Watling Street outside the proposed development site. The number of accidents occurring at the roundabout is as expected due to the fact the roundabout is a junction for several A-roads of which one is part of the Strategic Road Network. No trend was found in spatial analysis over the occurrence of child casualties within the study area.

3.34. In addition, no significant committed developments were identified that could have a significant impact on the local transport network.

3.35. Two local bus routes run directly outside the proposed development site with routes between Welwyn City Garden, Borehamwood, Hatfield, and Watford. No Sunday bus services run directly outside the proposed development site. Nearby bus routes to the proposed development site also run further afield to London Heathrow Airport, Luton and Harlow.

3.36. Park Street Railway Station, close to the proposed development site, is served by a local rail service in each direction approximately every 45 minutes terminating at either St Albans Abbey or Watford Junction. Cycle parking facilities are available at the station.

3.37. Overall, the proposed development site is situated close to local transport services and amenities with local bus stops and the Park Street Railway Station being within a one and four minute walk respectively. Several primary schools surrounding the development are within a 15-minute walking catchment area with one secondary school being reachable within the 15-minute cycling catchment area.

4. Proposed Development

4.1. This Section outlines the details of the proposed development in terms of access to the site by highway, sustainable transport modes, service vehicles access, and resident/visitor parking.

Proposed Development

4.2. The proposal seeks to provide a total of 95 residential units with supporting parking, active travel provision and landscaping to the Land West of Watling Street to the north of Park Street Village centre. The location of the proposed development is included in Figure 1-1. The site layout can be found in Appendix B.

Vehicular Access

4.3. The main vehicular access to the proposed development will be from Watling Street which runs along the north eastern boundary of the proposed development site via a new T-junction. The proposed access junction has been designed to accommodate all movements to and from the site. The features of the proposed access will provide the following:

- A 6m wide access road;
- A visibility splay of 4.5m x 90m can be each in both direction; and
- An illustrative internal road layout, which can be found in Appendix B, shows a mixture of highway and shared surface.

4.4. A proposed site access arrangement can be found in Appendix C.

Pedestrian and Cycle Access

4.5. Pedestrian and cycle access into the proposed development will be provided from Watling Street in four locations:

- In the northernmost part of the site connecting to the existing footway on Watling Street, where a new signalised pedestrian crossing is proposed;
- A second pedestrian link connecting to Watling Street opposite proposed plot 95;
- A 2m footway on the north side of the site access and a 3m on the southern side of site access; and
- To the south of the site access where a footpath will connect with a pedestrian cycle access adjacent to the existing signalised crossing on Watling Street.

4.6. It is also proposed to introduce a signalised pedestrian crossing on Watling Street provided at the northern end of the site to facilitate pedestrians across Watling Street to reach the Petrol Filling Station and footways to the east of Watling Street. This will also benefit existing residents accessing St Albans via bus.

4.7. Internally, a 3m shared use path is to be provided along the spine road from the southern side of the site access (eastern side of the road). A 2m footway is provided where a shared use path is not present. Internal footway provision is shown in Appendix B.

Public Transport Access

4.8. It is considered that the proximity of the site to existing bus stops is good (North Orbital Road bus stops are situated 161m north of the site entrance and Mount Drive bus stops are 6 metres to south of site), as shown in Figure 3-3. It will be at the discretion of the local bus operating companies should they wish to amend routes or expand services once the development has been built-out. It is also considered that bus services and routing could be updated and extended to serve the new development and provide greater connectivity to St Albans and the surrounding area.

4.9. The site is also a walkable distance to/from Park Street Railway Station where local rail services can be accessed, as detailed in paragraph 3.14.

Parking

4.10. Parking standards set by St Albans City and District Council are listed in Table 4-1. The development also proposes to include provision for Electric Vehicle (EV) charging. Discussions with

a Highways Officer at HCC during the pre-application meeting also indicated that tandem parking is within the bounds of the HCC parking standards for parking. Individual residential dwellings will be provided with a bicycle parking space within the curtilage of the residential unit i.e. within a garage or garden shed. However, dedicated cycle parking facilities will be required for flats to accommodate residents and visitors. As St Albans District Council and HCC are currently producing an emerging LCWIP, further guidance on cycle/vehicle parking standards will be provided in due course.

Table 4-1 - Residential Development Parking Standards (St Albans City and District Council District Local Plan Review – 1994)

Dwelling Size (Bedrooms)	Number of Spaces Required Per Dwelling		
	Allocated	Unallocated	Total
1 (including bed-sits) bedroom	0	1.5	1.5
	1	0.5	1.5
2 bedrooms	0	2	2
	1	1	2
	2	0.5	2.5
3 bedrooms	2	0.5	2.5
4 or more bedrooms	3	0.5	3.5

Servicing, Refuse and Emergency Access

4.11. The internal road layout has been designed to accommodate all servicing, refuse and emergency vehicles accessing and egressing the site in forward gear. Swept path analysis has been carried out on the main site access junction for a standard British refuse vehicle. The swept-path analysis uses a 2.49m wide and 9.93m long refuse vehicle. The swept path drawings are included in Appendix D.

5. Trip Generation, Distribution and Assignment

5.1. This Section outlines the predicted trip generation for the proposed development, including person trips, vehicle trips and trip distribution. Trip generation was assessed using trip rates obtained from TRICS 7.8.2 database, as well as National Travel Survey (NTS) and Journey to Work Census Data for St Albans (2011).

Methodology

5.2. The National Census Data for the St Albans 019 Middle Super Output Area (MSOA) containing the development site has been used in this assessment.

5.3. The 2011 Census Data was used as a means of understanding the workplace travel patterns of residents currently living in the area. It was considered that using this dataset was the most appropriate method for understanding the travel requirements of future residents. The NTS of Great Britain (2019) was also used alongside the 2011 Census data to further understand journey purpose and model share patterns.

5.4. The following methodology was considered for the trip generation:

- Multi-modal person trip generation from residential developments using the TRICS database;
- The journey purpose of trips by time of day using NTS surveys;
- The model distribution of trips by purpose using the NTS and 2011 Census data; and
- The distribution of journey to work trips to and from the St Albans MSOA using the 2011 Census data.

Person Trip Generation

5.5. TRICS 7.8.2 was used to obtain residential person trip rates for sites considered to have similarities with the proposed development on Park Street. The TRICS parameters applied included:

- Greater London, Ireland, and Northern Ireland omitted;
- Mondays and Fridays omitted;
- Included the last 5-years of data; and
- Included developments of 25 to 1000 dwellings.

5.6. There were 26 residential developments that were considered relevant to the selection parameters these are summarised in Appendix E. Table 5-1 below shows the person trip rates and the person trips predicted to be generated by the proposed development.

Table 5-1 - Person Trip Generation for the Development

Trip Rates	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)		Daily (07:00-19:00)	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Total People	0.218	0.826	0.628	0.257	3.916	3.93
Vehicles	0.141	0.388	0.368	0.146	2.275	2.296
Cyclists	0.003	0.015	0.01	0.008	0.053	0.053
Pedestrians	0.04	0.14	0.108	0.038	0.459	0.472
Public Transport	0	0.026	0.017	0.005	0.113	0.117
Trip Generation	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)		Daily (07:00-19:00)	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Total People	21	79	60	25	376	377
Vehicles	14	37	35	14	218	220
Cyclists	0	1	1	1	5	5
Pedestrians	4	13	10	4	44	45
Public Transport	0	2	2	0	11	11

5.7. Table 5-1 shows that the proposed development is predicted to generate a total of 100 trips in the AM peak hour, of which 21 are arrivals and 79 are departures. For the PM peak hour, 85 trips are predicted to be generated, with 60 being inbound and 25 being outbound.

Disaggregation by Journey Purpose

5.8. To establish the purpose of trips generated by the proposed site, the obtained trip rates were disaggregated into different journey purpose categories and by the time of day. This is informed by data from the National Travel Survey (2019) relevant to the study area. The trip rates by journey purpose are shown in Table 5-2.

Table 5-2 - Percentage of Person Trips by Journey Purpose

Journey by Purpose	AM Peak (08:00-09:00)	PM Peak (17:00-1800)	Daily (07:00-19:00)
Work	23%	35%	30%
Education	52%	5%	23%
Shopping	4%	12%	9%
Personal Business	14%	20%	16%
Visit/Leisure	3%	20%	15%
Other	4%	8%	7%

5.9. The trip generation in Table 5-2 were applied to the person trip generation figures in to give a prediction of total peak hour person trips by journey purpose, as shown in Table 5-3.

Table 5-3 - Number of Person Trips by Journey Purpose

Journey by Purpose	AM Peak (08:00-09:00)	PM Peak (17:00-1800)	Daily (07:00-19:00)
Work	23	30	228
Education	52	4	172
Shopping	4	10	70
Personal Business	4	17	122
Visit/Leisure	14	17	110
Other	3	7	52

5.10. Education related journeys are predicted to account for the highest proportion of trips in the AM peak hour, however only a small proportion of trips in the PM peak hour are expected to be education related, as the majority of education related trips are expected to have been completed by this time. The majority of PM peak hour trips are predicted to be commuting or work-related journeys. Work trips also remain relatively high in the AM peak hour. The highest daily proportion of trips are expected to be related to work or commuting (30%), followed by education (23%) and personal business (16%).

Multi-modal Trip Generation

5.11. Mode shares for the proposed development were derived from 2011 Journey to Work Census Data for the St Albans 019 MSOA. These mode shares were combined with the TRICS trip generation data to provide predicted trips by mode. The predicted mode shares are shown in Table 5-4, with the highest proportion of trips being undertaken by private vehicle (driver). The predicted trip generation by mode is shown in Table 5-5, this identifies the highest number of expected trips to be undertaken by privately owned vehicles during the AM peak hour.

Table 5-4 - Mode Shares for the St Albans 019 MSOA

Mode	Percentage Total
Walk	8%
Bus	2%
Cycle	2%
Train	11%
Car Driver	69%
Car Passenger	6%
Motorcycle / Scooter	1%
Other	1%

Table 5-5 - Total Person Trip Generation by Mode for all Journey Purposes

Mode	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	2	7	8	5	2	7
Bus	1	2	2	1	1	2
Cycle	0	2	2	1	1	2
Train/Underground	2	9	11	7	3	9
Car Driver	14	54	69	41	17	58
Car Passenger	1	5	6	3	1	5
Other	0	0	0	0	0	0
Total	**20**	**79**	**98**	**58**	**25**	**83**

*totals may not add up due to rounding.

Trip Distribution and Assignment

5.12. Trips associated with the Park Street development have been distributed using the following data sources:

- Location of nursery, primary and secondary schools and Census data on the distribution of school-aged children;
- National Census data on travel to Work for work related trips; and
- National Travel Survey data for trips by purpose – for work, education, shopping and other.

5.13. Trips have been assigned to the local highway network for each journey-type in the following ways:

- Commuting trips;

- Education trips; and
- Other trips – for example shopping, visiting friends, leisure, personal business etc.

Commuting Trips

5.14. Trips for commuting are distributed in accordance with the location of key employment locations and links to the wider strategic road network from the site accesses. Table 5-6 presents the percentage of trips heading north or south from the site access associated with commuting.

Table 5-6 - Trip Distribution of Commuting Trips

Direction	Percentage
North	55%
South	45%

Education Trips

5.15. Trips associated with education were distributed in accordance with the location of nursery, primary and secondary schools for both journey time and distance from the development site. The weighted percentage of trips for schools within a 5km catchment of the proposed development site are detailed in Table 5-7 and Table 5-8 summarises the split of trips going to / coming from the north and south respectively.

Table 5-7 - Weighting Factors for Educational Trip Distributions

Schools	Direction	Weighting (%)
Killigrew Primary and Nursery School	N	9%
Watling View School	N	10%
St Adrien's Primary School	N	21%
Mandeville Primary School	N	17%
Saplings Preschool and Nursery	S	9%
How Wood Nursery and Primary School	S	15%
Park Street C of E Junior Mixed and Infant School	S	10%
Park Street Primary School	S	10%

Table 5-8 - Trip Distribution of Educational Trips

Direction	Percentage
North	19%
South	81%

Other Trips

5.16. Other trips were distributed based on local destinations, such as local amenities, residential areas, town centres and leisure facilities, Table 5-9. During both the AM and PM peak hours the greatest percentage of trips head north towards Park Street and St Albans.

Table 5-9 - Percentage Split of Other Trips

Destination	Direction	AM Peak (08:00-09:00)	Total	PM Peak (17:00-18:00)	Total
Park Street	N	10%	75%	15%	68%
St Albans	N	65%		53%	
London	S	6%	25%	9%	31%
Watford	S	6%		9%	
South Herts	S	8%		9%	
West Herts	S	5%		4%	

*Note, due to rounding, the PM peak does not total 100%.

Trip Assignment Summary

5.17. This section summarises the generation and distribution of trips associated with the development. Table 5-10 presents the distribution of trips depending on purpose. The trip distribution is then assigned to the trip generation figures in Table 5-11.

Table 5-10 - Trip Distribution Summary

	Person Trips			
Distribution	Work	Education	Other	Totals
AM Peak (08:00-09:00)				
Park Street – North	13%	41%	18%	72%
Park Street – South	10%	11%	7%	28%
PM Peak (17:00-18:00)				
Park Street – North	19%	4%	43%	66%
Park Street – South	16%	1%	17%	34%
Daily (7:00-19:00)				
Park Street – North	17%	18%	33%	68%
Park Street – South	13%	5%	13%	31%

Table 5-11 - Trip Distribution Assignment

Direction	Person Trips	Vehicle Trips
AM Peak Period		
Park Street – North	75	38
Park Street – South	30	15
Total	105	53
PM Peak Period		
Park Street – North	59	34
Park Street – South	30	17
Total	89	51
Daily		
Park Street – North	539	314
Park Street – South	250	146
Total	789	460

Committed Development Trip Generation

5.18. At the time of the TA completion, there are no committed developments identified that are expected to significantly impact traffic flow on the local road network.

6. Impact Assessment

6.1. The following Section contains an assessment of the impacts of the proposed development on the local transport network, including highway, public transport, cycle and pedestrian networks. This Section also summarises the junction modelling results.

Sustainable Travel

6.2. This section considers the impact of the development on the walking, cycling and public transport provision within the vicinity of the site.

Pedestrian and Cycle Impact

6.3. Analysis of the data in Table 5-5 indicates that the proposed development will generate an estimated 15 pedestrian trips during peak hours (eight in the AM peak hour and seven in the PM peak hour. This is predicted to result in a total of 63 daily two-way pedestrian trips from the site (when factored using the daily trip generation results for 07:00-19:00).

6.4. Table 5-5 presents the number of expected cycle trips generated as a result of the proposed development site and predicts an additional two cycle trips will occur in the AM peak hour and two in the PM peak hour. This is predicted to result in a total of 15 two-way daily cycle trips.

6.5. The predicted level of both pedestrian and cycle trips generated from the Park Street development is not expected to have a major impact on the surrounding active travel network, based on observations from a site visit conducted on the 3rd November 2021.

6.6. The Park Street development is located within 5km of St Albans town centre, as well as being situated with proximity to other local amenities. It is anticipated that most of the walking and cycling trips generated from the site will be to these destinations. It should be noted that the site is also situated 0.45km north of the Park Street Train Station, and therefore it is predicted that will be a be key destination for active mode trips.

6.7. Travel by active modes and the network provided is expected to be further encouraged by the Travel Plan. Overall, the impact of the development on the local active travel network is expected to be minimal. However, the current active travel network may need updating/upgrading to maximise the number of users. Specifically noting the shared use path adjacent to the development on the eastern side.

Public Transport Impact

Bus

6.8. The data in Table 5-5 predicts an additional four bus trips will be generated by the development during the AM and PM peak hours, and a total of 18 daily two-way trips. These will be served by bus stops located on Watling Street connected to routes 601 and 635. The proximity of the bus stops to the proposed development is expected to generate increased bus trips to and from the site, thus provide a sustainable alternative to private car use. It is considered that the Travel Plan will continue to encourage sustainable travel, including journey by bus. Overall, it is expected that the impact on the bus network will be minimal.

Rail

6.9. Table 5-5 suggests that the development is predicted to generate a total 20 additional extra trips by rail during the AM and PM peak hour. The daily trip rate via train to/from the site is expected to increase by 83. However, due to the location of the rail station, situated 0.45km from the development site, this would be expected to be a minimum figure. In reality more people will use Park Street Railway Station. However, the assessments undertaken in this TA demonstrates that even with reduced patronage this development will not have an adverse impact on the local transport network. This could be a likely route for travel into Watford and onto London.

6.10. As previously mentioned, the location of Park Street Railway Station suggests that rail trips are likely to originate from the site in the form of walking, cycling, bus or car trips. Generally, the impact of the proposed development on the rail network is expected to be minimal.

Traffic Modelling and Highway Impact

Introduction

6.11. The predicted impact of the vehicular traffic generated by the proposed development has been tested on the Watling Street junction accessing the site, as agreed with HCC Highways:

6.12. The assessed junctions were modelled using TRL Junctions 9 ARCADY and PICADY software, for the AM and PM peak periods, using baseline traffic data from surveys undertaken in November 2021.The traffic analysis shown in Appendix F. For the purposes of providing robust modelling scenarios the following assumptions and inclusions were adhered to:

- A base year of 2021 has been considered in trip generation figures although has not been modelled as the site access junction currently does not exist. A five-year post application year of 2026 considers for both peak periods;
- The peak periods considered were 08:00-09:00 (AM peak hour) and 17:00-18:00 (PM peak hour);
- Local growth rates derived from TEMPRO for the St Albans 019 MSOA were used to derive traffic growth factors from 2021 to 2026;
- Distribution and assignment was applied to the trip generation as described in the previous sections;
- Scenarios modelled include the following (AM and PM for all scenarios):
  - 2026 Baseline plus development – 2021 traffic data factored to 2026 using TEMPRO growth factors of 1.0509 for the AM peak and 1.0599 for the PM peak plus development traffic.

6.13. A summary of the junction modelling outputs is shown in the following sections and Appendix G. In this, results have been displayed in terms of average queue length in Passenger Car Units (PCUs), delay in seconds[4], and the Ratio of Demand Flow to Capacity (RFC).

6.14. RFC is a measure that determines the performance of a junction and how it handles traffic flow across the peak hours. For junctions modelled using the Junctions 9 software, the RFC values represent the following:

- Less than 0.85 – Junction is operating below capacity;
- 0.85 to 1.0 – The junction is operating towards its full capacity (marked in orange in the tables below); and
- Greater than 1.0 – The junction is operating over capacity (marked in red in the tables below).

Watling Street/Site Access

6.15. Table 6-1 shows the model results for the Watling Street / Site Access junction.

Table 6-1 - Summary of Performance - Site Access / Site Access junction[5]

Arm	AM Peak (08:00 – 09:00)		PM Peak (17:00 – 18:00)	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2026 Future Baseline + Development				
Stream B-AC (Site Access onto Watling Street)	0.1	0.11	0.0	0.04
Stream C-AB (Watling Street travelling into site access and north)	0.0	0.01	0.1	0.04

6.16. The results show that the site access junction is predicted to operate well within capacity in the AM and PM peak periods, with the highest RFC being Stream B-AC (site access to Watling Street) in

[4] Junction 9 User Guide, pp. 314
[5] Baseline assessments have not been conducted on the site access as it does not exist.

the AM peak, which is well below the theoretical capacity threshold, suggesting no congestion issues (0.85).

6.17. As noted in Para 3.30, a proposed Strategic Rail Freight Interchange is proposed to the east and south of Park Street (ref: 5/2009/0708). Given that the modelling results show that RFC is way below the 0.85 threshold, it is considered that this development will not have a major impact on the operation of Watling Street. Indeed, the new highway being provided as part of proposals could have a positive impact on traffic flow in Park Street.

Servicing, Refuse and Emergency Access

6.18. The proposed site access and site layout has been assessed for access by refuse, servicing and emergency vehicles. The swept path analysis is included in Appendix D and demonstrates that all refuse, servicing and emergency vehicles can access and egress the site in forward gear.

6.19. Careful consideration has been taken regarding the turning points within the site to ensure accessibility for service vehicles.

7. Mitigation Measures

7.1. This Chapter identifies potential mitigation measures that could be implemented to further reduce the impact the development on the local highway network.

Travel Plan

7.2. A Travel Plan (TP) has been completed and submitted as part of this planning application and therefore should be read in conjunction with this TA. The TP seeks to encourage more cycling, walking and public transport trips which are also expected to be accommodated for on the local footway, cycleway and public transport networks. An effective TP can reduce private car use by up to 10% where measures are implemented and where a Travel Plan Coordinator (TPC) is active.

7.3. The objectives of the TP will be as follows:

- Reduce the number of single-occupancy vehicle trips travelling to and from the site;
- Promote and endeavour to maximise the use of non-car modes of transport to the site, such as walking, cycling and public transport;
- To establish the management of the Travel Plan by appointing a TPC, who will be responsible for the implementation and operation of the Travel Plan and to undertaking the monitoring;
- To introduce a package of measures, which will include long-term and short-term initiatives, which will assist travel by sustainable modes;
- Address residents need for access to a full range of facilities for work, education, health, leisure, recreation, and shopping; and
- Promote healthy lifestyles and sustainable communities.

7.4. The TP is a method of mitigation by which travel behaviours can be influenced and changed and to inform residents of their travel choices and the benefits to them on reducing travel by private car.

Pedestrian Links and Crossings

7.5. To improve active travel links a proposed pedestrian crossing is being provided on Watling Street near the petrol station. The crossing will improve accessibility and safety for pedestrians and cyclists crossing the A5183 to access local amenities and for access to bus stops. The pedestrian crossing will also act as a traffic calming measure. The pedestrian crossing will not only benefit residents of the proposed development but will also benefit the public crossing Watling Street. The proposals are shown in Appendix B.

Bus Services

7.6. Other mitigation measures include conducting discussions with the relevant bus operators regarding future frequency and service expansion which may accommodate the increased demand for public transport links from the proposed development.

8. Summary and Conclusions

Summary

8.1. Atkins have been commissioned to prepare a Transport Assessment in support of an outline planning application for up to 95 dwellings on a site west of Watling Street, Park Street, St Albans. This will include a single new junction to the site adjoining to Watling Street.

8.2. The development proposals have been assessed in accordance with current transport and land-use planning policies and guidance, specifically from HCC during the pre-application meeting, and represent best practice in terms of promoting more sustainable travel patterns.

8.3. The Transport Assessment has assessed the impact of the development proposals in terms of the following:

- Accessibility to the site (and local area) by non-car modes, such as public transport, walking and cycling, as well as access for those with mobility impairments; and
- Accessibility to the site by private vehicles and the impact of additional traffic (generated by the development proposals) on the site access and the surrounding road network.

8.4. The development proposals include for vehicular and pedestrian access connecting the site to the local highway and footway networks. The proposals would seek to enhance and complement the local pedestrian and cycleway network in order to encourage walking and cycling to and from the site.

8.5. Collision analysis has shown that the number of accidents recorded over the five-year period does not suggest there are existing safety issues with the surrounding highway network. Although there a higher proportion of accidents occurring at the Park Street Roundabout, these incidents occur proportionately across all arms of the roundabout and remain ‘slight’ in severity. It is concluded that the proposed development would not have a significant impact on the number or severity of accidents within the area.

8.6. The trip generation has given likely modal splits for the site and has demonstrated, through using National Travel Survey data and Census data, that the site is designed to support sustainable travel. Furthermore, through the implementation of a Travel Plan further sustainable travel for residents will be encouraged.

8.7. Vehicular access to the proposed development will be from Watling Street, via new T-junction. The proposed site access junction has been designed to accommodate all vehicle movements to and from the site and provide the relevant visibility requirements onto Watling Street. The junction capacity assessments undertaken demonstrate that the site access junctions are predicted to operate well within capacity in the AM and PM peak hours in the 2026 Future Year with the proposed development traffic considered.

8.8. Junction modelling undertaken suggests the impact of the development traffic on Watling Street is likely to be minimal, as it will only serve the proposed development. No comparative analysis is required as this is a new junction to be added to the network.

8.9. Parking requirements on site will be implemented as per the HCC vehicle parking standards, and will seek to ensure that the residential parking is designed in such a way that minimises disruption to accessibility and sustainable transport alternatives.

Conclusions

8.10. This Transport Assessment has demonstrated that the development proposals align to and are consistent with the key themes of national and local transport policy in that they:

- Promote sustainable travel choices; and
- Do not significantly alter the existing performance of the local road network.

8.11. It is therefore recommended that this Transport Assessment is accepted as a robust assessment of the transport impacts associated with the Land West of Watling Street development, and in accordance with NPPF does not have a ‘severe’ impact on the local highway network.

Appendices

Appendix A. Pre-Application Meeting

Environment and Infrastructure

David Lewis
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Email: Alan.story@hertfordshire.gov.uk
My ref: SA/8653/2021
Your ref:
Date: 30/11/2021

Dear Ellie

RE: Land West of Watling Street, Park Street, St Albans

Further to our site meeting in vicinity of your client site – Land West of Watling Street, St Albans on 3/11/2021 it was agreed that you would do brief summary of points discussed, and forward for review. I had also agreed to provide some bullet points on the matters discussed. I had intended to append any additional notes to your meeting note, but recognising this has not yet been supplied I felt best to capture those notes that I shared with you at meeting.

First and foremost – we discussed the potential for access from Watling Street.

Watling Street, as the A5183 is a principle road within the Hertfordshire Road Hierarchy. The County Councils Local Transport Plan sets out the policies that this Authority direct to any development within the County, and is available here;

https://www.hertfordshire.gov.uk/media-library/documents/about-the-council/consultations/ltp4-local-transport-plan-4-complete.pdf

Within this, Development Management policies are described within Policy 5. Specific to your proposals (my emphasis) is;

Policy 5: Development Management

The county council will to work with development promoters and the district and borough councils to:
a) Ensure the location and design of proposals reflect the LTP Transport User Hierarchy and encourage movement by sustainable transport modes and reduced travel demand.
b) Ensure access arrangements are safe, suitable for all people, built to an adequate standard and adhere to the county council's Highway Design Standards.
f) Only consider new accesses onto primary and main distributor roads where special circumstances can be demonstrated in favour of the proposals.

This Authority presents an objection to any new access onto an A road unless special circumstances are demonstrated. As explained, inclusion as a preferred site within the Local Plan is considered as a step towards meeting this test. Until such time as the Local Plan is adopted, there would be a policy objection to proposals for any new access onto the A405. You may wish to preparing a statement of how you consider special circumstances is demonstrated prior to this point, and it shall be for this Authorities Strategic Transport Infrastructure Board to assess whether there is any merit within the circumstances presented, but it is my own officer recommendation that your requirement is to support housing only – offering no greater benefit to the public highway network, and therefore the special circumstance is contributing to the identified housing supply need within any emerging local plan and thereby contingent on inclusion within the adopted list of sites within any such plan.

All pre-app comments herewith are offered without prejudice to the views of the County Council at regulation 18 / 19 of any Local Plan consultations

Discussions were held on the position of the speed limit. Any access proposal that falls within that section of Watling Street that is signed as 40mph shall – by reference to Hertfordshire's design standards be required to be provided with visibility splays compliant with the recommendations of DMRB – i.e. 90m, measured 4.5m set back. It is unlikely that any departure from this standard would be applied, recognising that Watling Street at this location cannot be considered as having much other than a 'movement' function. See;

Roads in Hertfordshire: Highway Design Guide 3rd Edition Section 1: Policy Information and General Guidance Chapter 1: Introduction, Standards and Informal Consultations – Paragraph 1.4 section-1-policy-info-highways-design-guide.pdf (hertfordshire.gov.uk)

Any proposals that might seek to move the speed limit to enable use of MfS visibility splays shall need to be delivered in accordance with the Hertfordshire Speed Management Strategy – available here;

https://www.hertfordshire.gov.uk/media-library/documents/highways/transport-planning/local-transport-plan-live/speed-management-strategy.pdf

As per my advice on site, the existing characteristics of Watling Street (not withstanding any direct frontage activity your site might offer in its' design) is unlikely to contribute to the sense of 'place' in this location, and it is unlikely (in my opinion)

that any support shall exist for a 30mph speed limit change. As per the above guidance, the starting point for any speed limit change is that vehicle speeds in the immediate locale reflect that of the proposed limit.

Design of access should demonstrate that the use of the access does not result in undue delay to traffic on Watling Street i.e. that any right turn provides adequate capacity for vehicles.

Wider modelling may be required to Park Street roundabout – you are advised that the County Council, alongside St Albans and District Council will test Local Plan Growth assumptions within our Comet model. The comet model is available for your own use independent of this assessment, and should any application be brought forward in advance of the Local Plan process, I encourage you to test your development impacts on the Park Street (a414 junction).

Any detailed modelling (beyond the strategic level offered by Comet) shall need to consider Radlett Railfrieght as committed development.

Sustainability is at the core of the Hertforshire County Council Local Transport Plan, whilst the site has access to a rail station within reasonable walk distance, and you described on site the presence of local petrol filling station to the south that offered convenience shopping, the A5183 represents a significant point of severance to the south to such access. This shall need to be addressed within any application. We accepted that there were crossing facilities to the north of your site, but this arrangement would need to be reviewed (and local topography considered in siting of any new / replacement ped crossing) to enable access to such facilities.

At consultation stage with the District this Authority shall undertake a LTP4 compliance test, considering development locations against their sustainability characteristics. This pre-application advice does not go to the full detail (at this time) of undertaking an LTP4 compliance test, but identifies that the site is on the periphery of the Park Street built environment. Opportunities for sustainable travel to employment opportunities in St Albans are limited presently by the poor quality provision for pedestrians / cyclists at the Park Street roundabout. Park Street itself provides some limited shops / services (primary school), but the site is remote from these with inconsistent footway provision, and – as above – the A5183 is a point of severence for crossing to access the immediate shopping facility.

Park Street station accessibility is limited – I advised that our principle rail officer may be able to provide details of National Rails Station Improvement Plan for the area, which your development may wish to consider. My colleagues details in this respect are;

Val.Male@hertfordshire.gov.uk

If any development proposals are found to be acceptable to this Authority I described our Policy in respect of developer contributions – these may be found here;

https://www.hertfordshire.gov.uk/about-the-council/freedom-of-information-and-council-data/open-data-statistics-about-hertfordshire/who-we-are-and-what-we-do/property/planning-obligations-guidance.aspx

This document describes the 'initial' calculation applied to any development within a non-CIL charging authority area.

The emerging South Central Growth and Transport Plan (awaiting publication following public consultation) sets out the iniatives and schemes that any contributions would be considered against. I can advise that there are a number of scheme proposals within this Policy document that would reasonably meet the statutory tests justifying the negotiation of such sums, and therefore you are advised that it is likely that such a recommendation would be forthcoming.

Noting HCCs policy on road adoption – the extent to which roads would be adopted is limited within your site. It may be that the entrance (spine) road may be considered for adoption, but any parking courts, cul-de-sacs etc would be expected to remain private.

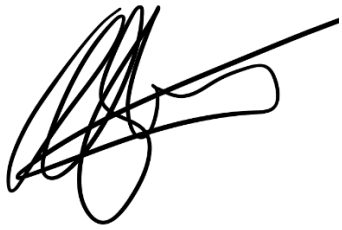
I believe that this provides a summary of the key points of discussion, I shall be happy to provide additional comments on review of the agreed meeting note if you wish.

It is necessary for me to conclude with observing that in accordance with Hertfordshire County Councils Highways DM Protocol for pre-application advice (http://www.hertsdirect.org/docs/pdf/h/hwaysprotocol.pdf) any advice given by County Council officers for transport pre-application enquiries does not constitute a formal response or decision of the Council with regards to future planning consents. Any views or opinions expressed are given in good faith, and to the best of ability, without prejudice to the formal consideration of any planning application, which will be subject to public consultation and ultimately decided by the Planning Authority. The County Council cannot guarantee that new issues will not be raised following submission of a planning application and consultation upon it. It should be noted that the weight given to pre-application advice will decline over time.

Please be aware that Hertfordshire County Council is subject to requirements under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. Where the County Council receives a request to disclose any information in relation to this discussion, it will notify and consult with you concerning its possible release. However, the County Council reserves the right to disclose any such information it deems appropriate and shall be responsible for determining at its absolute discretion whether the information is exempt from disclosure in accordance with the EIR or FOIA.

Should you wish to discuss any of the matters set out, please do not hesitate to contact me.

Sincerely



Alan Story
DM Team Leader SW and Mid Herts

Appendix B. Proposed Site Layout

A0

PRIVATE

House Type	No of Bedrooms	SqFt	No	Total SqFt
2B.1	2	850	11	9350
2B BUNG	2	753	3	2259
3B.1	3	1001	22	22022
3B.3	3	1040	1	1040
3B.4	3	1180	2	2360
3B BUNG	3	1119	4	4476
4B.1	4	1375	11	15125
4B.2	4	1240	3	3720
TOTALS			57	60352

AFFORDABLE RENT

House Type	No of Bedrooms	SqFt	No	Total SqFt
1B FLAT	1	538	6	3228
1B BUNG	1	540	2	1080
2B FLAT	2	656	2	1312
2B FOG	2	656	1	656
2B FLAT	2	753	6	4518
2B BUNG	2	755	2	1510
3B5P	3	1001	7	7007
4B6P	4	1140	3	3420
TOTALS			29	22731

AFFORDABLE OWNERSHIP

House Type	No of Bedrooms	SqFt	No	Total SqFt
1B MAS	1	624	2	1248
2B4P	2	850	4	3400
3B5P	3	1001	3	3003
TOTALS			9	7651

SITE TOTALS	95	105814

- Site Boundary
- 26 Plot Number
- 2B House Type
- Affordable Rent
- Affordable Ownership
- Self Build
- Bus Stop
- 30 & 40mph Speed Zones
- Root Protection Area
- RW Retaining Wall
- POS Public Open Space
- VIS Visitor Parking
- BC Bin Collection
- SUDS Sustainable Drainage Systems

NEW SIGNALISED PEDESTRIAN CROSSING
PEDESTRIAN LINK
POS
SUB-STATION
LINE OF BELOW GROUND ELECTRIC CABLE
ELECTRIC SUB STATION
SHARED SURFACE
LINE OF BELOW GROUND FOUL DRAIN
SUDS
CYCLE
40 MPH
30 MPH
PLAY
SIDE ASPECT ELEVATION
STEPPED PEDESTRIAN LINK
LANDSCAPE BUFFER
WATLING STREET
GARDEN
75.3m
82.0m
Filling Station
Path
Shelter

Romsey
T: 01794 367703
F: 01794 367276

Portishead
T: 01275 407000
F: 01794 367276

Camberley
T: 01276 749050
F: 01794 367276

www.thrivearchitects.co.uk

Rev	Description	Date	Au	Ch
P1	Preliminary Issue	25.11.21	PR/AA	PR/--
P2	Added dormers to apartments, sub-station and moved signalised pedestrian crossing	08.12.21	PR/--	--/--
P3	Amendments to SuDS	13.12.21	PR/AA	PR/--

Project	Land West of Watling Street, Park Street
Drawing	Illustrative Layout - 01
Client	M SCOTT PROPERTIES LTD
Job no.	SCOT210806
Dwg no.	IL-01
Date	25.11.21
Rev.	P3
Author	PR/AA
Checked	PR/-
Scale	1:500@A0
Status	PRELIMINARY
Office	Romsey
Client ref.	-

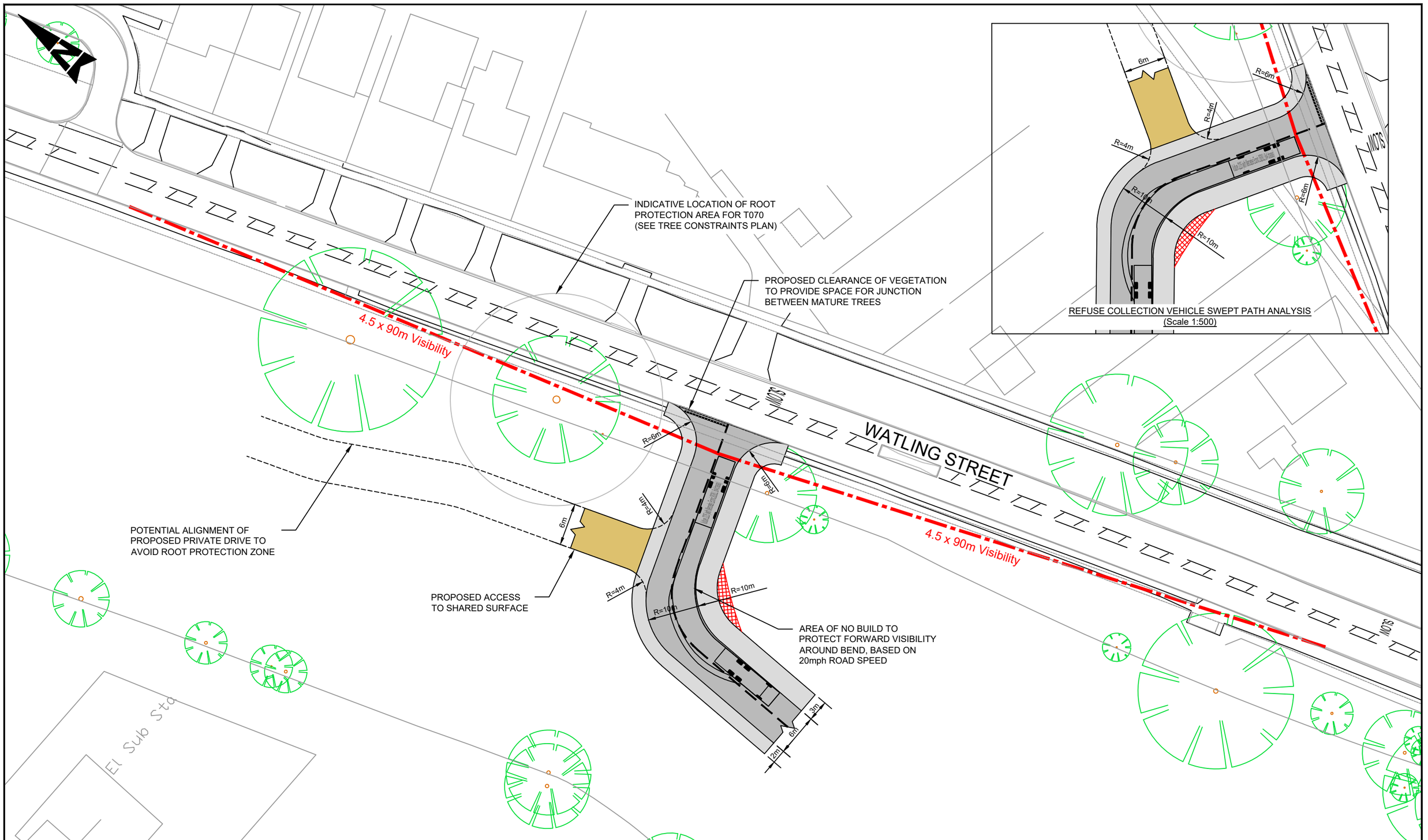
thrive. architects

Appendix C. Proposed Site Access Arrangement

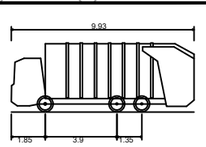
CLASSIFICATION - Base Line (Low Risk)

100 Millimetres 0 10

DO NOT SCALE



REFUSE COLLECTION VEHICLE SWEPT PATH ANALYSIS
(Scale 1:500)



Vulture 2225 (with Mercedes Econic 2628LL 6x4 chassis)

Overall Length	9.930m
Overall Width	2.490m
Overall Body Height	3.749m
Min Body Ground Clearance	0.302m
Track Width	2.490m
Lock to lock time	4.00s
Wall to Wall Turning Radius	9.100m

NOTES:
1. VISIBILITY SPLAY OF 45m HAS BEEN DRAWN TO ACCOMMODATE A 40MPH ROAD SPEED.
2. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.

Description	Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
FOOTWAY AND VISIBILITY SPLAY CHANGED	S0	P1.5	CLS	LB	CY	CY	14/01/22
LOCATION OF ACCESS ADAPTED/ ROOT PROTECTION AREA	S0	P1.4	CLS	LB	CY	CY	21/09/21
NOTES CHANGED & ADDED	S0	P1.3	CLS	LB	CY	CY	--/--/--
ACCESS LOCATION CHANGED	S0	P1.2	CLS	LB	CY	CY	--/--/--
DRAWING CREATED	S0	P1.1	CLS	LB	CY	CY	--/--/--

Drawing Suitability: FOR INFORMATION

Status: S0

ATKINS
Member of the SNC-Lavalin Group
5 Wellbrook Court
Girton Road
Cambridge
Cambridgeshire
CB3 0NA
Tel: +44 (0)1223 276002
Fax:+44 (0)1223 277529
www.atkinsglobal.com

Client: SCOTT PROPERTIES

Project Title: PARK STREET ST ALBANS

Drawing Title: PARK STREET ST ALBANS PROPOSED SITE ACCESS

Drawing Number: Project 5153233 - Originator ATK - Volume GEN - Location PRKST - Type DR - Role C - Number 000001

Original Size: A3 | Scale: 1:500 | Project Ref. No: 5153233 | Sheet: 1 of 1 | Rev: P1.5

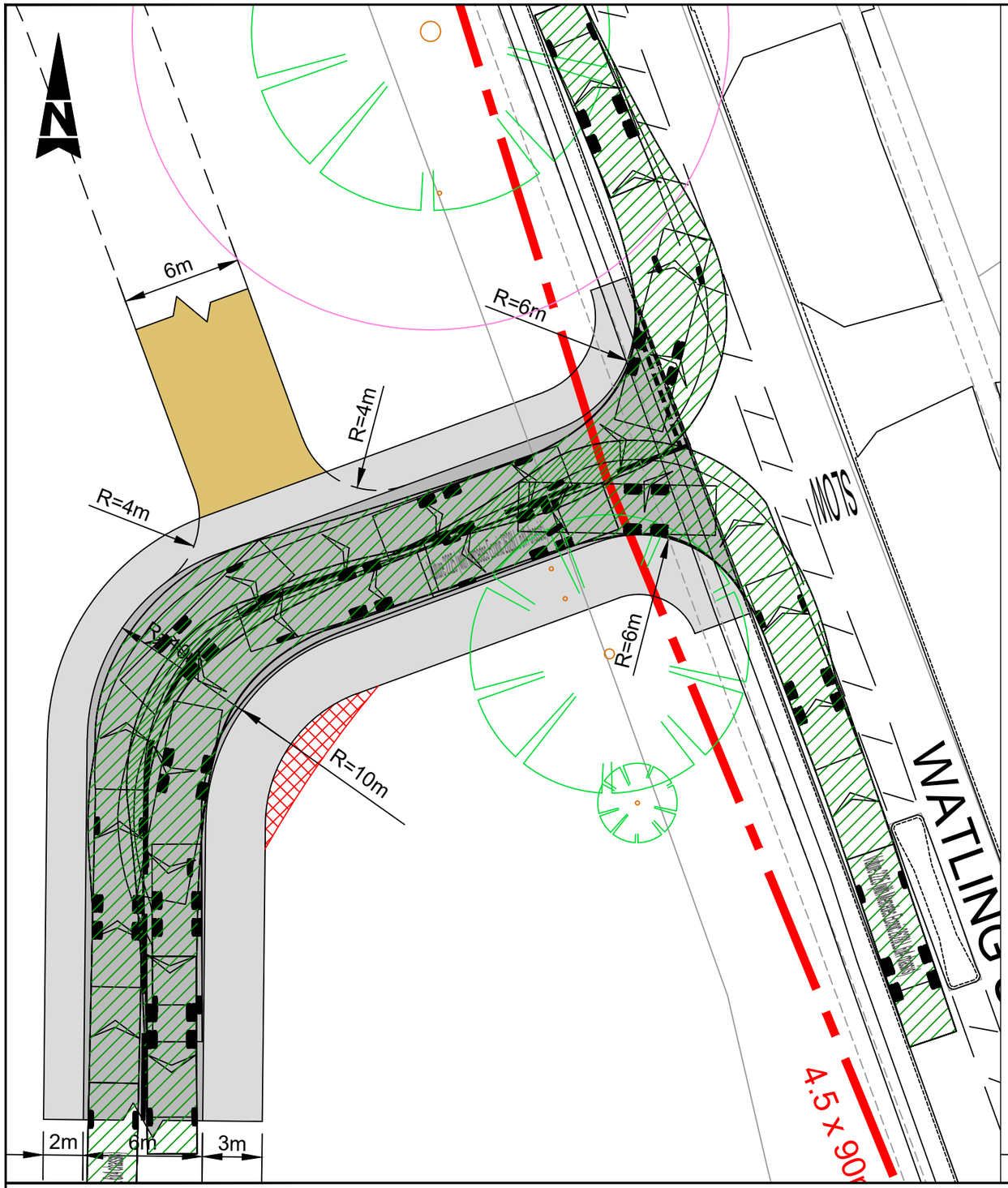
File: P:\GBCBA\HANDT\TP\HB\PROJECTS\5153233- M SCOTT PROPERTIES -YOUN8902\PARK STREET - ST ALBANS\40 - TECHNICAL\CAD\DR\5153233-ATK-GEN-PRKST-DR-C-0001_P1.5.DWG . Plotted: 13/01/2022 17:51:09 By: SULL9336

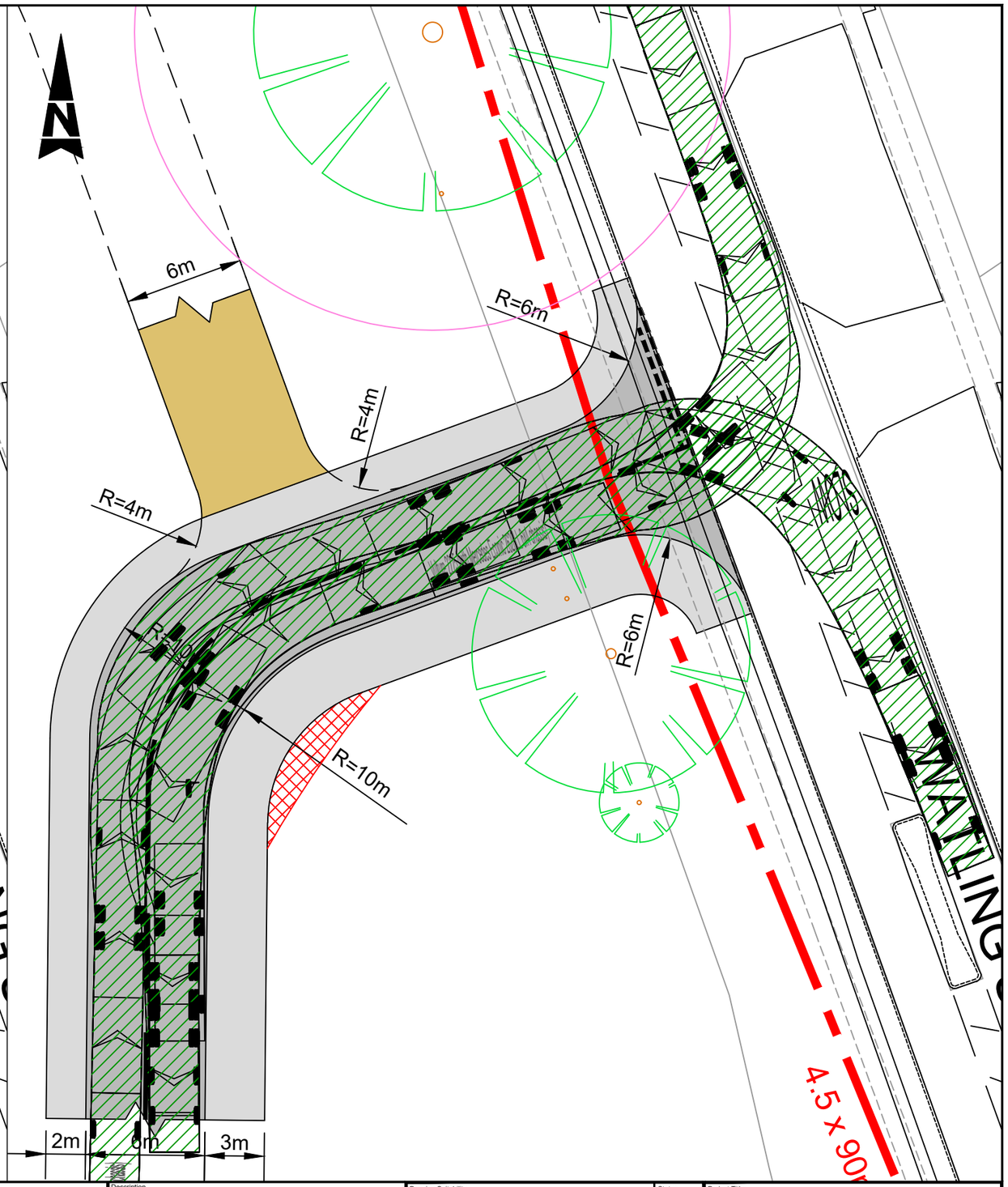
Appendix D. Swept Path Analysis

CLASSIFICATION - Base Line (Low Risk)

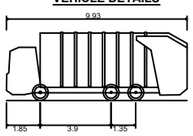
Millimetres 0 10 100

DO NOT SCALE





VEHICLE DETAILS



Vulture 2225 (with Mercedes Econic 2628LL 6x4 chassis)	
Overall Length	9.930m
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Overall Body Height	3.749m
Min Body Ground Clearance	0.302m
Track Width	2.490m
Lock to lock time	4.00s
Wall to Wall Turning Radius	9.100m

Description	Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
DRAWING UPDATED	S0	P01.2	CLS	LB	CY	CY	24/01/22
DRAWING CREATED	S0	P01.1	AJ	---	---	---	--/--/--

Drawing Suitability: FOR INFORMATION

Status: S0

ATKINS
Member of the SNC-Lavalin Group
5 Wellbrook Court
Girton Road
Cambridge
Cambridgeshire
CB3 0NA
Tel: +44 (0)1223 276002
Fax: +44 (0)1223 277529
www.atkinsglobal.com

Client: SCOTT PROPERTIES

Project Title: PARK STREET ST ALBANS

Drawing Title: SWEPT PATH ANALYSIS 9.93m Standard Refuse Vehicle

Drawing Number: Project 5153233 - Originator ATK - Volume GEN - Location PRKST - Type DR - Role C - Number 000002

Original Size:	Scale:	Project Ref. No:	Sheet:	Rev
A3	1:250	5153233	1 of 1	P01.2

File: P:\GBCBA\HANDT\TP\HB\PROJECTS\5153233- M SCOTT PROPERTIES -YOUN8902\PARK STREET - ST ALBANS\40 - TECHNICAL\CAD\DR\5153233-ATK-GEN-PRKST-DR-C-0002_P1.2.DWG . Plotted: 24/01/2022 10:20:29 By: SULL9336

Appendix E. TRICS Analysis

Calculation Reference: AUDIT-803418-210825-0810

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	4 days
	KC	KENT	3 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	3 days
03	SOUTH WEST		
	SM	SOMERSET	2 days
04	EAST ANGLIA		
	NF	NORFOLK	3 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	2 days
09	NORTH		
	DH	DURHAM	1 days
11	SCOTLAND		
	HI	HIGHLAND	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 10 to 918 (units:)
Range Selected by User: 25 to 1000 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 08/10/20

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

Selected survey days:

Tuesday	10 days
Wednesday	10 days
Thursday	6 days

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

Selected survey types:

Manual count	26 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	21
Village	5

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

Secondary Filtering selection:

Use Class:

C3	26 days

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

Population within 500m Range:
All Surveys Included
Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	9 days
10,001 to 15,000	6 days
15,001 to 20,000	7 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	6 days
50,001 to 75,000	7 days
75,001 to 100,000	7 days
125,001 to 250,000	5 days

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

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	20 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	12 days
No	14 days

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

PTAL Rating:

No PTAL Present	26 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 CH-03-A-10 SEMI-DETACHED & TERRACED CHESHIRE
MEADOW DRIVE
NORTHWICH
BARNTON
Edge of Town
Residential Zone
Total No of Dwellings: 40
Survey date: TUESDAY *04/06/19* *Survey Type: MANUAL*

2 CH-03-A-11 TOWN HOUSES CHESHIRE
LONDON ROAD
NORTHWICH
LEFTWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 24
Survey date: THURSDAY *06/06/19* *Survey Type: MANUAL*

3 DH-03-A-01 SEMI DETACHED DURHAM
GREENFIELDS ROAD
BISHOP AUCKLAND

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 50
Survey date: TUESDAY *28/03/17* *Survey Type: MANUAL*

4 DS-03-A-02 MIXED HOUSES DERBYSHIRE
RADBOURNE LANE
DERBY

Edge of Town
Residential Zone
Total No of Dwellings: 371
Survey date: TUESDAY *10/07/18* *Survey Type: MANUAL*

5 ES-03-A-05 MIXED HOUSES & FLATS EAST SUSSEX
RATTLE ROAD
NEAR EASTBOURNE
STONE CROSS
Edge of Town
Residential Zone
Total No of Dwellings: 99
Survey date: WEDNESDAY *05/06/19* *Survey Type: MANUAL*

6 HC-03-A-18 HOUSES & FLATS HAMPSHIRE
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 62
Survey date: TUESDAY *29/11/16* *Survey Type: MANUAL*

7 HC-03-A-21 TERRACED & SEMI-DETACHED HAMPSHIRE
PRIESTLEY ROAD
BASINGSTOKE
HOUNDMILLS
Edge of Town
Residential Zone
Total No of Dwellings: 39
Survey date: TUESDAY *13/11/18* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 HC-03-A-22 MIXED HOUSES HAMPSHIRE
BOW LAKE GARDENS
NEAR EASTLEIGH
BISHOPSTOKE
Edge of Town
Residential Zone
Total No of Dwellings: 40
Survey date: WEDNESDAY *31/10/18* *Survey Type: MANUAL*

9 HC-03-A-23 HOUSES & FLATS HAMPSHIRE
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 62
Survey date: TUESDAY *19/11/19* *Survey Type: MANUAL*

10 HI-03-A-14 SEMI-DETACHED & TERRACED HIGHLAND
KING BRUDE ROAD
INVERNESS
SCORGUIE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 40
Survey date: WEDNESDAY *23/03/16* *Survey Type: MANUAL*

11 KC-03-A-03 MIXED HOUSES & FLATS KENT
HYTHE ROAD
ASHFORD
WILLESBOROUGH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 51
Survey date: THURSDAY *14/07/16* *Survey Type: MANUAL*

12 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total No of Dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

13 KC-03-A-08 MIXED HOUSES KENT
MAIDSTONE ROAD
CHARING

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 159
Survey date: TUESDAY *22/05/18* *Survey Type: MANUAL*

14 LE-03-A-02 DETACHED & OTHERS LEICESTERSHIRE
MELBOURNE ROAD
IBSTOCK

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 85
Survey date: THURSDAY *28/06/18* *Survey Type: MANUAL*

15 NF-03-A-03 DETACHED HOUSES NORFOLK
HALING WAY
THETFORD

Edge of Town
Residential Zone
Total No of Dwellings: 10
Survey date: WEDNESDAY *16/09/15* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

16 NF-03-A-04 MIXED HOUSES NORFOLK
NORTH WALSHAM ROAD
NORTH WALSHAM

Edge of Town
Residential Zone
Total No of Dwellings: 70
Survey date: WEDNESDAY *18/09/19* *Survey Type: MANUAL*

17 NF-03-A-05 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 40
Survey date: THURSDAY *19/09/19* *Survey Type: MANUAL*

18 NY-03-A-13 TERRACED HOUSES NORTH YORKSHIRE
CATTERICK ROAD
CATTERICK GARRISON
OLD HOSPITAL COMPOUND
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 10
Survey date: WEDNESDAY *10/05/17* *Survey Type: MANUAL*

19 SC-03-A-06 MIXED HOUSES & FLATS SURREY
AMLETS LANE
CRANLEIGH

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 116
Survey date: THURSDAY *08/10/20* *Survey Type: MANUAL*

20 SF-03-A-05 DETACHED HOUSES SUFFOLK
VALE LANE
BURY ST EDMUNDS

Edge of Town
Residential Zone
Total No of Dwellings: 18
Survey date: WEDNESDAY *09/09/15* *Survey Type: MANUAL*

21 SM-03-A-02 MIXED HOUSES SOMERSET
HYDE LANE
NEAR TAUNTON
CREECH SAINT MICHAEL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 42
Survey date: TUESDAY *25/09/18* *Survey Type: MANUAL*

22 SM-03-A-03 MIXED HOUSES SOMERSET
HYDE LANE
NEAR TAUNTON
CREECH ST MICHAEL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 41
Survey date: TUESDAY *25/09/18* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

23	ST-03-A-07	DETACHED & SEMI-DETACHED		STAFFORDSHIRE
	BEACONSIDE			
	STAFFORD			
	MARSTON GATE			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		248	
	Survey date: WEDNESDAY		*22/11/17*	*Survey Type: MANUAL*
24	WS-03-A-08	MIXED HOUSES		WEST SUSSEX
	ROUNDSTONE LANE			
	ANGMERING			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		180	
	Survey date: THURSDAY		*19/04/18*	*Survey Type: MANUAL*
25	WS-03-A-10	MIXED HOUSES		WEST SUSSEX
	TODDINGTON LANE			
	LITTLEHAMPTON			
	WICK			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		79	
	Survey date: WEDNESDAY		*07/11/18*	*Survey Type: MANUAL*
26	WS-03-A-11	MIXED HOUSES		WEST SUSSEX
	ELLIS ROAD			
	WEST HORSHAM			
	S BROADBRIDGE HEATH			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		918	
	Survey date: TUESDAY		*02/04/19*	*Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
WS-03-A-07	NA

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	26	122	0.076	26	122	0.341	26	122	0.417
08:00 - 09:00	26	122	0.141	26	122	0.388	26	122	0.529
09:00 - 10:00	26	122	0.143	26	122	0.161	26	122	0.304
10:00 - 11:00	26	122	0.119	26	122	0.150	26	122	0.269
11:00 - 12:00	26	122	0.128	26	122	0.151	26	122	0.279
12:00 - 13:00	26	122	0.149	26	122	0.140	26	122	0.289
13:00 - 14:00	26	122	0.157	26	122	0.159	26	122	0.316
14:00 - 15:00	26	122	0.161	26	122	0.179	26	122	0.340
15:00 - 16:00	26	122	0.253	26	122	0.166	26	122	0.419
16:00 - 17:00	26	122	0.270	26	122	0.156	26	122	0.426
17:00 - 18:00	26	122	0.368	26	122	0.146	26	122	0.514
18:00 - 19:00	26	122	0.310	26	122	0.159	26	122	0.469
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.275			2.296			4.571

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	10 - 918 (units:)
Survey date date range:	01/01/15 - 08/10/20
Number of weekdays (Monday-Friday):	26
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	5
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix F. Traffic Analysis

Residential Development at Park Street, St. Albans

Trip Generation

Proposed development: 95

Vehicle Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0.141	0.388	0.368	0.146	2.275	2.296

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	13	37	35	14	216	218
Totals		13	37	35	14	216	218

Person Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0.218	0.826	0.628	0.257	3.916	3.93

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	21	78	60	24	372	373
Totals		21	78	60	24	372	373

Private Car Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0.121	0.364	0.342	0.131	1.985	2.008

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	11	35	32	12	189	191
Totals		11	35	32	12	189	191

Cyclists Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0.003	0.015	0.01	0.008	0.053	0.053

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	1	1	1	5	5
Totals		0	1	1	1	5	5

Pedestrians Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0.04	0.14	0.108	0.038	0.459	0.472

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	4	13	10	4	44	45

Totals		4	13	10	4	44	45

Public Transport Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	0.026	0.017	0.005	0.113	0.117

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	2	2	0	11	11

Totals		0	2	2	0	11	11

Rail Passengers Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	0.011	0.008	0	0.029	0.03

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	1	1	0	3	3

Totals		0	1	1	0	3	3

Bus Passengers Trip Rate and Trips

Trip Rates		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	0.014	0.008	0.003	0.082	0.081

Trips		AM		PM		Daily	
Use	GFA/Res.	In	Out	In	Out	In	Out
Houses pvt	95	0	1	1	0	8	8

Totals		0	1	1	0	8	8

Park Street (NTS) Analysis

	Trips (Trip gen)		
	AM	PM	Daily
Person Trips	99	84	745
Vehicular Trips	50	49	434

Person Trips			
AM	PM	Daily	
99	84	745	

Vehicular Trips		
AM	PM	Daily
50	49	434

Journey Purpose	AM	PM	Daily
Work	23%	35%	30%
Education	52%	5%	23%
Shopping	4%	12%	9%
Personal Business	4%	20%	16%
Visit/leisure	3%	20%	15%
Other	4%	8%	7%
	100%	100%	100%

AM	PM	Daily
23	29	225
52	4	170
4	10	69
4	17	121
14	17	109
3	7	51

AM	PM	Daily
12	17	131
26	2	99
2	6	40
2	10	70
7	10	64
2	4	30

Travel for Work - From Census 2011

Distribution	Directions	%
Park Street	North	55%
Park Street	South	45%

24	31	160
AM	PM	Daily
13	17	89
11	14	71

12	18	93
AM	PM	Daily
7	10	51
5	8	42

Travel to Schools

Distribution	Directions	Primary	Secondary	Ave.
Park Street	North	57%	100%	78%
Park Street	South	43%	0%	22%

52	4	170
AM	PM	Daily
40	3	133
11	1	37

26	2	99
AM	PM	Daily
20	2	77
6	1	21

Schools - Primary

	Primary	Dist	TT	Factor	%	
N	Killigrew	2.5	9	2.92	9%	N
N	Watling View	0.85	5	3.16	10%	N
N	St Adrians	1.1	4	6.63	21%	
N	Mandeville	1.3	5	5.61	17%	57%
S	Saplings Preschool	2.4	9	3.04	9%	43%
S	How Wood	1.5	6	4.86	15%	
S	Park Street Primary	1.2	4	6.08	19%	
				32.28	100%	

Schools - Secondary

Secondary	Dist	TT	Factor	%	
Marlboroug	NA	NA	NA	NA	
St. Columb	NA	NA	NA	NA	100%

**all secondary school to north of site

Travel - Other

Distribution	Directions	AM	PM	Daily
Park Street	North	75%	68%	71%
Park Street	South	25%	31%	28%

25	50	350
AM	PM	Daily
18	13	250
17	16	98

13	29	204
AM	PM	Daily
9	7	145
9	9	57

Travel Other

	AM	16%	56%	12%	16%		
	Destination	Shopping	Pers Bus	Visit/Leis	Other	Totals	
N	Park Street	2%	4%	2%	2%	10%	
N	St Albans	10%	40%	5%	10%	65%	75%
S	London	1%	3%	1%	1%	6%	
S	Watford	1%	3%	1%	1%	6%	
S	South Herts	1%	4%	2%	1%	8%	
S	West Herts	1%	2%	1%	1%	5%	25%
	PM	20%	33%	33%	13%		
	Destination	Shopping	Pers Bus	Visit/Leis	Other	Totals	
N	Park Street	3%	5%	5%	2%	15%	
N	St Albans	9%	19%	19%	6%	53%	68%
S	London	2%	3%	3%	1%	9%	
S	Watford	2%	3%	3%	1%	9%	
S	South Herts	3%	2%	2%	2%	9%	
S	West Herts	1%	1%	1%	1%	4%	31%

Journey b	Shopping	Pers Bus	Visit/Leis	Other	
AM	4%	14%	3%	4%	0.25
	0.16	0.56	0.12	0.16	
PM	12%	20%	20%	8%	0.60
	0.20	0.33	0.33	0.13	

Person Trips

AM - Distribution	Work	Educ.	Other	Totals
Park Street - **North**	13%	41%	18%	71%
Park Street - **South**	10%	11%	7%	29%

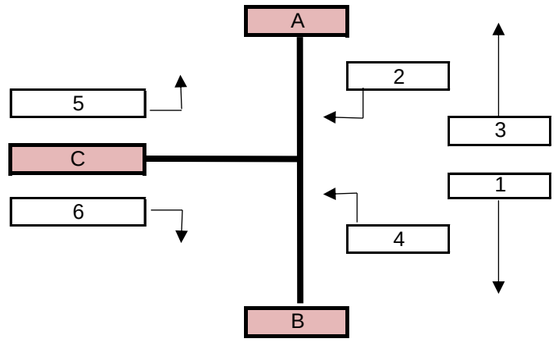
PM - Distribution	Work	Educ.	Other	Totals
Park Street - **North**	19%	4%	43%	66%
Park Street - **South**	16%	1%	17%	34%

Daily Distribution	Work	Educ.	Other	Totals
Park Street - **North**	17%	18%	33%	68%
Park Street - **South**	13%	5%	13%	32%

Summary Table = Trips by Dist. By Time Period.

	Pers. Trips	Veh. Trips
Total	99	50
AM - North	71	36
AM - South	28	14
Total	84	49
PM - North	56	32
PM - South	28	16
Total	745	434
Daily - North	507	296
Daily - South	235	137

Park Street



Proposed Development

	In	Out
AM	13	37
PM	35	14
Daily	216	218

Tempro			
2021 to 2026	AM	PM	
Production	1.0036	1.0142	St Albans 019
Attraction	1.0293	1.0326	Weekday

Vehicle Distributions

	Access Distr
Park Street (N)	0.7
Park Street (S)	0.3

Park Street	AM	PM
North	71%	66%
South	29%	34%

AM Weekday Peak 8:00 to 9:00	AM	A to B	A to C	B to A	B to C	C to A	C to B
Scenario		**1**	**2**	**3**	**4**	**5**	**6**
Base 2021	Base 2021 AM	466	0	470	0	0	0
Base 2026	Base 2026 AM	480	0	484	0	0	0
Development Traffic	Development Traffic AM	0	4	0	9	26	11
2026 with Development	2026 with Development AM	480	4	484	9	26	11

PM Weekday Peak 16:00 to 17:00	PM	A to B	A to C	B to A	B to C	C to A	C to B
Scenario		**1**	**2**	**3**	**4**	**5**	**6**
Base 2021	Base 2021 PM	387	0	450	0	0	0
Base 2026	Base 2026 PM	400	0	465	0	0	0
Development Traffic	Development Traffic PM	0	10	0	24	10	4
2026 with Development	2026 with Development PM	400	10	465	24	10	4

HGV %	Northbound	Southbound
AM Weekday Peak 8:00 to 09:00	10%	13%
PM Weekday Peak 16:00 to 17:00	13%	15%

Appendix G. Junction Modelling Results

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Park Street-Standard Priority Junction_v1.0.j9
Path: P:\INGUA\H & T\TP\Projects\5153233- M Scott Properties -YOUN8902\400 Technical Information\406 Forecast Model
Report generation date: 2021-12-07 6:01:29 PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Park Street - 2026 with Development							
Stream B-AC	0.1	9.96	0.11	A	0.0	8.97	0.04	A
Stream C-AB	0.0	4.72	0.01	A	0.1	5.07	0.04	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

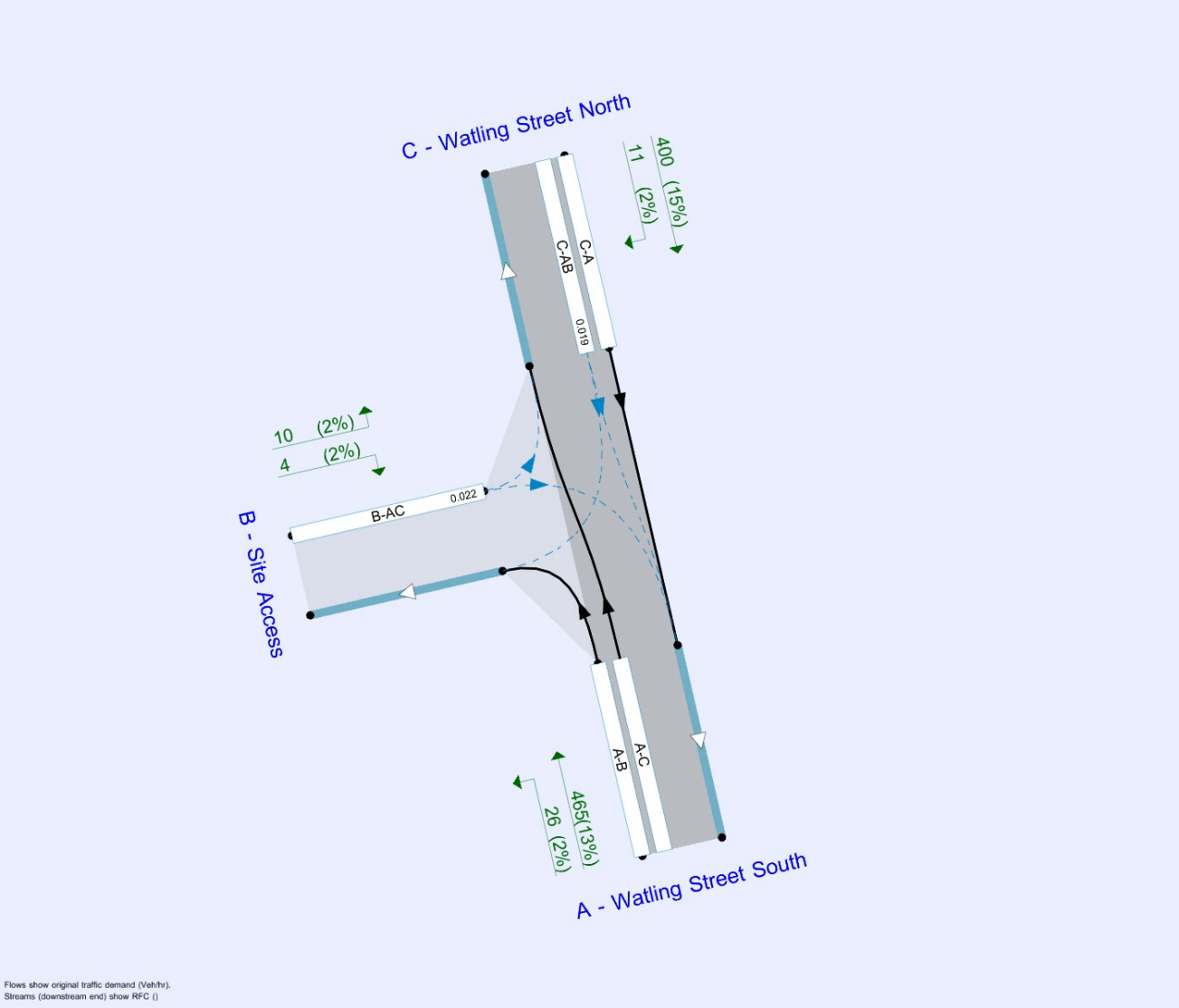
File summary

File Description

Title	Proposed Site Access
Location	
Site number	
Date	2021-12-02
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	WSATKINS\SAIG1865
Description	Park Street St Albans

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 with Development	AM	ONE HOUR	07:45	09:15	15
D2	2026 with Development	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Park Street	100.000

Park Street - 2026 with Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Watling Street North - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Park Street	T-Junction	Two-way		0.39	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Watling Street South		Major
B	Site Access		Minor
C	Watling Street North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Watling Street North	5.68			122.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane	3.40	33	31

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	523	0.097	0.244	0.154	0.349
1	B-C	669	0.104	0.263	-	-
1	C-B	645	0.253	0.253	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 with Development	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street South		✓	494	100.000
B - Site Access		✓	39	100.000
C - Watling Street North		✓	484	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Watling Street South	B - Site Access	C - Watling Street North
From	A - Watling Street South	0	10	484
	B - Site Access	12	0	27
	C - Watling Street North	480	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Watling Street South	B - Site Access	C - Watling Street North
From	A - Watling Street South	0	2	10
	B - Site Access	2	0	2
	C - Watling Street North	13	2	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Watling Street South	372	408
	B - Site Access	29	30
	C - Watling Street North	364	411
08:00-08:15	A - Watling Street South	444	488
	B - Site Access	35	36
	C - Watling Street North	435	491
08:15-08:30	A - Watling Street South	544	597
	B - Site Access	43	44
	C - Watling Street North	532	601
08:30-08:45	A - Watling Street South	544	597
	B - Site Access	43	44
	C - Watling Street North	532	601
08:45-09:00	A - Watling Street South	444	488
	B - Site Access	35	36
	C - Watling Street North	435	491
09:00-09:15	A - Watling Street South	372	408
	B - Site Access	29	30
	C - Watling Street North	364	411

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.11	9.96	0.1	A
C-AB	0.01	4.72	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	480	0.062	30	0.1	8.144	A
C-AB	5	827	0.007	5	0.0	4.696	A
C-A	406			406			
A-B	8			8			
A-C	401			401			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	452	0.079	36	0.1	8.813	A
C-AB	7	868	0.009	7	0.0	4.502	A
C-A	483			483			
A-B	9			9			
A-C	479			479			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	413	0.106	44	0.1	9.951	A
C-AB	11	927	0.012	11	0.0	4.264	A
C-A	590			590			
A-B	11			11			
A-C	586			586			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	413	0.106	44	0.1	9.957	A
C-AB	11	927	0.012	11	0.0	4.280	A
C-A	590			590			
A-B	11			11			
A-C	586			586			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	452	0.079	36	0.1	8.819	A
C-AB	7	868	0.009	7	0.0	4.540	A
C-A	483			483			
A-B	9			9			
A-C	479			479			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	480	0.062	30	0.1	8.159	A
C-AB	5	827	0.007	5	0.0	4.717	A
C-A	406			406			
A-B	8			8			
A-C	401			401			

Park Street - 2026 with Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	C - Watling Street North - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Park Street	T-Junction	Two-way		0.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2026 with Development	PM	ONE HOUR	15:45	17:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Watling Street South		✓	491	100.000
B - Site Access		✓	14	100.000
C - Watling Street North		✓	411	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Watling Street South	B - Site Access	C - Watling Street North
From	A - Watling Street South	0	26	465
	B - Site Access	4	0	10
	C - Watling Street North	400	11	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Watling Street South	B - Site Access	C - Watling Street North
From	A - Watling Street South	0	2	13
	B - Site Access	2	0	2
	C - Watling Street North	15	2	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
15:45-16:00	A - Watling Street South	370	416
	B - Site Access	11	11
	C - Watling Street North	309	355
16:00-16:15	A - Watling Street South	441	496
	B - Site Access	13	13
	C - Watling Street North	369	424
16:15-16:30	A - Watling Street South	541	608
	B - Site Access	15	16
	C - Watling Street North	453	519
16:30-16:45	A - Watling Street South	541	608
	B - Site Access	15	16
	C - Watling Street North	453	519
16:45-17:00	A - Watling Street South	441	496
	B - Site Access	13	13
	C - Watling Street North	369	424
17:00-17:15	A - Watling Street South	370	416
	B - Site Access	11	11
	C - Watling Street North	309	355

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	8.97	0.0	A
C-AB	0.04	5.07	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	489	0.022	11	0.0	7.673	A
C-AB	15	782	0.019	15	0.0	5.041	A
C-A	340			340			
A-B	20			20			
A-C	396			396			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	463	0.028	13	0.0	8.161	A
C-AB	21	813	0.025	21	0.0	4.898	A
C-A	403			403			
A-B	24			24			
A-C	472			472			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	16	425	0.037	16	0.0	8.966	A
C-AB	30	859	0.035	30	0.1	4.726	A
C-A	489			489			
A-B	29			29			
A-C	579			579			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	16	425	0.037	16	0.0	8.968	A
C-AB	30	859	0.035	30	0.1	4.746	A
C-A	489			489			
A-B	29			29			
A-C	579			579			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	463	0.028	13	0.0	8.162	A
C-AB	21	813	0.025	21	0.0	4.945	A
C-A	403			403			
A-B	24			24			
A-C	472			472			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	489	0.022	11	0.0	7.677	A
C-AB	15	782	0.019	15	0.0	5.068	A
C-A	340			340			
A-B	20			20			
A-C	396			396			

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