

Arcadis LLP

**Ruislip High School Expansion
Sidmouth Drive, Ruislip
Transport Assessment**

August 2017

Armstrong House,
The Flemingate Centre,
Beverley,
HU17 0NW

📞 01482 679 911

✉️ info@local-transport-projects.co.uk

🌐 www.local-transport-projects.co.uk

Registered No. 5295328

Arcadis LLP

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August 2017

Client Commission

Client:	Arcadis LLP	Date Commissioned:	February 2017
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LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

Team Member	LTP Designation	Qualifications
Andy Mayo	Director (Project Manager)	BA(Hons) MSc FIHE MCIHT CMILT
Steven Windass	Head of Transport Planning	BSc(Hons) MSc (Eng) MCIHT MIHE
Mike Raynor	Senior Transport Planner	BA(Hons) MIHE
Sophie Lee	Assistant Transport Planner	-

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RUISLIP HIGH SCHOOL EXPANSION

SIDMOUTH DRIVE, RUISLIP

TRANSPORT ASSESSMENT

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EXECUTIVE SUMMARY

This Transport Assessment (TA) provides a detailed appraisal of transport aspects associated with proposals to provide an extension to Ruislip High School, located to the south of Sidmouth Drive in Ruislip, London Borough of Hillingdon.

The proposals are expected to increase the pupil roll from 1,116 to 1,302, and the Full Time Equivalent (FTE) staff numbers from 105.2 to 122.7. The proposals involve the construction of a new extension to the eastern side of the site to provide additional facilities, including a number of new classrooms and a social space for sixth form students. No changes are proposed to the existing access arrangements. A total of 79 car parking spaces are currently provided at the site with no proposals to increase the number of parking spaces at the school.

The school is located in a sustainable location, with good access to the local pedestrian network. There are good quality footways on both sides of the carriageway on local streets, with dropped kerbs and tactile paving provided at most local junctions. The site is located within a reasonable cycle ride of a large residential catchment, including Ruislip, Ickenham and Eastcote. Frequent bus services are available from local stops and London Underground services are available from Ruislip Gardens Station approximately a 400m walk from the site.

A road casualty study showed that 8 collisions occurred within the local study area around the proposed development site during the 5 year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements generated by the extended school, therefore it is considered that there are no existing road safety issues pertinent to the expansion of the school.

The proposed extension could be expected to generate up to 77 two-way vehicle trips during the AM peak hour should the school operate with the proposed pupil roll, representing an increase of 11 two-way vehicle trips relative to the existing pupil roll at the school. A total of 40 two-way vehicle trips are expected to be generated during the PM peak hour should the school operate with the proposed pupil roll, representing an increase in 6 two-way vehicle trips. The turning count data captured pupil, staff and visitor movements at the school access/egress junctions.

The likely pupil modal split has been derived from a travel survey undertaken in May 2017. A total of 62.2% of pupils could be expected to walk to school. The staff modal split has been based on local travel to work data and indicates that under two thirds of staff (60.5%) could be expected to travel to work by car.

Parking beat surveys were undertaken on streets local to the site, although the change in the level of on-street parking around school start and finish times did not appear to be notable. Generally the level of on-street parking on the assessed streets did not notably increase around school start and finish times suggesting that there were only a small number of on-street pupil drop-offs/pick-ups.

Based on the assessments of this TA, it is considered that the proposed expansion would not be expected to have a material impact on the operation of the local highway network, and is therefore in accordance with the '*National Planning Policy Framework*' (NPPF).

This TA demonstrate that the proposed extension would not be expected to have a detrimental impact in road safety, traffic and highway terms.

1.0 INTRODUCTION

1.1 Background

- 1.1.1 Local Transport Projects Ltd has been commissioned to produce a Transport Assessment (TA) which provides a detailed appraisal of all transport impacts associated with the expansion of the existing Ruislip High School, located to the south of Sidmouth Drive in Ruislip, London Borough of Hillingdon.
- 1.1.2 A Travel Plan (LTP, 2017) that provides a strategy for encouraging sustainable travel at the expanded school site has been produced in conjunction with this TA as a separate document.
- 1.1.3 The Local Planning and Highway Authority for the site is the London Borough of Hillingdon Council (LBH).

1.2 Scope

- 1.2.1 The scope of this TA has been agreed with LBH (Ref: Peter Loveday) and has been produced in accordance with the Government's 'Planning Practice Guidance' (DCLG, 2014) and Transport for London's (TfL) 'Transport Assessment Guidance' (TfL, 2015), as outlined below:
 - **Executive Summary:** A non-technical summary of the report outlining the key outcomes of the assessment.
 - **Introduction & Description of Proposals:**
 - Description of the development site, including location and existing access arrangements;
 - Summary of relevant planning and allocation history for the site;
 - Description of the proposed development including site layout, pedestrian/cycle facilities and proposed access arrangements.
 - **Site Assessment:**
 - Site assessments to determine existing traffic conditions, such as posted speed limits, road restrictions, highway geometry, on-street parking restrictions and any other relevant features of the local area;
 - Assessment of the sustainable transport infrastructure (pedestrian, cycle and public transport) local to the site and identification of any opportunities for enhancing the accessibility of the site by sustainable modes, including a Public Transport Accessibility Level (PTAL) assessment;
 - Establish the baseline traffic situation during the AM and PM peak hours at the existing site access/egress junctions on Sidmouth Drive.
 - **Road Casualty Appraisal:** Examination of road collision records (5 year study period) and assessment of the road safety impact of the proposed development on the local highway network.

- **Traffic Impact:**
 - Calculation of the projected trip generation for the proposed development;
 - Consideration of any relevant consented developments within the local area and any committed changes to the surrounding highway network;
 - Assessment of the likely traffic impact of the proposed development on the operation of the local highway network. This will involve assessing the traffic generation of the proposals against the existing traffic flows on the local highway network and/or the typical threshold for assessment (30 two-way vehicle trips).
- **Access, Parking & Internal Layout:**
 - Description of the proposed access arrangements and internal layout of the site, including consideration of the proposed parking provision, access/servicing arrangements and suitability of the proposed access junction(s);
 - Parking beat surveys on the adjacent highway network within the vicinity of the site to examine the levels of current parking capacity during the morning and afternoon peak periods associated with the school, in order to identify the existing on street parking demand and residual capacity.
- **Conclusions:** Conclusions summarising the outcomes of the TA, including a commentary on the suitability of the proposals in terms of traffic impact and road safety.

1.2.2 This report has been prepared in accordance with the above scope and reference has been made to the following documents where appropriate:

- The London Plan - updated March 2016 (MoL, 2016);
- Transport Assessment Guidance (TfL, 2015);
- Hillingdon's Local Plan: Part 2 - Development Management Policies (LBH, 2015);
- Planning Practice Guidance (DCLG, 2014);
- Hillingdon's Local Plan: Part 1 - Strategic Policies (LBH, 2012);
- National Planning Policy Framework (DCLG, 2012);
- Mayor's Transport Strategy (GLA, 2010);
- Manual for Streets 2: Wider Application of the Principles (CIHT, 2010);
- Hillingdon Unitary Development Plan (UDP) - Saved Policies (LBH, 2007);
- Guidance on Transport Assessment (DfT, 2007a); and
- Manual for Streets (DfT, 2007b).

2.0 SITE BACKGROUND

2.1 Site Location & Existing Use

- 2.1.1 Ruislip High School is a 6 Form Entry (FE) school located within the Ruislip area of the London Borough of Hillingdon. It provides secondary school education to pupils aged between 11 and 18 years, with a current pupil roll of 1,116 pupils. It is understood that a total of 105.2 Full Time Equivalent (FTE) members of staff are employed by the school.
- 2.1.2 The school is approximately 1.8km to the south-east of Ruislip High Street. It is bound by Sidmouth Drive to the north, a mix of retail and flats form the western boundary, and existing playing fields form the southern and eastern boundaries. The approximate boundary of the school is shown in Figure 1:

Figure 1: Site Location



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- 2.1.3 The existing school buildings are largely located within the central part of the site, with soft play sports pitches located to the south and east and the staff car park to the west.
- 2.1.4 It is understood that the main school day commences at 08:15 and ends at 15:00, Monday to Thursday, with a finishing time of 14:35 on a Friday. It is also understood that the school runs additional sessions between 15:15 and 16:15 for some year 11-13 groups.

2.2 Planning History

- 2.2.1 It is understood that there have been no pertinent planning applications relating to the Ruislip High School site.

2.3 Development Proposals

- 2.3.1 This TA is based upon the proposals outlined on the site plan attached as Appendix 1. The proposals involve the construction of a new extension to the eastern side of the site to provide additional facilities, including a number of new classrooms and a new social space for sixth form students.
- 2.3.2 The existing and proposed pupil and staffing numbers of the school are outlined in Table 1:

Table 1: Proposed Changes to Pupil & Staffing Levels

Factor	Pupils		Staff (FTE)
Existing	900 (6FE School)	216 (Sixth Form)	105.2
Proposed	1,050 (7FE School)	252 (Sixth Form)	122.7
Proposed Change	+150	+36	+17.5
	+186 pupils		

- 2.3.3 The proposed changes outlined in Table 1 are based on a 1 FE increase, with an additional 36 pupils in the sixth form.
- 2.3.4 The school currently employs a total of 105.2 Full-Time Equivalent (FTE) and it is expected that the staffing numbers will increase to approximately 122.7 FTE staff in line with the increase in pupil numbers. The catchment of pupils at the school is expected to remain the same, with the additional demand for places understood to be generated by the local area.
- 2.3.5 It is understood that the opening hours of the school are expected to remain as existing under the proposals.

2.4 Access & Parking Arrangements

- 2.4.1 The school currently has a one-way clockwise (westbound) system in place which possesses separate access and egress points, taken from Sidmouth Drive to the north of the site. It provides access to the main entrance car park which features 25 parking spaces. There is a second parking area immediately to the west of the main school building for staff providing an additional 54 parking spaces, resulting in a total of 79 parking spaces.
- 2.4.2 There are approximately 50 cycle parking spaces at the school, with the increase expected to be provided in accordance with the LBH parking standards for secondary schools. Covered and secure cycle parking will be provided in conspicuous locations at the site for use by staff, pupils and visitors. The proposed development incorporates an increase in cycle parking provision at the site, from the existing 50 spaces, to a proposed level of 76 spaces, as discussed further in Section 6.1.

- 2.4.3 Pedestrian access is available via a number of access points from Sidmouth Drive, including a footway adjacent to the main car park access road. There is also pedestrian access available from the southern boundary of the school which can be accessed via the open space to the south, which in turn can be accessed via the A4180, Victoria Road and Sidmouth Drive; although it is understood that this gate is currently locked and unused.
- 2.4.4 The internal layout of the site has been designed to ensure that service/delivery vehicles can enter and exit the site in a forward gear, with testing based on the most onerous vehicle (refuse collection vehicle). Typically, the level of movements associated with servicing at a school is not significant as it is mainly related to supply deliveries, refuse collection and catering deliveries. Many of these more regular movements are likely to be undertaken by smaller vehicles and would not require a long duration stay on the site.
- 2.4.5 Servicing levels are expected to remain broadly the same as the existing levels. Although pupil numbers are to increase slightly on the current roll, the majority of servicing trips such as refuse collection, catering supply, post and stationery delivery will not increase pro-rata. For example, although the catering order may be larger, it is likely that the vehicle and frequency of delivery will remain as existing.

3.0 SITE ASSESSMENT

3.1 Introduction

- 3.1.1 This section provides a summary of the transport infrastructure local to Ruislip High School and the opportunities for sustainable modes of travel to/from the school. An assessment of the local highway network in the vicinity of the development site is provided below.

3.2 Local Highway Network

- 3.2.1 Vehicular access to the school will continue to be taken from Sidmouth Drive, which is a two-way single carriageway that is subject to a 20mph speed limit. It is approximately 600m in length and provides access to the A4180 (West End Road) to the south-west and Victoria Road to the north-east. Sidmouth Drive has a carriageway width of approximately 7.3m in the vicinity of the site. Mandatory 'School Keep Clear' markings enforced by cameras are evident on the southern side of Sidmouth Drive in the vicinity of the school access and egress points and on the northern side in the vicinity of Eilmar Montessori School & Day Nursery, which prohibit stopping Monday to Friday between 08:00 and 10:00 and 14:30 until 16:30. There are also single yellow line markings present in the vicinity of the junction with the A4180 (West End Road). Outside of these areas there are no other waiting restrictions along the road. There are a number of traffic calming features along Sidmouth Drive, including speed humps and priority build-outs which provide pedestrian crossing points. The road is also subject to a signed 7.5 tonne weight restriction except for access.

Photo 1: Sidmouth Drive



- 3.2.2 The A4180 (West End Road) is a two-way single carriageway that is subject to a 30mph speed limit and is approximately 9.5m in width within the vicinity of Sidmouth Drive. It provides access to the A312/B455/The Parkway/Yeading Lane roundabout to the south-east and the A404 to the north. The A4180 forms part of the Transport for London Road Network (TLRN) to the south of the junction with the A40.

Photo 2: A4180 (West End Road)

- 3.2.3 Thurlstone Road is a two-way single carriageway that is approximately 7.3m in width and is subject to a 30mph speed limit. Thurlstone Road is approximately 260m in length and connects with Torrington Road to the north-west and Sidmouth Drive to the south-east. There are no waiting restrictions present on the entire length of Thurlstone Road.

Photo 3: Thurlstone Road

- 3.2.4 Dartmouth Road is a two-way single carriageway that is approximately 7.3m in width and is subject to a 30mph speed limit. Dartmouth Road is approximately 500m in length and connects with Sidmouth Drive to the north and Victoria Road/Whitby Road to the east, via a priority crossroads junction. There are no waiting restrictions along the entire length of Dartmouth Road.

Photo 4: Dartmouth Road



- 3.2.5 Victoria Road is a two-way single carriageway that is approximately 7.3m in width and is subject to a 30mph speed limit within the vicinity of the site. Victoria Road connects with Pembroke Road/Park Way/Windmill Hill to the north, via a signal junction and Field End Road/Eastcote Lane roundabout to the south-east.

3.3 Pedestrian Provision

- 3.3.1 Guidance from the Chartered Institution of Highways & Transportation (CIHT) suggests a preferred maximum walking distance of 2km for a number of journeys, including commuting and school trips (IHT, 2000). The school is located within a reasonable walking distance (up to 2km) of the residential areas of Ruislip Gardens and Ruislip Manor, and is therefore considered to be conducive to encouraging pedestrian trips to the site.
- 3.3.2 Pedestrian infrastructure around the school is well developed due to the area being predominantly residential in nature. Footways are provided on both sides of Sidmouth Drive that are between 2.0m and 2.5m in width, appear to be well lit and in good condition. There are dropped kerbs at crossing points along the entire length of Sidmouth Drive, with tactile paving present within the vicinity of the school to help facilitate pedestrian movement.

Photo 5: Pedestrian Infrastructure on Sidmouth Drive

- 3.3.3 The footways provide access to the pedestrian provision on the A4180 (West End Road) to the south-west and Victoria Road to the north-east. Sidmouth Drive also provides access to the footway provision on the residential side streets including Thurlstone Road, Flamborough Road and Dartmouth Road respectively.
- 3.3.4 The A4180 (West End Road) features a signalised pedestrian crossing facility approximately 35m to the south of the junction with Sidmouth Drive. There are footways on both sides of the A4180 (West End Road) that provide access to Ruislip to the north and the junction with the A40 to the south. The footways appear to be well lit and in good condition, with dropped kerbs and some tactile paving present across a number of residential side streets.

Photo 6: Signalised Pedestrian Crossing Facility on the A4180 (West End Road)

- 3.3.5 There are footways on both sides of Thurlstone Road and Dartmouth Road which are at least 2.0m in width and generally in good condition with both Thurlstone Road and Dartmouth Road providing links to a number of other residential streets.

Photo 7: Pedestrian Infrastructure on Dartmouth Road



- 3.3.6 There is a public footpath named Jim O'Neill Walk located approximately 120m to the east of the site which is approximately 600m in length and provides a traffic-free route between Sidmouth Drive and Victoria Road.

Photo 8: Jim O'Neill Walk Public Footpath

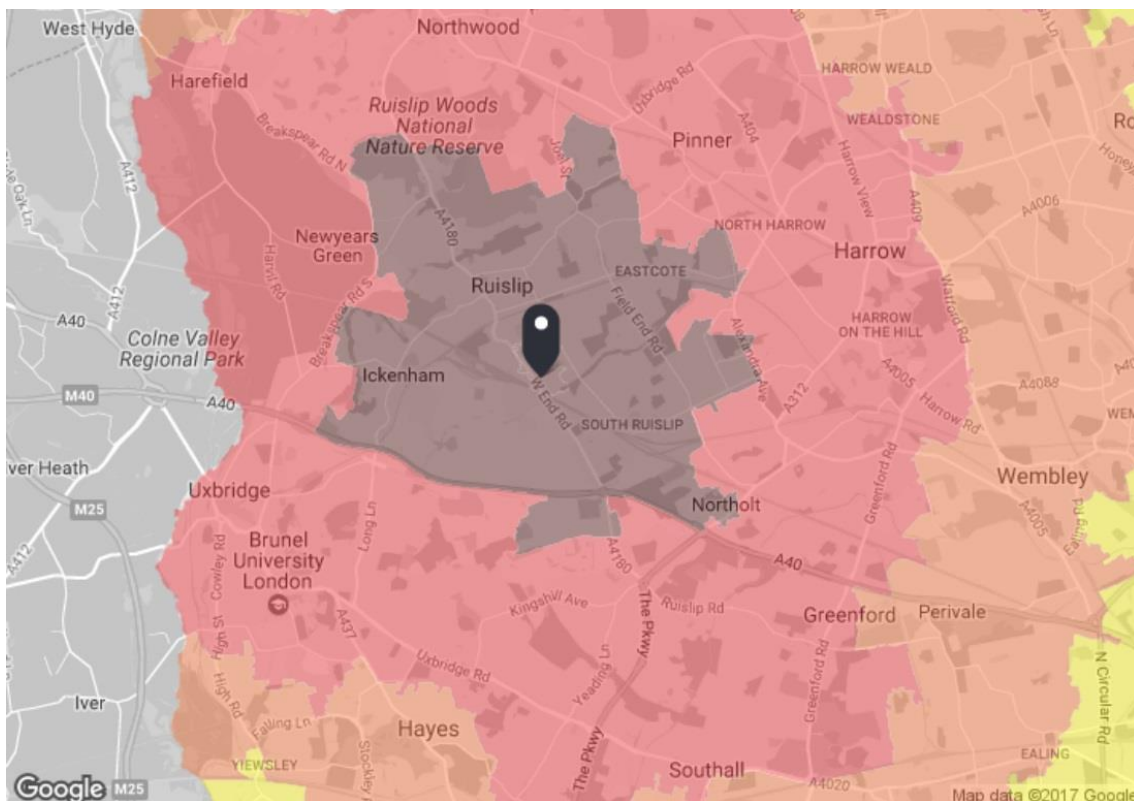


- 3.3.7 The footways in the local area appear to be of adequate width and surface quality, with street lighting provided throughout.
- 3.3.8 The proposed internal pedestrian routes are expected to be of adequate width, with step-free access between the site and the local footway network. It is therefore considered that the site can be suitably accessed on foot by all users, including those accompanied by young children and the mobility impaired.
- 3.3.9 Measures to promote and encourage walking trips to and from the school are outlined within the Travel Plan (LTP, 2017).

3.4 Cycling Provision

- 3.4.1 Cycling is a low cost and healthy alternative to car use, which can substitute for short car trips, or can form part of a longer journey by public transport. The DfT state that *“in common with other modes, many utility cycle journeys are under three miles (5km), although, for commuter journeys, a trip distance of over five miles (8km) is not uncommon”* (DfT, 2008).
- 3.4.2 The school is located within a reasonable cycle ride, up to 5km (approximately 15 minutes at the average cycling speed of 12mph), of a large residential catchment, including Ruislip, Ickenham and Eastcote.
- 3.4.3 Most roads within the vicinity of the site are either subject to a 20mph or 30mph speed limit and are therefore considered to be generally conducive to encouraging cycle trips.
- 3.4.4 Figure 2 shows the catchment areas surrounding the site that can be reached within a less than 15 minute, 15-30 minute and 30-45 minute cycle ride for the baseline AM peak. This isochrone is derived from the travel time estimations using the online TfL WebCAT mapping facility.

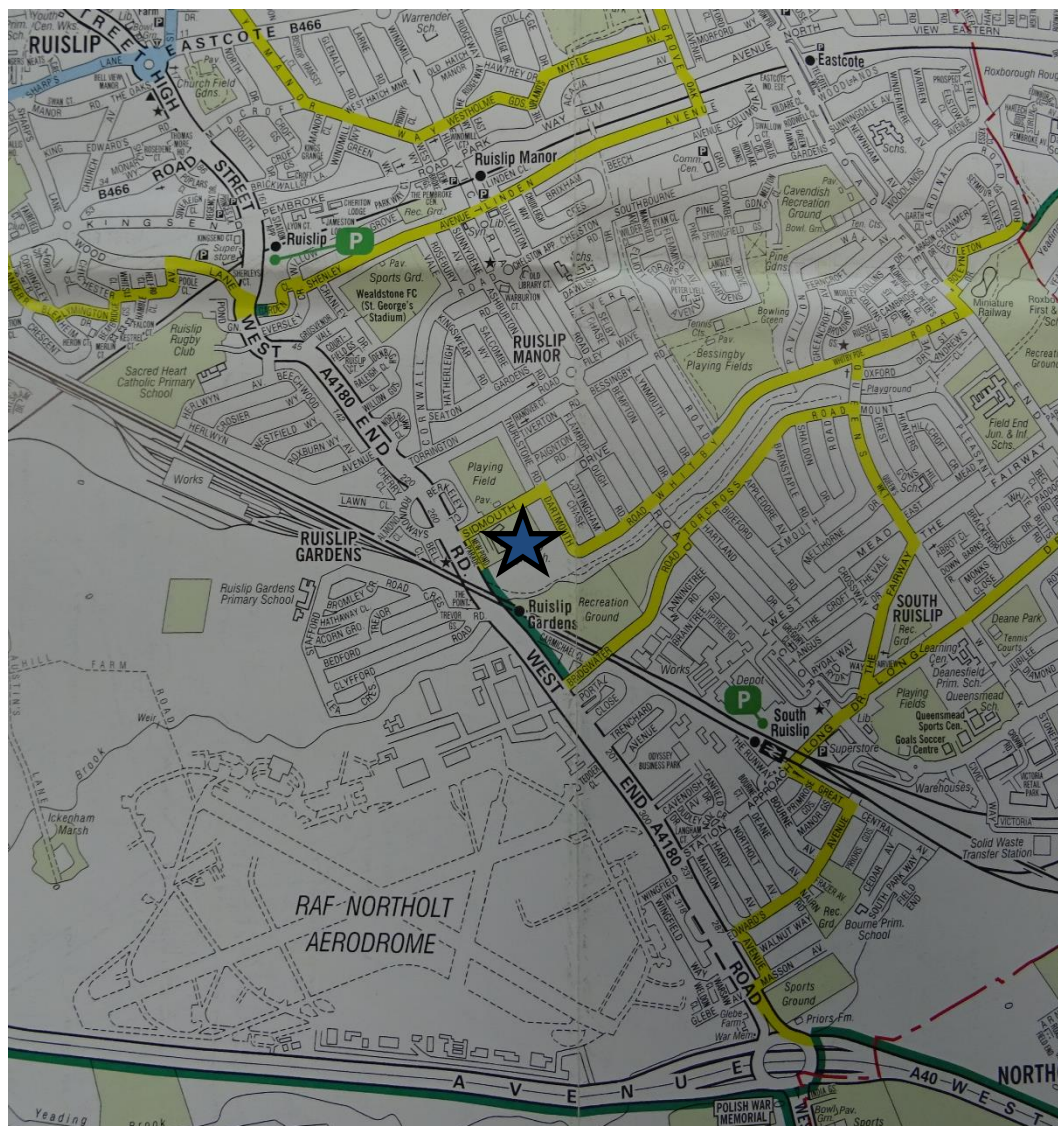
Figure 2: Cycle Time Isochrone



Source: WebCAT (TfL, 2017)

- 3.4.5 The cycling facilities within the vicinity of the site are shown on the extract from the local area cycle map in Figure 3.

Figure 3: Local Cycle Routes



Source: London Cycling Guide 3 (TfL, 2013)

- 3.4.6 As seen in Figure 3, there are some cycling facilities within the vicinity of the site (demarcated by a blue star), with a short off-road facility connecting Sidmouth Drive and Bridgwater Road. Sidmouth Drive and Bridgwater Road are both recommended cycle routes (highlighted in yellow) due to both streets being subject to a 20mph speed limit. Approximately 2.0km to the south of the site there is an off-road facility running adjacent to the A40, providing an off-road route to Northolt.
- 3.4.7 Measures to promote and encourage cycling trips to the school are outlined within the Travel Plan (LTP, 2017).

3.5 Public Transport Accessibility Level (PTAL)

- 3.5.1 An assessment of the site has been undertaken using the TfL Public Transport Accessibility Level (PTAL) database. PTAL measures the accessibility of public transport services in the vicinity of a development site by measuring walking distances along footways. The generally acceptable walking distance to a bus stop under the assessment is 640m (8 minutes) and to a tram stop/rail/underground station is 960m (12 minutes).
- 3.5.2 The site was found to have an average PTAL rating of 2, with 0 rated the worst and 6b rated the best, the full report is attached as Appendix 2. As part of the assessment, walking distances were measured from the approximate location of the centre of the school site.

3.6 Public Transport Provision - Bus

- 3.6.1 The PTAL assessment outlines that bus stops within 640m of a development site are considered to be within a suitable walking distance. There are northbound and southbound bus stops on the A4180 (West End Road) within a 160m walk of the site which provide access to the #696 and E7 bus services. There is also a southbound stop on Victoria Road within a 570m walk of the site. This provides access to the #114 service.
- 3.6.2 Details of the bus services available from these local stops are provided within Table 2:

Table 2: Local Bus Services

Route No.	Route	Monday-Friday Frequency*
Bus Services from the A4180 (West End Road) (within 160m walk)		
696	Eastcote Village - Ruislip Manor Station - Ruislip Gardens - Northolt (Old Ruislip Road) - Yeading (Willow Tree Lane) - Wood End (Uxbridge County Court) - Hayes Town (Hayes and Harlington Station) - Hayes Town (Guinness Close) - Stockley Park (Conway Drive)	Two morning services towards Eastcote village. Two afternoon services towards Stockley Park.
E7	Ruislip Station - Ruislip (Chichester Avenue) - Ruislip Gardens - Northolt (Old Ruislip Road) - Greenford High School - Greenford (Broadway) - Greenford (Clifton Road) - Perivale (Ruislip Road East) - West Ealing (Drayton Green Road) - Ealing Broadway Station	Every 12 minutes
Bus Service from Victoria Road (within 570m walk)		
114	Ruislip Station - Ruislip Manor Station - Ruislip Gardens (Torcross Road) - South Ruislip (Holyrood Avenue) - South Harrow Station - Harrow Bus Station - Kenton Station - Kenton Library - Queensbury Station - Burnt Oak - Mill Hill Broadway	Every 9-12 minutes

*Refers to general daytime services between 08:00 and 17:00

- 3.6.3 Table 2 demonstrates that frequent services are available from the local bus stops, which provide access to a number of residential areas. It is noted that these services also provide the opportunity to connect with other bus routes, as well as London Underground and National Rail services.

Photo 9: A1480 (West End Road) Bus Stop (Southbound)



- 3.6.4 All children aged between 11 and 15 years are able to travel free on TfL buses but have to pay child fares on all other public transport services. The 16+ Zip Oyster Card allows child rate 7 day, monthly or longer bus passes, and half rates on all other services. Children that live in a London Borough can get free bus travel providing they are still in full time education. Due to the frequent nature of the bus services, it is considered that there is considerable scope for pupils to access the site by bus.
- 3.6.5 Measures to promote and encourage trips by public transport to the school are outlined within the Travel Plan (LTP, 2017).

3.7 Public Transport Provision - London Underground & Rail

- 3.7.1 The site is located approximately 400m (5 minute walk) from Ruislip Gardens Underground Station, which is located to the east of the A4180. The station is served by the Central Line. Ruislip Underground Station is located approximately 1.4km to the north-west of the site and is served by the Metropolitan and Piccadilly Lines. A summary of the services available from the two local stations is provided within Table 3:

Table 3: Local Underground Services

Line	Route	Mon-Fri Daytime Frequency*
Services available from Ruislip Gardens Underground Station (within 400m walk)		
Central Line	West Ruislip - Epping	1-9 trains per hour
	West Ruislip - Hainault	1-4 trains per hour
	West Ruislip - Woodford	6-13 trains per hour
Services available from Ruislip Underground Station (within 1.4km walk)		
Metropolitan Line	Uxbridge - Aldgate	6-8 trains per hour
	Uxbridge - Baker Street	1-2 trains per hour
Piccadilly Line	Uxbridge - Cockfosters	4-6 trains per hour
	Uxbridge - Oakwood	1-2 trains per hour

* Relates to general frequency of services between 08:00 and 17:00

- 3.7.2 As detailed within Table 3, frequent London Underground services are available from Ruislip Gardens and Ruislip Underground Stations, with up to 13 trains per hour on the Central Line, during the morning peak period. The Metropolitan and Piccadilly Lines also provides frequent services with up to 8 trains per hour.
- 3.7.3 The nearest access point for National Rail services is South Ruislip Rail Station, approximately 1.8km south-east of the site. This station accommodates Chiltern Railways services providing access to destinations including London Marylebone, High Wycombe and Aylesbury, generally with two services operating per hour.
- 3.7.4 Measures to promote and encourage trips by public transport to the school are outlined within the Travel Plan (LTP, 2017).

4.0 ROAD CASUALTY APPRAISAL

4.1 Collision Record

4.1.1 Personal Injury Collision (PIC) data for the highway network local to Ruislip High School for the most recent available 5 year study period (30/08/2011 to 31/08/2016) was obtained from TfL for analysis. A total of 8 collisions occurred within the study area, which was agreed with LBH Highways and includes sections of Sidmouth Drive, Thurlstone Road, the A4180 and Dartmouth Road. The study area extents and the locations of the collisions are indicated on the plan attached as Appendix 3.

4.1.2 Table 4 below outlines the collision history of the study area.

Table 4: Collision History

Year	1	2	3	4	5	Total
From	30/08/2011	30/08/2012	30/08/2013	30/08/2014	30/08/2015	
To	31/08/2012	31/08/2013	31/08/2014	31/08/2015	31/08/2016	
Fatal	-	-	-	-	-	0
Serious	-	-	-	-	-	0
Slight	3	2	2	1	-	8
Total	3	2	2	1	0	8

4.1.3 The collision records show that the number of PICs per year has remained low throughout the study period, with a peak of three collisions during the first study year and no collisions in the latest study year. It should be noted that there were no KSI (Killed or Seriously Injured) collisions.

4.2 Collision Conditions

4.2.1 Table 5 below summarises the recorded collisions by road surface, weather and lighting conditions:

Table 5: Collision Conditions

Road Surface	Collisions	%
Dry	6	75.0%
Wet/Damp	2	25.0%
Weather	Collisions	%
Fine	7	87.5%
Rain	1	12.5%
Lighting	Collisions	%
Daylight	6	75.0%
Dark	2	25.0%

4.2.2 As illustrated in Table 5, the majority of collisions did not occur with adverse road surface, weather or lighting conditions.

4.3 Collision Times

4.3.1 Table 6 summarises the collisions by time of year:

Table 6: Collisions by Time of Year

Time of Year	Collisions	%
Winter (Dec-Feb)	2	25.0%
Spring (Mar-May)	2	25.0%
Summer (Jun-Aug)	4	50.0%
Autumn (Sep-Nov)	-	0.0%

4.3.2 Table 6 shows that half of the collisions occurred during the summer months (June to August), with no collisions occurring during the autumn months (September to November).

4.3.3 Table 7 below summarises the collisions by day of week and also the time of day:

Table 7: Collisions by Day and Time

Day	Morning (06:00-11:00)	Lunch (11:00-14:00)	Afternoon (14:00-19:00)	Evening (19:00-01:00)	Night (01:00-06:00)	Total	%
Monday	-	-	1	-	-	1	12.5%
Tuesday	-	1	-	-	-	1	12.5%
Wednesday	1	-	1	-	-	2	25.0%
Thursday	-	-	2	2	-	4	50.0%
Friday	-	-	-	-	-	0	0.0%
Saturday	-	-	-	-	-	0	0.0%
Sunday	-	-	-	-	-	0	0.0%
Total	1	1	4	2	0	8	
%	12.5%	12.5%	50.0%	25.0%	0.0%		

4.3.4 Table 7 illustrates that half of the collisions occurred on a Thursday, with a quarter of collisions occurring on a Wednesday. No collisions occurred on a Friday, Saturday or Sunday. Half of the collisions occurred during the afternoon period, with no collisions occurring during the night time period.

4.4 Collision Locations

4.4.1 The locations of the 8 study collisions (shown on the plot attached as Appendix 3) can be summarised as follows:

- 4 PICs occurred on the A4180 (not at a junction);
- 2 PICs occurred at the A4180/Sidmouth Drive junction;
- 1 PIC occurred at the Thurlstone Road/Tiverton Road junction; and
- 1 PIC occurred on Sidmouth Drive (not at a junction).

4.4.2 No collisions were recorded at or in the immediate vicinity of the school access/egress junctions on Sidmouth Drive.

4.5 Casualties

- 4.5.1 A total of 9 casualties resulted from the 8 recorded injury collisions during the study period. Table 8 provides a breakdown of the casualties according to mode of travel and age group:

Table 8: Casualty Road User Groups

Road User Group	Age (years)						Total	%
	0 to 15	16 to 20	21 to 25	26 to 45	46 to 65	66+		
Pedestrian	1	-	2	-	-	-	3	33.3%
Car Driver	-	1	1	-	1	-	3	33.3%
Car Passenger	-	-	-	1	-	-	1	11.1%
PTW Rider	-	-	-	2	-	-	2	22.2%
Total	1	1	3	3	1	0	9	
%	11.1%	11.1%	33.3%	33.3%	11.1%	0.0%		

- 4.5.2 Table 8 shows that a third of casualties were pedestrians and another third were car drivers. Just under a quarter of casualties (22.2%) were Powered Two Wheeler (PTW) riders. Two thirds of casualties were aged between 21 and 45 years.

4.6 Road Safety Impact

- 4.6.1 A total of 8 collisions, resulting in 9 casualties, have occurred within the study area during the 5-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements of the proposed school extension, therefore it is considered that there are no existing road safety issues pertinent to the development of the site.
- 4.6.2 If the site access junctions and internal routes are designed with due consideration to road safety, with appropriate highway design features incorporated into the detailed design, then the proposals should not have a detrimental road safety impact on the local transport network and should not adversely affect the safety of pedestrians and cyclists.

5.0 TRIP GENERATION PROJECTIONS

5.1 Existing Traffic Flow Data - School Entrance Car Park

5.1.1 In order to establish the existing traffic generation of the site, traffic count surveys were undertaken at the site access and egress points from Sidmouth Drive during the AM and PM peak periods. The surveys were undertaken during school term time (Tuesday 28th March 2017) between the hours of 07:00-09:30 and 14:30-18:00. A summary of the traffic survey results captured at the main school entrance access and egress points is provided within Table 9 and Table 10, with a graph showing the arrival and departure profiles during each peak period displayed in Figure 4 and Figure 5 respectively.

Table 9: Existing School Traffic Generation (AM Peak) - School Entrance Car Park

Time Period	All Vehicles IN	All Vehicles OUT	Two-Way Movements
07:00-07:10	0	0	0
07:10-07:20	0	0	0
07:20-07:30	2	0	2
07:30-07:40	4	0	4
07:40-07:50	4	0	4
07:50-08:00	7	0	7
08:00-08:10	3	0	3
08:10-08:20	1	0	1
08:20-08:30	1	0	1
08:30-08:40	1	0	1
08:40-08:50	1	0	1
08:50-09:00	2	0	2
09:00-09:10	0	0	0
09:10-09:20	0	0	0
09:20-09:30	3	0	3
Total	29	0	29

Figure 4: Arrival/Departure Profile during AM Peak

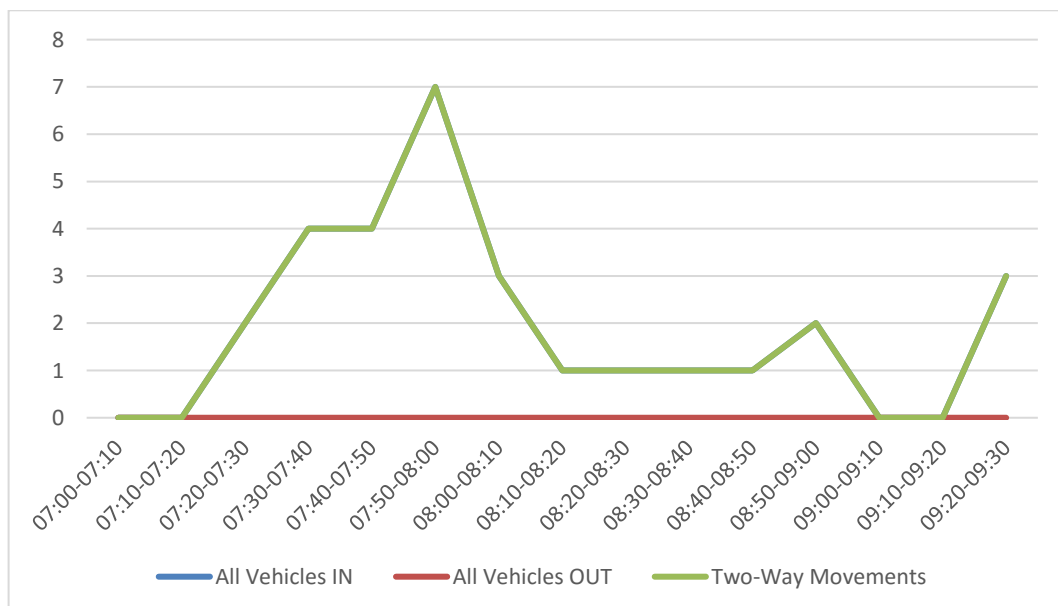
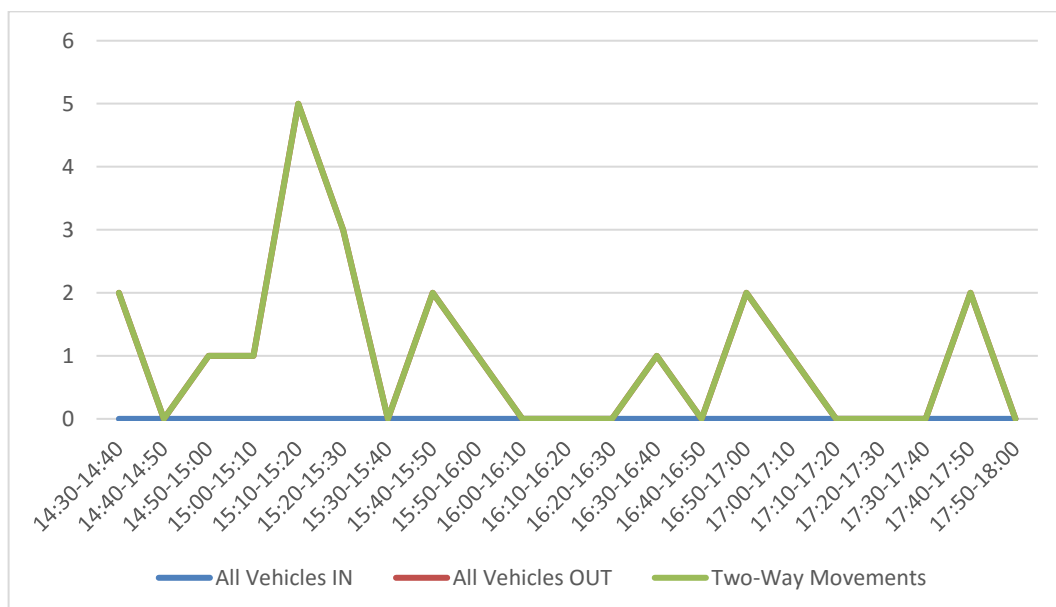


Table 10: Existing School Traffic Generation (PM Peak) - School Entrance Car Park

Time Period	All Vehicles IN	All Vehicles OUT	Two-Way Movements
14:30-14:40	0	2	2
14:40-14:50	0	0	0
14:50-15:00	0	1	1
15:00-15:10	0	1	1
15:10-15:20	0	5	5
15:20-15:30	0	3	3
15:30-15:40	0	0	0
15:40-15:50	0	2	2
15:50-16:00	0	1	1
16:00-16:10	0	0	0
16:10-16:20	0	0	0
16:20-16:30	0	0	0
16:30-16:40	0	1	1
16:40-16:50	0	0	0
16:50-17:00	0	2	2
17:00-17:10	0	1	1
17:10-17:20	0	0	0
17:20-17:30	0	0	0
17:30-17:40	0	0	0
17:40-17:50	0	2	2
17:50-18:00	0	0	0
Total	0	21	21

Figure 5: Arrival/Departure Profile during PM Peak



- 5.1.2 Table 9 demonstrates that the majority of movements at the main school entrance during the AM peak period occurred between 07:20 and 08:20, with the most movements occurring in the 10 minute period between 07:50 and 08:00. As shown in Figure 5, there were fewer vehicle movements recorded during the PM peak period, with a total of 21 two-way movements. All of the movements were departures and were spread across the entire survey period, with a peak of 5 departures between 15:10 and 15:20.
- 5.1.3 This data shows that there were no drop-off movements in the AM peak (0 departures) or pick-up movements in the PM peak (0 arrivals).

5.2 Existing Traffic Flow Data - Main Staff Car Park

- 5.2.1 In order to establish the existing traffic generation associated with the main staff car park situated to the west of the school building, traffic count surveys were undertaken at the access point from Sidmouth Drive during the AM and PM peak periods, alongside the surveys detailed in Section 5.1. A summary of the traffic survey results is provided within Table 11 and Table 12, with a graph showing the arrival and departure profiles during each peak period displayed in Figure 6 and Figure 7 respectively.

Table 11: Existing School Traffic Generation (AM Peak) - Main Staff Car Park

Time Period	All Vehicles IN	All Vehicles OUT	Two-Way Movements
07:00-07:10	2	0	2
07:10-07:20	3	0	3
07:20-07:30	8	0	8
07:30-07:40	8	1	9
07:40-07:50	10	0	10
07:50-08:00	10	5	15
08:00-08:10	4	2	6
08:10-08:20	1	0	1
08:20-08:30	4	0	4
08:30-08:40	0	0	0
08:40-08:50	0	0	0
08:50-09:00	3	0	3
09:00-09:10	0	0	0
09:10-09:20	1	0	1
09:20-09:30	1	0	1
Total	56	8	64

Figure 6: Arrival/Departure Profile during AM Peak - Main Staff Car Park

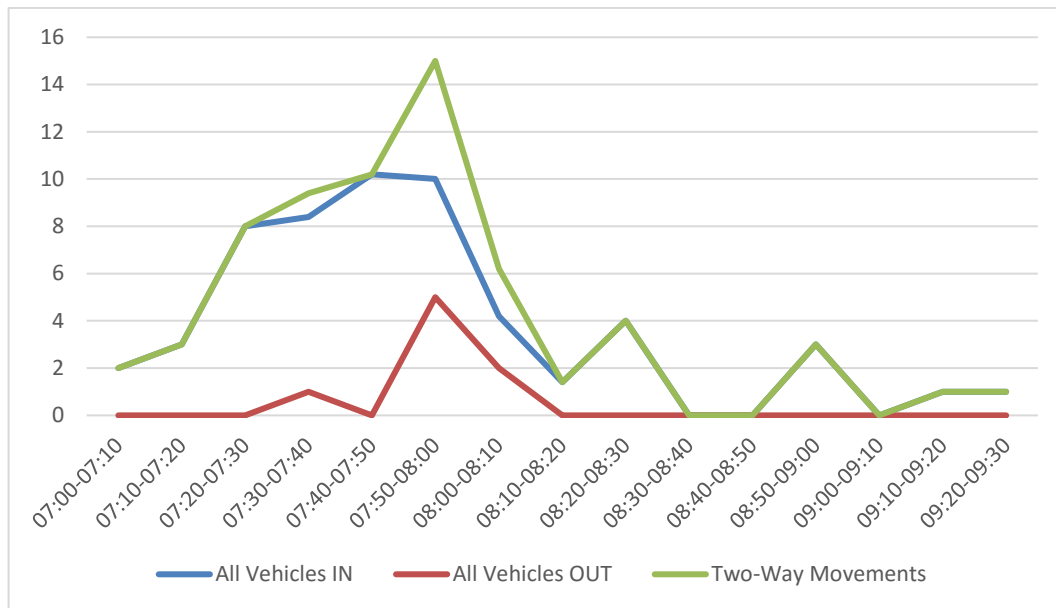
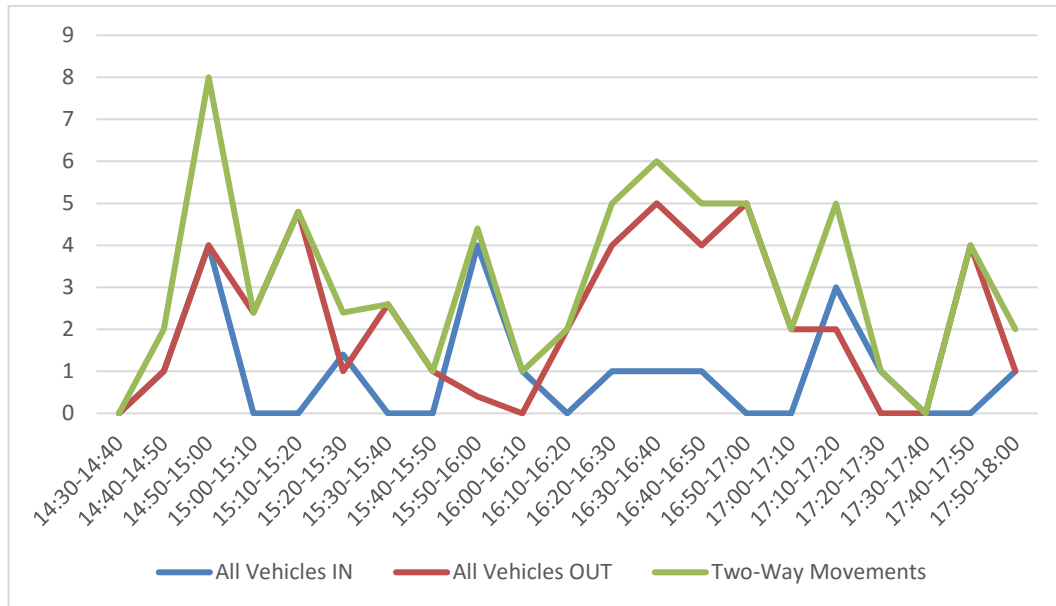


Table 12: Existing School Traffic Generation (PM Peak) - Main Staff Car Park

Time Period	All Vehicles IN	All Vehicles OUT	Two-Way Movements
14:30-14:40	0	0	0
14:40-14:50	1	1	2
14:50-15:00	4	4	8
15:00-15:10	0	2	2
15:10-15:20	0	5	5
15:20-15:30	1	1	2
15:30-15:40	0	3	3
15:40-15:50	0	1	1
15:50-16:00	4	0	4
16:00-16:10	1	0	1
16:10-16:20	0	2	2
16:20-16:30	1	4	5
16:30-16:40	1	5	6
16:40-16:50	1	4	5
16:50-17:00	0	5	5
17:00-17:10	0	2	2
17:10-17:20	3	2	5
17:20-17:30	1	0	1
17:30-17:40	0	0	0
17:40-17:50	0	4	4
17:50-18:00	1	1	2
Total	19	46	66

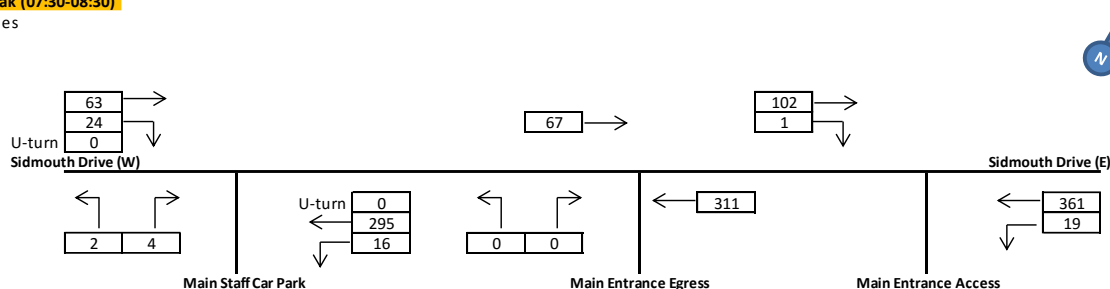
Figure 7: Arrival/Departure Profile during PM Peak - Main Staff Car Park



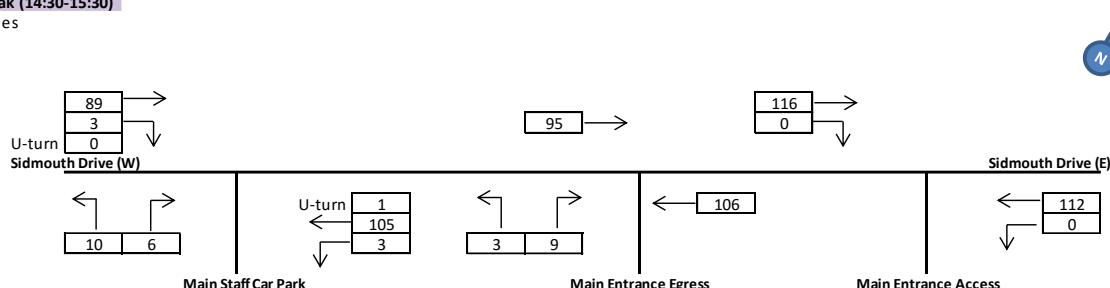
- 5.2.2 Table 11 demonstrates that the majority of movements at the main staff car park access during the AM peak period occurred between 07:20 and 08:20, with the most movements occurring in the 10 minute period between 07:50 and 08:00. As shown in Table 12, there were slightly more vehicle movements recorded during the PM peak period, with a total of 66 two-way movements. The majority of movements were departures and were generally evenly spread across the survey period with a peak of 8 two-way vehicle movements during the 10 minute period between 14:50 and 15:00.
- 5.2.3 This data shows that there were 8 drop-off movements in the AM peak (8 departures) and 19 pick-up movements in the PM peak (19 arrivals).
- 5.2.4 Straight ahead vehicle flows along Sidmouth Drive were also collected during the traffic surveys and were relatively light in nature, with higher movements during the AM peak. The peak hours for recorded vehicle movements at the site access and egress junctions were found to be 07:30-08:30 and 14:30-15:30. A summary of the recorded movements during these periods is provided within Figure 8 with full details attached as Appendix 4.

Figure 8: Recorded AM & PM Peak Hour Turning Movements

2017 Existing
AM Peak (07:30-08:30)
Vehicles



2017 Existing
PM Peak (14:30-15:30)
Vehicles



5.3 Projected Traffic Generation

- 5.3.1 The projected traffic generation of the school has been based on the traffic flow data obtained at the access and egress junctions and growthed by the projected percentage increase in pupil numbers (16.8%), with consideration of the existing pupil roll (1,116) at the school.
- 5.3.2 Table 13 outlines the projected difference in the number of existing trips generated by the school during the AM and PM peak hours (1,116 pupils) and if the school were to operate at its proposed pupil roll after the expansion (1,302 pupils, a 16.8% increase on the existing pupil roll). For the purposes of this assessment, the AM peak is assumed to be 07:30-08:30 and the PM peak 14:30-15:30 based on the existing turning movements at the site access/egress points on Sidmouth Drive.

Table 13: Projected School Traffic Generation

	Total		
	Arrive	Depart	Two-Way
AM Peak			
Existing Pupil Roll (1,116 pupils)	60	6	66
Proposed Pupil Roll (1,302 pupils)	70	7	77
Proposed difference in trip numbers	+10	+1	+11
PM Peak			
Existing Pupil Roll (1,116 pupils)	6	28	34
Proposed Pupil Roll (1,302 pupils)	7	33	40
Proposed difference in trip numbers	+1	+5	+6

- 5.3.3 The projections summarised in Table 13 indicate that the proposed extension could be expected to generate up to 77 two-way vehicle trips during the AM peak hour, should the school operate with a pupil roll of 1,302 pupils, representing an increase of 11 two-way vehicle trips relative to the existing pupil roll at the site. A total of 40 two-way vehicle trips are expected to be generated during the PM peak hour should the school operate with a pupil roll of 1,302 pupils, representing an increase in 6 two-way vehicle trips. It should be noted that the existing turning count data includes pupil, staff and visitor movements utilising the school access/egress junctions. It is acknowledged that the count data does not include any movements associated with off-site parking, however, as shown in Section 6.2, there appears to be low levels of existing (and therefore proposed) on-street parking on local streets associated with pupil and staff trips.

5.4 Traffic Impact

- 5.4.1 The Department for Transport (DfT, 2007a) has previously issued guidance that transport assessment of development impacts could be based on a threshold of *“30 two-way peak hour vehicle trips”*. This guidance acknowledged that this threshold was not to be applied rigidly, but rather that it provided *“a useful point of reference from which to commence discussions”*.
- 5.4.2 This national DfT guidance has now been replaced with the *‘National Planning Policy Framework’* (NPPF) (DCLG, 2012) and its accompanying *‘Planning Practice Guidance’* (PPG) (DCLG, 2014). NPPF and PPG require that transport assessment is undertaken for *“developments that generate significant amounts of movement”*, although this is not defined. It is therefore acknowledged that there is no set threshold for assessment within the current national planning policy. In determining whether the proposed extension is expected to have a material impact on the local highway network, the traffic projections for the proposed development have been compared against the current and previous Government guidance.
- 5.4.3 The projected traffic generation of the school at full capacity has been based on the traffic flow data obtained at the access and egress junctions, and growthed by the increase in pupil numbers (+16.8%) to reflect the proposed pupil roll. The vehicle trip generation projections indicate that the proposed expansion could be expected to generate up to 11 additional two-way vehicle movements during the AM peak hour, should the school operate with a pupil roll of 1,302 pupils, with 6 additional two-way vehicle movements during the PM peak hour.
- 5.4.4 It is therefore considered that the proposals should not have a material impact on the operation of the local highway network. As the impact of the proposals is not expected to be severe, the proposals are considered to be in accordance with the NPPF, which states that *“development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe”* (DCLG, 2012).

5.5 Pupil Trip Generation & Modal Split

- 5.5.1 The existing travel patterns of pupils at the school were most recently established as part of a pupil travel survey undertaken in May 2017 to inform this TA. A total of 793 responses were received, resulting in a 72% response rate on the existing pupil roll. This level of response rate is considered to be representative of the overall current pupil population.
- 5.5.2 The proposed extension is not expected to significantly change the catchment area from which the school attracts pupils, therefore the existing travel patterns of pupils are considered to provide a reasonable indication of the likely travel behaviour of any additional pupils. Table 14 uses the survey modal split to calculate the projected number of pupil trips by each mode, should the school operate at its proposed full pupil roll of 1,302 pupils.

Table 14: Projected Pupil Modal Trip Generation

Mode	Modal Split	Survey Responses	Pupils Based on Current Pupil Roll	Projected Pupils	Additional Pupils
Car/Taxi (pupil sole passenger)	8.2%	65	92	107	+16
Car Share	9.6%	76	107	125	+19
Walk	62.2%	493	694	810	+121
Cycle	4.7%	37	52	61	+9
Public Bus	11.7%	93	131	152	+23
Train (National Rail Service)	0.4%	3	4	5	+1
Tube	3.2%	25	36	42	+6
Other	0.1%	1	1	1	+1
TOTAL	100%	793	1,116	1,302	+186

*Totals may not represent the sum of their parts due to rounding

- 5.5.3 The results from the pupil travel survey show that just under two-thirds of existing pupils travel to/from the school on foot (62.2%), with just over a tenth of pupils travelling to/from school by public bus (11.7%). Under a tenth of pupils travel to school as a sole passenger (8.2%), with 9.6% of pupils car sharing with at least one other pupil.
- 5.5.4 There are a number of other factors to consider in relation to pupil travel at the school, as outlined overleaf:
- Vehicle trips associated with pupils travelling to/from the school as a car passenger may not represent 'new' trips to the local highway network. It is expected that the majority of trips whereby a pupil is dropped-off and picked-up will not be primary trips involving only one destination. For example, a number of drop-off/pick-up trips by parents/guardians will form part of their commute to work, therefore the school would not be the sole destination for the journey. It is recognised that such trips would only be rerouted to/from the school, with the associated trips not new to the wider highway network. If these trips are pass-by or diverted trips from the highway network local to the site, then the rerouted distance would be negligible.

- There is inevitably a certain level of absence each day. The current national average for state funded secondary schools is 5.0% (DfE, 2016), meaning that approximately 65 pupils of the 1,302 expected to be on roll upon full capacity of the expanded school site could be expected to be absent on any given day.

5.6 Staff Trip Generation & Modal Split

- 5.6.1 The estimated travel to work modal split for staff at the extended school has been calculated using method of travel to work data for the existing workplace population, obtained from the 2011 Census (dataset: WP701EW). The school modal split has been predicted based upon the travel patterns of those working in Middle-Layer Super Output Area (MSOA) 'Hillingdon 009' within which the site is located. It is considered reasonable to assume that the staff journey to work modal split at the site will be comparable with that of the existing workplace population within the local MSOA.
- 5.6.2 As previously outlined, the existing school is currently understood to employ a total of 105.2 FTE staff, with an additional 17.5 FTE staff expected to be employed as part of the extension proposals, bringing the total number of FTE staff to 122.7. Table 15 shows the number of existing and proposed staff expected to travel by each mode.

Table 15: Projected Staff Modal Trip Generation

Mode of Travel	Modal Split	Existing FTE Staff	Proposed FTE Staff	Additional Staff
Car/Taxi/PTW	60.5%	64	74	+10
Public Transport	24.7%	26	30	+4
Car Passenger	4.4%	5	5	-
Pedestrian	8.1%	8	10	+2
Pedal Cycle	1.8%	2	2	-
Other	0.5%	1	1	-
TOTAL	100%	105.2	122.7	+16

*Totals may not represent the sum of their parts due to rounding

- 5.6.3 The staff travel survey results show that under two-thirds of staff (60.5%) could be expected to travel to work alone by car, with just under a quarter of staff (24.7%) travelling to/from school by public transport.

6.0 PARKING APPRAISAL

6.1 Off-Street Parking

- 6.1.1 LBH's current adopted parking standards are defined within the saved policies of the Unitary Development Plan (UDP) (LBH, 2007), which states that London Plan standards (GLA, 2016) should be applied unless a specific LBH standard is specified.
- 6.1.2 There are no car parking requirements outlined in the UDP, therefore the standards within the London Plan have been referenced. No maximum car parking standards are defined within the London Plan for the proposed use, and it highlights that *"if there is no standard provided, the level of parking should be determined by the transport assessment undertaken for the proposal"* (GLA, 2016). LBH's latest draft car parking standards are contained within the LBH's Local Plan Development Management Policies (LBH, 2015), and these also indicate that the car parking requirements for schools should be based *"on an individual basis using a transport assessment and where applicable school travel plan/travel plan"*.
- 6.1.3 It is considered that the parking provision is adequate to cater for the proposed number of staff associated with the expansion proposals, however if demand should warrant it, additional spaces could be provided at the school. It is considered that an over-provision of car parking provision can detrimentally discourage travel by sustainable modes. The proposed development incorporates an increase in cycle parking provision at the site, from the existing 50 spaces, to a proposed level of 76 spaces. However, it is acknowledged that the level of cycle parking demand is to be monitored and increased if necessary as part of the school Travel Plan (LTP, 2017).

6.2 On-Street Parking Impact

- 6.2.1 Parking beat surveys were undertaken on Tuesday 28th March 2017 on all roads within the vicinity of the site to determine existing on-street parking occupancy. The surveys were undertaken between the hours of 07:00-09:20 and 14:30-16:00, covering the majority of Sidmouth Drive, along with parts of Thurlstone Road, Dartmouth Road and Tiverton Road, as shown in Figure 9:

Figure 9: Parking Beat Survey Extents



Source Imagery: Copyright Google Earth Pro (License Key-JCPMR5M58LXF2GE)

6.2.2 All on-street parking was recorded during the survey periods, including parking in unrestricted bays, on any waiting restrictions (including single yellow lines, double yellow lines and keep clears) and across dropped kerbs. A theoretical parking capacity was calculated for each street based upon the length of unrestricted kerbside parking areas. The on-street capacity of each street within the study area is outlined within Table 16 and Table 17, along with the recorded occupancies during the parking beat surveys.

Table 16: On-Street Parking Survey Results (AM)

Parking Location	Max. Capacity	Recorded Occupancy														Max. % Occupancy
		07:00	07:10	07:20	07:30	07:40	07:50	08:00	08:10	08:20	08:30	08:40	08:50	09:00	09:10	
Sidmouth Drive																
Access	≈4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disabled Bay	≈1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100.0%
Dropped Kerb	≈8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Keep Clear	≈19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Keep Clear/Access	≈25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Restricted Carriageway	≈17	1	1	1	1	1	1	1	-	-	-	-	-	-	-	5.8%
Single Yellow	≈10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈72	57	53	54	55	55	53	54	58	57	56	57	58	59	59	81.9%
White Line	≈7	-	-	-	-	-	-	2	2	2	2	2	2	2	2	28.6%
White Line/Access	≈2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
White Line/Dropped Kerb	≈2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thurlstone Road																
Double Yellow/Dropped Kerb	≈1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dropped Kerb	≈9	5	5	5	4	4	3	3	3	3	2	2	2	1	1	55.6%
Restricted Carriageway	≈2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈26	27	27	26	27	27	26	27	26	24	25	24	23	23	23	103.8%
White Line/Dropped Kerb	≈2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dartmouth Road																
Dropped Kerb	≈14	1	1	1	1	1	-	-	-	-	1	1	1	1	1	7.1%
Restricted Carriageway	≈1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈37	34	34	31	28	27	27	27	26	24	25	26	27	29	30	91.9%
A4180 (West End Road)																
Disabled Bay	≈7	-	-	-	-	-	-	-	-	-	-	1	1	1	1	14.3%
Double Yellow	≈6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Double Yellow/Dropped Kerb	≈40	3	3	3	3	3	3	3	4	4	4	4	4	4	4	10.0%
Pay and Display	≈14	2	2	1	1	1	1	1	1	1	2	2	2	1	2	14.3%
Zig Zag	≈18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A4180 (West End Road) Service Road																
Disabled Bay	≈1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	100.0%
Double Yellow	≈22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loading Bay	≈1	-	-	-	-	-	1	1	-	-	-	-	1	1	-	100.0%
Pay And Display	≈14	6	6	7	7	6	6	6	4	6	8	10	11	10	8	78.6%
Permit Holder	≈13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cottingham Chase																
Dropped Kerb	≈13	2	2	2	2	2	1	1	1	1	1	1	-	-	-	15.4%
Restricted Carriageway	≈13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈27	21	19	20	21	20	19	19	20	20	20	18	18	19	20	77.8%

Parking Location	Max. Capacity	Recorded Occupancy														Max. % Occupancy
		07:00	07:10	07:20	07:30	07:40	07:50	08:00	08:10	08:20	08:30	08:40	08:50	09:00	09:10	
Paignton Road																
Dropped Kerb	≈7	-	-	-	1	-	-	-	-	-	-	-	-	-	-	14.3%
Restricted Carriageway	≈1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈25	20	20	20	19	19	20	20	20	20	19	19	19	20	20	80.0%
White Line/Dropped Kerb	≈1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	≈398	178	172	170	169	165	160	163	164	160	164	164	166	168	168	44.7%

Table 17: On-Street Parking Survey Results (PM)

Parking Location	Max. Capacity	Recorded Occupancy									Max. % Occupancy
		14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50	
Sidmouth Drive											
Access	≈4	-	-	-	-	-	-	-	-	-	-
Disabled Bay	≈1	1	1	1	1	-	-	-	-	-	100.0%
Dropped Kerb	≈8	-	-	-	-	-	-	1	1	-	12.5%
Keep Clear	≈19	1	-	-	-	-	-	-	-	-	5.3%
Keep Clear/Access	≈6	-	-	-	-	-	-	-	-	-	-
Restricted Carriageway	≈17	2	1	-	-	-	-	-	-	-	11.8%
Single Yellow	≈10	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈72	63	65	64	62	64	67	67	64	63	93.1%
White Line	≈7	2	2	2	2	2	2	2	2	2	28.6%
White Line/Access	≈2	-	-	-	-	-	-	-	-	-	-
White Line/Dropped Kerb	≈2	-	-	-	-	-	-	-	-	-	-
Thurlstone Road											
Double Yellow/Dropped Kerb	≈1	-	-	-	-	-	-	-	-	-	-
Dropped Kerb	≈9	-	-	-	-	1	-	-	-	-	11.1%
Restricted Carriageway	≈2	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈26	26	28	26	26	27	28	23	25	27	107.7%
White Line/Dropped Kerb	≈2	-	-	-	-	-	-	-	-	-	-
Dartmouth Road											
Dropped Kerb	≈14	-	-	-	-	-	-	1	1	-	7.1%
Restricted Carriageway	≈1	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈37	25	25	25	25	24	26	28	27	29	78.4%
A4180 (West End Road)											
Disabled Bay	≈7	1	1	1	1	1	1	1	1	1	14.3%
Double Yellow	≈6	-	-	-	-	-	-	1	-	-	16.7%
Double Yellow/Dropped Kerb	≈40	-	-	-	-	-	-	-	-	-	-
Pay and Display	≈14	1	2	2	2	2	1	1	1	1	14.3%
Zig Zag	≈18	-	-	-	-	-	-	-	-	-	-
A4180 (West End Road) Service Road											
Disabled Bay	≈1	-	-	-	-	-	-	1	1	-	100.0%
Double Yellow	≈22	-	-	-	-	-	-	-	-	-	-
Loading Bay	≈1	-	-	-	-	-	-	-	-	-	-
Pay And Display	≈14	-	-	-	1	-	-	1	-	-	7.1%
Permit Holder	≈13	7	9	9	5	6	6	5	6	4	69.2%

Parking Location	Max. Capacity	Recorded Occupancy									Max. % Occupancy
		14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50	
Cottingham Chase											
Dropped Kerb	≈13	-	-	-	-	-	1	1	-	-	7.7%
Restricted Carriageway	≈13	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈27	17	17	19	18	18	16	16	16	16	70.4%
Paignton Road											
Dropped Kerb	≈7	1	1	1	1	1	1	1	1	2	28.6%
Restricted Carriageway	≈1	-	-	-	-	-	-	-	-	-	-
Unrestricted Bay	≈25	20	19	19	20	19	18	19	20	21	84.0%
White Line/Dropped Kerb	≈1	-	-	-	-	-	-	-	-	-	-
TOTAL	≈398	167	171	169	165	166	167	169	166	166	43.0%

6.2.3 The parking beat surveys found that the current parking situation did not appear to hamper two-way traffic flow on streets within the vicinity of the site. Generally the level of on-street parking on the assessed streets did not notably increase around school start and finish times suggesting that there were only a small number of on-street pupil drop-offs/pick-ups. It can be concluded that there is ample on-street parking provision on local roads surrounding the school to cater for the additional pupils who will be dropped-off/picked-up from school.

7.0 CONCLUSIONS

- 7.1.1 This TA provides a detailed appraisal of the transport impacts associated with the proposals to provide an extension to Ruislip High School, located to the south of Sidmouth Drive in Ruislip, London Borough of Hillingdon.
- 7.1.2 A Travel Plan (LTP, 2017) that provides a strategy for encouraging sustainable travel at the extended school has been produced in conjunction with this TA as a separate document.
- 7.1.3 The proposals are expected to increase the pupil roll from 1,116 to 1,302, and the Full Time Equivalent (FTE) staff numbers from 105.2 to 122.7. The proposals involve the construction of a new extension to the eastern side of the site to provide additional facilities, including a number of new classrooms and a social space for sixth form students. No changes are proposed to the existing access arrangements. A total of 79 car parking spaces are currently provided at the site with no proposals to increase the number of parking spaces at the site.
- 7.1.4 The school is located in a sustainable location, with good access to the local pedestrian network. There are good quality footways on both sides of the carriageway on local streets, with dropped kerbs and tactile paving provided at most local junctions. The site is located within a reasonable cycle ride of a large residential catchment, including Ruislip, Ickenham and Eastcote. Frequent bus services are available from local stops and London Underground services are available from Ruislip Gardens Station approximately a 400m walk from the site.
- 7.1.5 A road casualty study showed that 8 collisions occurred within the local study area around the school during the 5 year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements generated by the expanded school, therefore it is considered that there are no existing road safety issues pertinent to the development of the site.
- 7.1.6 In order to establish the existing traffic generation of the school, traffic count surveys were undertaken during both the AM (07:00-09:30) and PM (14:30-18:00) peak periods on Tuesday 28th March 2017 at the existing site access junctions with Sidmouth Drive. A total of 60 arrivals and 6 departures were recorded during the AM peak period. There were fewer vehicle movements recorded during the PM peak period, with a total of 31 two-way movements.
- 7.1.7 The proposed extension could be expected to generate up to 77 two-way vehicle trips during the AM peak hour should the school operate with the proposed pupil roll, representing an increase of 11 two-way vehicle trips relative to the existing pupil roll at the school. A total of 40 two-way vehicle trips are expected to be generated during the PM peak hour should the school operate with the proposed pupil roll, representing an increase in 6 two-way vehicle trips. The turning count data captured pupil, staff and visitor movements at the school access junctions. It is acknowledged that the count data does not include any movements associated with off-site parking, however there appears to be low levels of existing (and therefore proposed) on-street parking on local streets associated with pupil and staff trips.

- 7.1.8 The likely pupil modal split has been derived from a travel survey undertaken in May 2017. A total of 62.2% of pupils could be expected to walk to school. The staff modal split has been based on local travel to work data and indicates that under two thirds of staff (60.5%) could be expected to travel to work by car.
- 7.1.9 Parking beat surveys were undertaken on streets local to the site, although the change in the level of on-street parking around school start and finish times did not appear to be notable. Generally the level of on-street parking on the assessed streets did not notably increase around school start and finish times suggesting that there were only a small number of on-street pupil drop-offs/pick-ups. It can be concluded that there is ample on-street parking provision on local roads surrounding the school to cater for the additional pupils who will be dropped-off/picked-up from school.
- 7.1.10 Based on the assessments of this TA, it is considered that the proposed expansion would not be expected to have a material impact on the operation of the local highway network. The proposals are therefore considered to be in accordance with the '*National Planning Policy Framework*' (NPPF) which states that "*development should only be prevented or refused on grounds where the residual impacts of the development are severe*" (DCLG, 2012).
- 7.1.11 It is concluded that the proposed extension of Ruislip High School would not be expected to have a detrimental impact in road safety, traffic and highway terms.

8.0 REFERENCES

- Chartered Institution of Highways and Transportation (CIHT), 2010. Manual for Streets 2: Wider Application of the Principles.
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Appendix I – Proposed Site Layout Plan

Notes.

Drawing to be read in conjunction with designer risk register



Plant schedule Species	Size & Spec.	Spacing	No.
NATIVE TREES			
Acer campestre 'Streetwise'	10-12 Select standard 3.0-3.5m height CG	as shown	8
Pyrus calleryana 'Chanticleer'	12-14 Heavy standard 3.5-4.0m height CG / BR, 2m clear stem	as shown	6
Orchard Trees (to be confirmed with school prior to tender)			
Apple: Bramleys Seedling	C10 Standard, 2m height		1
Apple: Worcester Pearmain	C10 Standard, 2m height		1
Pear: Williams Bon Chretien	C10 Standard, 2m height		1
Plum: Marjorie Seedling	C10 Standard, 2m height		1
NATIVE HEDGE			
Carpinus betulus	900-1200 BR	5 / lin m	185
LOW ORNAMENTAL SHRUB PLANTING			
Hebe Mrs Winder	200-300 C2	7/m2	70
PLANTER SENSORY PLANTING			
Alysicia citrodora	C2 bushy	7/m2	14
Artemisia vulgaris	C2 bushy	7/m2	14
Stachys byzantina	C2 bushy	7/m2	14
Lavandula angustifolia 'Hidcote'	C1 bushy	5/m2	10
Origanum vulgare 'Compactum'	C1 bushy	15/m2	30
Pennisetum alopecuroides Hamelin	C1 bushy	30-40cm	10
Rosmarinus officinalis	C1 bushy	5/m2	10
Rudbeckia fulgida sultii 'Goldsturm'	C1	10/m2	20
Salvia officinalis 'Purpurascens'	C2 bushy	7/m2	14
Silene tenuissima	C3 30-40cm	5/m2	10
Thymus citriodorus aurea	C1 20-30cm	15/m2	30
Salvia pratensis	C2 bushy	7/m2	7
Eryngium planum	C1	10/m2	10

Notes:

Landscape Implementation Guidelines.
The approved hard and soft landscaping scheme for the whole site shall be carried out prior to occupation of the building or during the first planting season following the full completion of building works, whichever is sooner.

All planting and landscape operations should comply with the requirements specified in BS 3936 (1992) Nursery Stock Part One, BS 4428 (1989) Code of Practice for General Landscape Operations (excluding hard surfaces) and BS8545 Trees from nursery to independence in the landscape.

Any plant species shown on the approved landscape scheme which within a period of 5 years from the completion of the development dies, is removed or in the opinion of the LPA becomes seriously damaged or diseased shall be replaced in the same place in the next planting season with identical species unless the LPA gives written consent to any variation.

Proposed Tree Planting
Stock size proposed is as shown.
Tree support for semi mature specimens shall be an underground strapped anchor system with ground anchors including an integrated irrigation and aeration system.
Other tree support to be two softwood stakes @ 7.5cm diameter @ 230cm length and should be driven into the ground to knee-height with ties and horizontal cross support.
Tree pit size to conform to BS8545 Trees from nursery to independence in the landscape.

Proposed Shrub and Hedge Row Planting
Hedge row planting to be planted as shown in the plant schedule, to be planted in the first available planting season following the occupation of the building or the completion of the development (whichever is sooner), in a minimum 450mm depth of clean topsoil, with a minimum of 50mm approved bark mulch applied.

Proposed Seeding / Turfing
Seeding / turfing to be carried out in the first available seeding / turfing season following the occupation of the building or the completion of the development (whichever is sooner), in a minimum 150mm depth of clean topsoil.

Additional Notes.

- Existing trees and vegetation to be retained are to be protected during construction to BS:5837:2012
- Any necessary tree works to be carried out by an approved tree surgeon to BS 3998.
- Trees, hedges and shrubs shown to be retained on the approved plan shall not be damaged, uprooted, felled, lopped or topped without the prior written consent of the local planning authority.
- If any retained tree, hedge or shrub is removed or severely damaged during construction work, or is found to be seriously diseased or dying, another tree, hedge or shrub shall be planted at the same place and shall be of a size and species to be agreed in writing by the Local Planning Authority and shall be planted in the first planting season following the completion of the development or the occupation of the buildings, whichever is the earlier.

Hard Landscape Legend

	Paving - Concrete slab paving 400 x 400mm, Natural grey colour. Tobermure textured slabs or similar approved
	Surfacing - Block paving to match existing
	Surfacing - Resin bound gravel
	Surfacing - Artificial grass sports pitch
	Edging - Concrete pin kerb 914 x 150 x 50mm

Soft Landscape Legend

	Furniture - Gero table and benches by Bailey Street Scene or similar approved
	Furniture - Gero bench by Bailey Street Scene or similar approved
	Furniture - Treeline bench components by Artform Urban, or similar approved
	Furniture - Perla Q tree grille by Artform Urban, galv & powder coated or similar approved
	Fencing - 1.45m high metal fence to match existing
	Proposed tree - refer to planting schedule
	Planting - Hedge Refer to plant schedule
	Planting - Shrubs Refer to plant schedule
	Grass - Lawn

Notes:

- 1 Drainage: Refer to Engineers drawings and specification
- 2 Highway / Civils works: Refer to Engineers drawings and specification
- 3 Sub bases and foundations: Refer to Engineers drawings and specification
- 4 Lighting / Mugs Lighting: Refer to M&E Engineers / Lighting Specialist drawings and specification
- 5 Refer to Project Health and Safety File for locations and details of existing services
- 6 Road marking whiteline: Refer to Engineers drawings and specification



Landscape Architect

ijla

M: 07906 477473 W: www.ijla.co.uk E: ian@ijla.co.uk

Contractors are not to scale from this drawing. All dimensions are to be checked on site. Any discrepancies, omissions and/or omissions between this drawing and information given elsewhere are to be reported to this office for clarification before proceeding.

STATUS:
PLANNING

Project Title:
Ruislip High School

Drawing Title:
Landscape Plan

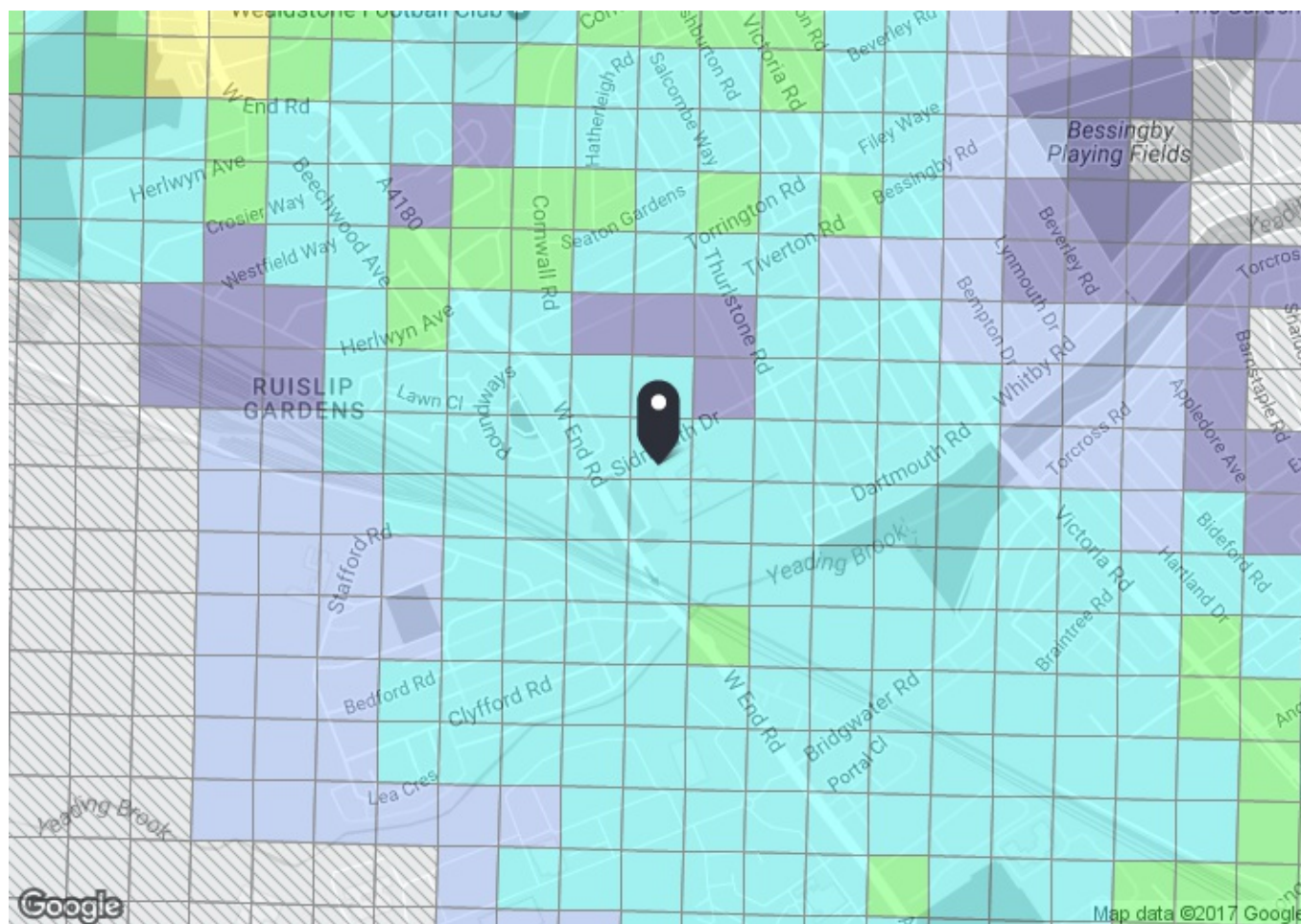
Sheet 1 of 2

Scale: 1:200@A0 **Drawn:** team

Date: May 17 **Revision:** P1

Drawing Number: M297-100 **Revision:** P1
Previous references:
1 - CRN/rev0170801/050-160089 - Ruislip High School - Option 7
Proposed v6 COPY.dwg - 3 -

Appendix 2 – PTAL Report



PTAL output for Base Year

2

Ruislip High School

Sidmouth Dr, Ruislip HA4 0BY, UK

Easting: 510143, Northing: 186110

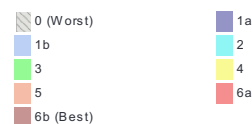
Grid Cell: 110189

Report generated: 09/05/2017

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Map key - PTAL



Map layers

PTAL (cell size: 100m)

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	BERKELEY CLOSE	E7	153.58	5	1.92	8	9.92	3.02	1	3.02
Bus	Victoria Rd Tiverton Rd	114	566.24	6	7.08	7	14.08	2.13	0.5	1.07
LUL	Ruislip Gardens	'Epping-WRuislip '	455.77	3	5.7	10.75	16.45	1.82	0.5	0.91
LUL	Ruislip Gardens	'RuislipGar-Epping '	455.77	1	5.7	30.75	36.45	0.82	0.5	0.41
LUL	Ruislip Gardens	'Debden-WRuislip '	455.77	0.33	5.7	91.66	97.36	0.31	0.5	0.15
LUL	Ruislip Gardens	'RuislipGdns-Debden '	455.77	0.33	5.7	91.66	97.36	0.31	0.5	0.15
LUL	Ruislip Gardens	'Loughton-WRuislip '	455.77	1	5.7	30.75	36.45	0.82	0.5	0.41
LUL	Ruislip Gardens	'RuislipGdns-Loughton'	455.77	0.67	5.7	45.53	51.22	0.59	0.5	0.29
LUL	Ruislip Gardens	'WRuislip-NewburyPark'	455.77	0.33	5.7	91.66	97.36	0.31	0.5	0.15
LUL	Ruislip Gardens	'Hainault-WRuislip '	455.77	3.33	5.7	9.76	15.46	1.94	1	1.94
LUL	Ruislip Gardens	'Hain-NP-RuislipGdns '	455.77	0.67	5.7	45.53	51.22	0.59	0.5	0.29
LUL	Ruislip Gardens	'GrangeHill-Wdtd-WRsp'	455.77	0.67	5.7	45.53	51.22	0.59	0.5	0.29
Total Grid Cell AI:										9.08

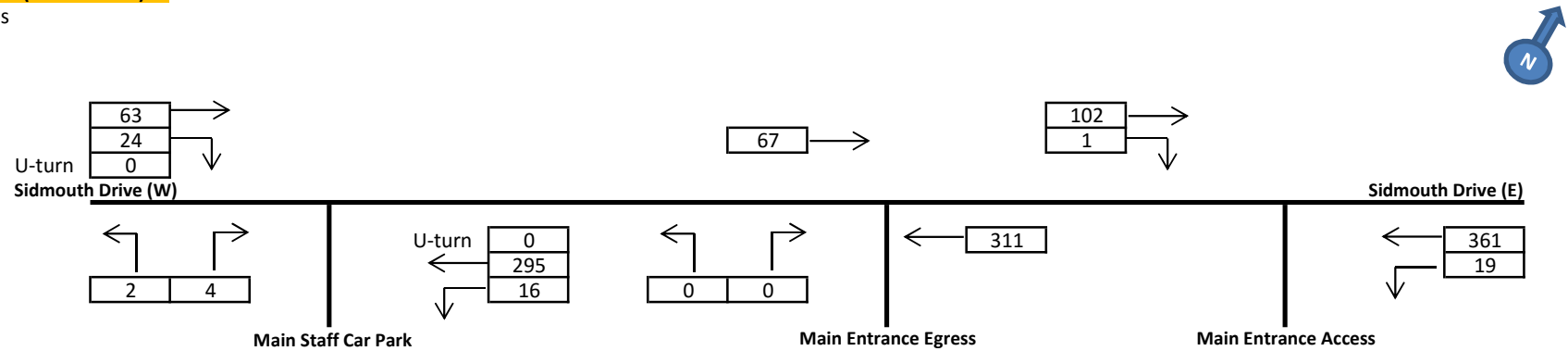
Appendix 3 – Collision Plot

Appendix 4 – Network Diagrams

2017 Existing

AM Peak (07:30-08:30)

Vehicles



2017 Existing

PM Peak (14:30-15:30)

Vehicles

