

**Project Title**  
**Turing House Free School**

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TA Scoping Report

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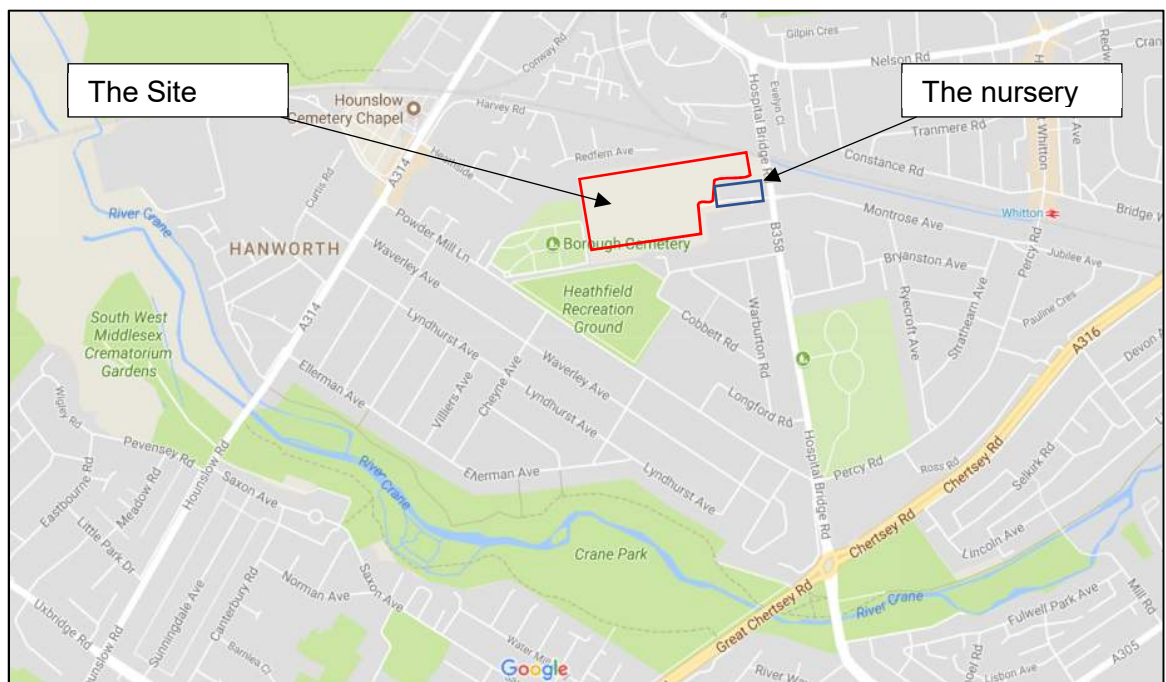
## **APPENDICES**

**APPENDIX A – PROPOSED SITE LAYOUT**

**APPENDIX B – TRAFFIC FLOWS DIAGRAMS**

## 1.0 INTRODUCTION

- 1.1 Robert West are acting as transport planning and highways consultants in relation to the development of a new five form of entry (5FE) secondary school with a sixth form, namely Turing Free House School (thereafter; the school).
- 1.2 The school is proposed to be located within Metropolitan Open Land at Hospital Bridge Road, within London Borough Richmond upon Thames (LBRuT). The site is located next to Bridge Farm Nursery (thereafter: the nursery). The site location is illustrated in Figure 1.1.



**Figure 1.1: Site Location**

- 1.3 The site is located to the west of Hospital Bridge Road and adjacent to the nursery. The wider area of the site is residential, with primary schools and a recreation ground.
- 1.4 The proposed school will provide 1,050 places for secondary students aged 11-18. The school is proposed as a 5FE school with 150 students' intake per year and 300 sixth form student places. The school will have 90 full-time equivalent (FTE) staff members at its full occupation.
- 1.5 The proposed development will consist of a single teaching block, a MUGA, playing and sports pitches, and other facilities. The site plan layout is presented in Appendix A. The existing access to the site is currently utilised by the nursery and is proposed to be redesigned to facilitate the shared use of both the school and the nursery. Other transport facilities, such as a pedestrian crossing on Hospital Bridge Road, are also under consideration as part of the development proposal.

- 1.6 The school opened in temporary accommodation in 2015 and has now grown to have three-year groups, with a total of 325 student places and is supported by 29FTE staff members. Further student intake from September 2018 will be accommodated on a second temporary site at the Clarendon School site on Hanworth Road. The second temporary site will be in operation for two years and will provide for 250 students.

### **Purpose of the report**

- 1.7 This Transport Scoping Report is intended to outline baseline conditions of the surrounding area of the permanent site, the proposed use of the site and the design of permanent teaching facilities. The report also summarises the trip generation, likely transport impacts and outlines the proposed mitigation measures. This report is intended to inform the pre-application meetings planned with LBRuT and Transport for London (TfL).
- 1.8 The planning application for the proposal will be supported by a Transport Assessment (TA), a School Travel Plan (STP), a Delivery and Servicing Plan (DSP), Car Park and Access Management Plan (CPAMP) and Outline Construction Logistic Plan (CLP).

### **Report structure**

- 1.9 Following this introduction, the remainder of this report is structured as follow:
- i. A review of the existing conditions of the site and the wider area is presented in Section 2.0, including accessibility by non-car modes.
  - ii. A description of the highway network and analysis of personal injury accident data is presented in Section 3.0.
  - iii. An outline of the development proposal in transport terms, including access, parking, drop-off/pick-up and servicing/delivery arrangements, is presented in Section 4.0.
  - iv. Trip generation is presented in Section 5.0.
  - v. Trip distribution is presented in Section 6.0.
  - vi. A summary of expected impacts and scope for other transport assessments expected to be required are set out in Section 7.0.
  - vii. The mitigation strategy is outline in Section 8.0.
  - viii. Section 9.0 provides the anticipated scope of the forthcoming TA.

## 2.0 SITE CONTEXT AND ACCESSIBILITY

2.1 This section describes the existing conditions of the local area and the accessibility of the site by non-car modes including walking, cycling and public transport. This section was informed by a site visit observation undertaken on Wednesday 19 June 2017 during the morning peak period.

### Site location

2.2 The site is located to the west of Hospital Bridge Road and to the south of the rail line, within LBRuT. The nursery is located at the south-east corner of the site and gains an access from Hospital Bridge Road. The wider area of the site is predominantly residential with a mix of green land and parks. There are three schools in close proximity of the site ie Bishop Perrin C of E Primary School (150m to the south), Heathfield Nursery and Infant and Junior Schools (400m to the south-west), and Twickenham Academy (650m to the south).

### Site accessibility

#### *Walking*

2.3 There is a continuous footway located on the eastern side of Hospital Bridge Road. The footway is approximately 2m wide, which widens to approximately 3.5m further to the south of the site. The footway continues to the north and runs over the rail line via a footbridge. The footway beyond the bridge has a reduced width and is separated from the carriageway by guard railing, which further reduces the effective width of the footway to approximately 1m.

2.4 The western footway on Hospital Bridge Road is not continuous. The footway to the south of the site is paved, in moderate to good condition, partially segregated with green verges and is of sufficient width to accommodate the current pedestrian demand. There is no footway for approximately a 180m section along the site frontage and to the north of the site beyond the rail bridge.

2.5 A zebra crossing, in a form of a raised table, is provided across Hospital Bridge Road and is located 140m to the south of the nursery site access. The zebra crossing has tactile paving, flashing beacons and guard railing in place on both sides of the crossing.

2.6 Signal controlled crossings are available at the junction with Percy Road and Powder Mill Lane, 640m to the south of the site, and at the signalised roundabout with Chertsey Road further to the south.

2.7 Hospital Bridge Road meets Montrose Avenue in the form of an uncontrolled junction, with access and egress lanes from Montrose Avenue being physically separated by a central island with landscaping. As a result of this, pedestrians need to cross access and egress lanes on Montrose Avenue separately, although being able to wait within the central island. Dropped kerbs are only provided to the northern and southern ends of the overall crossing and tactile paving is not provided at this location.

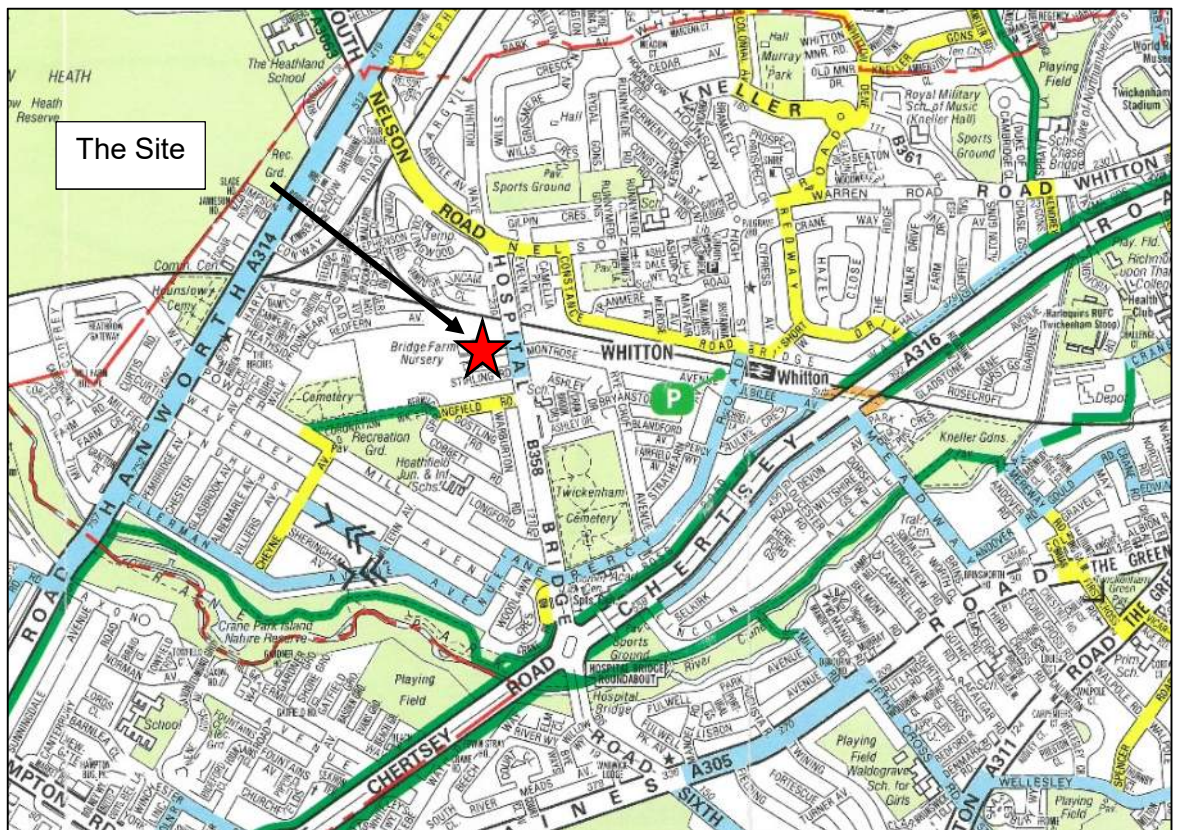
		
The zebra crossing, 140m to the south of the site	The eastern footway, to the north of the footbridge	The footbridge over the rail line
		
The western footway to the south of the site	The junction with Montrose Avenue	The uncontrolled crossing at the junction with Springfield Road

**Figure 2.1: Pedestrian facilities on Hospital Bridge Road in the vicinity of the site**

### *Cycling*

2.8 TfL Local Cycling Guide 9 highlights sections of Hospital Bridge Road, Percy Road, Ellerman Avenue, Hanworth Road, Lyndhurst Avenue and Powder Mill Lane as routes which are signed or marked for use by cyclists and comprise a mixture of quiet and busier roads. These routes are marked in blue and are presented in Figure 2.2.

- 2.9 Further cycle routes in the area are described as ‘routes which have been recommended by other cyclists’ and these include Springfield Road, Nelson Road and Constance Road. These routes are marked in yellow in Figure 2.2.
- 2.10 There are off-road routes (marked in green), these include a route connecting Springfield Road to Powder Mill Lane, routes along Chertsey Road and a route through Crane Park, to the south of the site. The network of off-road routes connects well with marked, signed and recommended cycle routes in the area surrounding the site, providing good cycle connections to wider residential areas.



**Figure 2.2: Cycle facilities in the area**

### Public transport facilities

#### Public Transport Accessibility Level (PTAL)

- 2.11 The PTAL assessment of the site was undertaken using the TfL database ([www.tfl.gov.uk/webcat](http://www.tfl.gov.uk/webcat)). The PTAL value is classified in bands ranging from 1a to 6b where 1a is the lowest level of accessibility (very poor) and 6b is the highest level of accessibility (excellent). A PTAL assessment indicated that the site has a rating of 1b (very poor).



## *Bus routes*

- 2.12 Bus stops are located on both sides on Hospital Bridge Road, with the nearest southbound bus stop located 52m to the south of the site (one minute walk) and the nearest northbound bus stops are located 250m to the north or to the south of the site (four minutes' walk). These stops provide bus cages, timetables and flags, and are served by route 481.
- 2.13 There are further bus routes available within the wider area which have not been considered within the PTAL assessment due to the distance to the bus stop being greater than 640m from the site (eight minutes' walk). These additional bus routes are listed below and, as these are located within a reasonable walking distance from the site, it is considered that they could still be used by students traveling to the school:
- i. Route H22 and 110 available from Hospital Bridge Road, to the south of the junction with Percy Road (720m east of the site, up to nine minutes' walk).
  - ii. Route 111 available from Hanworth Road (1190m west of the site, 15 minutes' walk).
  - iii. Route H28 available from Hanworth Road (1050 north-west of the site, 13 minutes' walk).
- 2.14 Whilst these bus stops are located outside of what is considered to be reasonable walking distance under the PTAL assessment, it is anticipated that students of secondary school age would be willing to walk further distances and use these bus services. Table 2.1 summarises the frequencies of the aforementioned routes during the standard school peak hours.

Route	Direction	AM peak frequency	Inter peak frequency
481	Towards West London Mental Health Trust	1	2
	Towards Cromwell Road Bus Station	2	2
H22	Towards Manor Road	4 – 6	4 - 6
	Towards Bell Road / Bell Corner	4 – 6	4 - 6
110	Towards West Middlesex Hospital	3	3
	Towards Hounslow Bus Station	3	3
111	Towards Heathrow Central Bus Station	5 – 8	5 - 8
	Towards Cromwell Road Bus Station	5 – 8	5 - 8
H28	Towards Tesco Osterley	3	3
	Towards Bulls Bridge Tesco	3	2
<b>Total</b>		<b>33 - 43</b>	<b>33 - 43</b>

**Table 2.1: Summary of bus services**

2.15 Table 2.1 shows that in the wider area there is a good provision of bus services, with over 30 buses per hour during the school peak periods. These services offer connections to Heathrow Central Bus Station, Cromwell Road Bus Station (Kingston), Hounslow and Richmond.

### *National Rail*

2.16 The nearest national rail station to the site is Whitton Station, located 750m (10 minutes' walk) to the east of the site, which can be reached via Montrose Avenue and Percy Road.

2.17 The station provides services towards Windsor & Eton Riverside and London Waterloo. These services run at approximately half hourly intervals to Windsor & Eton Riverside and Barnes Bridge and more frequent services are available to London Waterloo.

**Summary**

- 2.18 The wider area surrounding the site has a comprehensive network of footways, however, in the immediate area of the site has some constraints such as: the footway located on one side of Hospital Bridge Road, the footbridge across the rail bridge being in poor condition and restricted width of the footway on Hospital Bridge Road to the north of the footbridge.
- 2.19 The cycle network in the area of the site is comprehensive; it comprises a combination of on-road, off-road and recommended routes, and provides a good cycle connectivity to the residential neighbourhoods in the wider area.
- 2.20 The site is located in an area with PTAL rating of 1b, which takes account of one bus service only and rail services. However, it is noted that a further four bus services are located within 13 minutes' walk of the site, resulting in 33 – 43 services being available during the school peak periods.

### **3.0 LOCAL HIGHWAY NETWORK**

- 3.1 This section of the report provides a description of the local highway network, informed by site visit observation undertaken on 19 July 2017 and provides an analysis of PIA data in the surrounding area.

#### **Local highway network**

##### *Hospital Bridge Road*

- 3.2 Hospital Bridge Road lies to the east of the site and connects with Nelson Road to the north, in the form of a priority junction and with Great Chertsey Road to the south via a signalised roundabout.
- 3.3 The road is a single carriageway and in the vicinity of the development site the road is subject to a 30mph speed limit. 100m to the south of the site a 20mph zone commences. The speed restriction changes at point where the carriageway has speed mitigation measures in place (ie build outs and a refuge island at the zebra crossing. It is understood that the 20mph zone was implemented to reduce speed outside of the Bishop Perrin Church of England Primary School. Speed limit markings and school safety signage are present near this school.
- 3.4 The carriageway is mostly unrestricted in terms of parking with the exception of double yellow lines provided on the western side of the carriageway along a 35m long section to the south of the junction with Stirling Road.

##### *Hanworth Road*

- 3.5 Hanworth Road lies to the west of the site and connects with County Way to the south, and Grove Road to the north.
- 3.6 The road is a single carriageway and is subject to a 30mph speed limit and has on-road advisory cycle lanes on both sides of the road. There are sections of the road that are marked with single or double yellow lines; other sections of the road have parking bays and the road is used by buses.

##### *Montrose Avenue*

- 3.7 Montrose Avenue connects with Hospital Bridge Road at its western end and with Percy Road at its eastern end. The junction at the western end of the road lies directly opposite the nursery site access and Montrose Avenue has separated entry and exit lanes with a large landscaped island in the middle.

- 3.8 The majority of properties on this road are semi-detached houses that have access to off-street parking spaces accessed via driveways. As such, on-street parking capacity was observed to be available in the morning peak period.
- 3.9 The street has unrestricted parking with the exception of the section of road at the junction with Strathearn Avenue where double yellow lines are provided. The street is subject to a 30mph speed limit and has speed humps provided at frequent intervals along its length.

### *Springfield Road*

- 3.10 Springfield Road is located to the south of the proposed development. It is a residential road which merges with Cobbett Road at its western end and forms a priority junction with Hospital Bridge Road at the eastern end. Springfield Road, beyond the junction with Gostling Road operates as one-way road in a clockwise direction.
- 3.11 The street has a 20mph speed limit. It has unrestricted on-street parking, which takes place on the southern side of the carriageway, and within marked half-on footway parking bays on the northern side of the carriageway.

### *Other residential streets in the area*

- 3.12 As part of the site visit observation, other streets in the area were evaluated and it was determined that the majority of streets have unrestricted on-street parking and carriageways are of a reasonable geometry that allow for on-street parking without obstructing traffic movements.
- 3.13 Gostling Road has marked half-on footway parking, while Warburton Road, Longford Road, Ryecroft Avenue and Ashley Drive allow for on-road parking. Bryanstone Avenue is subject to single yellow line restrictions along the southern edge of the carriageway, which prevent parking from Monday to Friday between 11:00 and 12:00. It is anticipated that this parking restriction is designed to prevent commuter parking associated with Whitton Station. This restriction would not prevent pick-up or drop-off associated with the proposed development.
- 3.14 Desktop research suggests that on-street parking capacity is available; however, this will have to be confirmed through street inventory and parking beat survey, and submitted as part of the forthcoming planning application.



**Figure 3.1: Highway network in the vicinity of the site**

**PIA data**

3.15 PIA data was obtained from Crash Map for the most recent three-year period available (2014 - 2016) within a 400m radius of the site access. The severity of accidents have been summarised by year and are presented in Table 3.1.

Severity	Year (until end of August)			Total
	2014	2015	2016	
Fatal	0	0	0	0
Serious	0	0	0	0
Slight	2	1	0	3
<b>Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>

**Table 3.1: Number of accidents by severity and year**

3.16 Table 3.1 shows there were three slight accidents recorded in the study area, with no 'serious' or 'fatal' accidents. The results show a decrease in the number of accidents occurring over the three-year period, with none occurring in 2016.

3.17 Three casualties resulted from the three accidents, all of which were injured to a slight extent. Two of the three casualties were vulnerable road users (ie a pedestrian and motorcyclist).

3.18 The location of the accidents was reviewed and showed that none of the accidents occurred directly outside the site. Further analysis of the three accidents has been undertaken and the following was concluded:

- i. A slight accident occurred on Sunday 8 June 2014 at 13:40 on Hospital Bridge Road at the bridge. The accident involved two cars and resulted in slight injuries to one of the drivers.
  - ii. A slight accident occurred on Monday 24 November 2014 at 11:25 on Hospital Bridge Road, to the south of the loop-road which provides access to Ashley Drive. The accident involved a car, which was turning right, and a motorcycle, which was passing the car. The accident resulted in slight injuries to the motorcyclist.
  - iii. A slight accident occurred on Tuesday 5 May 2015 at 16:30 on Nelson Road, in the vicinity of the junction with Gilpin Crescent. The accident occurred when a pedestrian crossed the road, while masked by a stationary or parked vehicle, and was hit by a passing car.
- 3.19 One of the three accidents occurred at the weekend, whilst the remaining two occurred outside of school peak periods and did not suggest any trends in the accidents. The overall number of accidents in the area is considered low and does not suggest any road safety concerns. However, a new school with 1,050 students will result in increased travel demand in the area, which could potentially result in an increase in accident rate, and thus consideration of road safety features/measures is required.
- 3.20 More recent accident data record will be obtained from TfL and analysis updated in the TA.

**Site visit observations**

- 3.21 Site visit observation was made on Wednesday 19 July 2017 in the morning peak period. It is recognised that this time (the last week of the school term) is generally not considered as neutral, however, the three schools located in close proximity of the site (ie Bishop Perrin Primary School, Heathfield Nursery and Infant and Junior Schools, and Twickenham Academy) were all in operation on that day. As such the observation recorded during the site visit remain valid. The following was observed:
- i. Traffic flow along Hospital Bridge Road were observed to be moderate and no congestion was observed.
  - ii. On-street parking occupancy was moderate, with significant residual parking capacity being observed on Montrose Avenue.

- iii. Pedestrian movements along the eastern footway on Hospital Bridge Road was observed to be high for a short period of time. This short-term increase in pedestrian movements was associated with the operation of the nearby schools, with the majority of pedestrians being primary age students.
- iv. The pedestrian crossing point, located to the south of the site was observed to be well used by existing road users.

### **Summary**

- 3.22 The site is located within a residential area where the majority of properties have access to off-street parking. The majority of on-street parking in the vicinity of the site is not subject to parking restrictions, and as such residual parking capacity exists in the area.
- 3.23 The carriageway outside the development is subject to a 30mph speed limit, however, a 20mph zone is in place to the front of the Bishop Perrin Church of England Primary.
- 3.24 The review of PIA data determined that number of accidents that occurred within a 400m radius of the site in the last three years was low (i.e. three accidents). None of the accidents were associated with the operation of the schools. It is acknowledged that the risk of accidents occurring in the area may increase due to the expected increase in travel demand associated with the operation of the proposed school.



## 4.0 PROPOSAL

4.1 This section describes the proposed development of the school at its permanent location, including the description of the proposed access arrangements.

### Temporary and permanent locations of the school

4.2 The school is currently accommodated at the temporary site located at Livingston House on 2 Queens Road, Teddington, TW11 0LR. The school has been in operation for three years and has 325 students in Year 7, 8 and 9. A total of 31 teaching and supporting staff work at the site that equates to 29 FTE staff members.

4.3 This site is at capacity and cannot accommodate a further uplift in students. The Education and Skills Funding Agency (ESFA) have identified the Clarendon School as a second temporary site for the expansion of the Turing House School. The planning application has been submitted and permission granted with conditions. This expansion is for two years from September 2018 and will accommodate a maximum of 250 students for a period of two years.

4.4 The school is expected to operate from the new permanent site at Hospital Bridge Road from 2020. The school will then increase the student number intake to 150 students per academic year and will open a sixth form. This will result in a gradual increase of the school occupancy, until the school reach the proposed capacity of 1050 students in 2026. The summary of school occupancy, on a yearly basis, is presented in Table 4.1

Year		Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Total
2015	Temporary Sites	97							97
2016		128	100						228
2017		100	125	103					328
2018		125	100	125	103				453
2019		125	125	100	125	103			578
2020	Permanent Site	150	125	125	100	125	103		728
2021		150	150	125	125	100	125	103	878
2022		150	150	150	125	125	100	125	925
2023		150	150	150	150	125	125	100	950
2024		150	150	150	150	150	125	125	1000
2025		150	150	150	150	150	150	125	1025
2026		150	150	150	150	150	150	150	1050

**Table 4.1: Student numbers**

## School timetable

- 4.1 The operational hours of the school, including details of before and after school clubs/ activities, are outlined in Table 4.2 below.

Session/Group	Number of students	Start	Finish
Site opening	-	07:00	17:00
Staff arrival and departure times		07:00	17:00
Breakfast club	(current 5%, targeted 10%)	08:00	08:25
School day	All students	08:30	15:00
After-school club	(current 8%, targeted 10%)	15:30	16:15
After-school activities	(current 6%, targeted 10%)	15:15	16:15

**Table 4.2: School operating times**

## Catchment area

- 4.2 The school has been operating in the temporary accommodation since September 2015 and has an admissions policy which states that all applicants will be admitted if fewer than Published Admission Number (PAN).
- 4.3 Where the number of applications for admission is greater than the places available and after the agreed admission of any children with an Education, Health and Care Plan, the following oversubscription criteria will be applied in the order below:
- i. Looked-after children or children who were previously looked-after.
  - ii. Children who have an exceptional medical or social need requiring attendance at a particular school rather than any other school. Such needs must be supported, at the time of application, by reports or letters from suitable professionals such as GPs, consultants or social workers. Circumstances cannot be taken into account unless information is provided at the time of application and failure to provide such information at that stage may therefore affect whether or not the children are allocated places at the preferred schools. All information submitted will be regarded as confidential.
  - iii. Children whose parents have been granted Founders' Status of the school by the Secretary of State.

- iv. Children who have siblings (by which is meant full, step-, half- and adopted siblings living in the same household) at the school at the point of admission.
- v. Children (by which is meant full, step-, half- and adopted children living in the same household) of staff directly employed by Turing House school for two years or more before the admission application and still employed, without having given notice or been given notice that the employment will end, at the time the offer is made.
- vi. After the admission of children with Special Educational Needs and the application criteria 1-5, the remaining places will be allocated as follows:
  - a) 20% of student places will be allocated to those applicants whose home address is closest to the planned permanent site of the school. This point is defined as OS GRID Reference TQ 13577 73596.
  - b) 80% will be allocated to those applicants whose home address is closest to the Admissions Point for the school, TQ 15356 71392 (Somerset Gardens, Teddington).

4.4 The school received greater numbers of applications for the school year 2017/2018 than the number of available places and the number of applications for the academic year 2018/2019 is over 120 places.

#### **Development proposal**

4.5 The school site plan has been developed by Stride Treglown Architects and Ares Landscape Architects and is included in Appendix A.

#### **Car parking**

4.6 The proposed car park will be located to the front of the school building and will be accessed from Hospital Bridge Road.

4.7 The LBRuT Adopted Development Management Plan (DMP, adopted 2011) provides maximum parking standards for school developments and states that, for areas without a controlled parking zone, a maximum provision of one space per two staff members should be provided. The school is anticipated to have a total of 90FTE staff members and therefore 45 parking spaces are proposed for staff.

4.8 It is noted that the forthcoming revised Local Plan, while retaining the above standard, states that arrangements should be made for disabled and visitors parking spaces as per the London Plan. Thus, 5% of all bays should be provided as disabled bays and a further 5% as enlarged spaces, that can be converted to disabled spaces in the future. The school will provide three disabled spaces that will be located close to the school main entrance.

4.9 Facilities for the setting down of coaches will also be provided within the site car park.

### **Cycle parking**

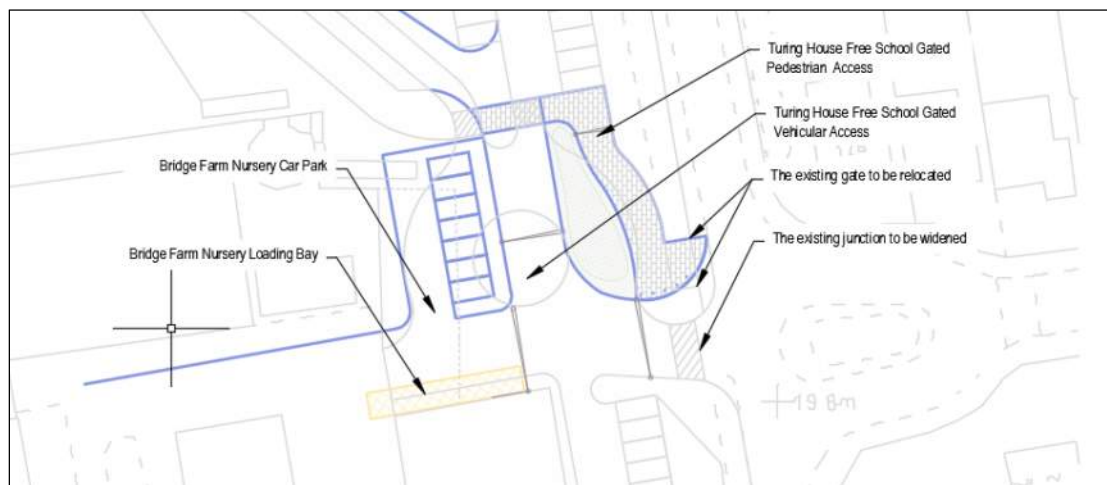
4.10 With regard to cycle parking, there are three policy documents which are relevant to this development: LBRuT DMP, LBRuT Draft Local Plan and The London Plan.

- i. According to LBRuT DMP, minimum standards for cycle parking at schools is 5 cycle parking spaces per one classroom. This would result in a minimum of 175 cycle parking spaces.
- ii. The London Plan requires that a minimum of one cycle space is provided per eight students and staff for long-term cycle parking, while a further one space should be provided per 100 students for short-term cycle parking. This would result in a minimum of 154 cycle parking spaces.
- iii. The draft Local Plan implements new cycle parking standards and these are proposed to be in line with the London Plan (ie as above).

4.11 The school will provide 154 cycle parking spaces on-site.

## Access arrangement

- 4.12 The proposed school will be located on a plot of land which neighbours with the nursery. Due to the difference in levels between the site and the road towards the north of the site access, vehicular access to the site is proposed to be maintained in its currently location and will be shared with the nursery.
- 4.13 The access junction will have a priority junction layout (ie T-junction) and it is proposed to be widened to a total width of 9m. This is required to ensure that turning movements to and from the site undertaken by heavy vehicles are unobstructed and passing movements between vehicles traveling in opposite directions are not possible. The indicative layout of the junction is illustrated in Figure 4.1 below. Highway works associated with the site access junction design would require Section 278 Agreement.
- 4.14 It is recognised that the access will be used by the nursery at the same time when students will be approaching the school during the school peak hours and therefore management measures will be proposed to ensure safe and efficient operation of the site access. This will be addressed in the CPAMP submitted along the TA.



**Figure 4.1: Proposed access arrangement to the site**

## Delivery and servicing

- 4.15 The school will have on-site delivery and servicing area sufficient to accommodate delivery and refuse collection. All vehicles will access the internal circulatory road in a clockwise direction and will be able to facilitate U-turn and leave the site in forward gear.
- 4.16 A DSP will be produced to provide the school with the management strategy and ensure that this activates take place in an effective and safe manner.

**Drop-off/Pick-up**

- 4.17 On-site drop-off and pick-up for students is not proposed. The school gates will be managed in the morning and afternoon to prevent unauthorised entry to the school grounds by vehicles. The only on-site drop-off envisaged would be for students with mobility impairments. These students would be dropped within the car park. A management regime associated with such access will be developed by the school if required.

**Summary**

- 4.18 The proposed site will provide a teaching block, various sports facilities, car parking, cycle parking, servicing area and landscaping. The school will have 45 parking spaces, which will be accessed from Hospital Bridge Road, Cycle parking will be provided in line with the draft Local Plan and London Plan (ie 154 cycle parking spaces).
- 4.19 The proposed access arrangements will be shared with the nursery and will maintain its current location and priority operation. Both the school and the nursery will have separate gating arrangements, so they can control access and operate independently. Pedestrian and cycle access to the school is proposed to be segregated from vehicular access.

## 5.0 TRIP GENERATION

5.1 This section presents the outcome of a trip generation exercise undertaken for the proposed school, utilising information collected from existing staff and students at the temporary site. A trip generation based on the comparable secondary schools within the borough was also derived for comparable purposes. These were based on two sets of information ie information available from Census 2011 and travel information provided by LBRuT extracted from STARS Travel Plans.

### Student travel behaviour

#### *Hands up survey*

5.2 The school undertook a 'hands up' survey in October 2017 and the survey was repeated in March 2018 for monitoring purposes. Both of the surveys recorded 100% response rates and the results are summarised in Table 5.1 below.

Mode of travel	Mode share (October 2017)		Mode share (March 2018)	
	%	Students	%	Students
Car/Motorcycle	12.0%	126	0.0%	0
Car Share	0.9%	10	1.0%	10
Park and Stride	2.2%	23	3.8%	40
Rail	4.3%	45	1.3%	13
Public Bus	56.3%	591	60.5%	635
Cycle	9.2%	97	9.9%	104
Scooter	1.2%	13	0.6%	7
Walking	13.9%	145	22.9%	241
<b>Total</b>	<b>100.0%*</b>	<b>1,050</b>	<b>100.0%</b>	<b>1050</b>

**Table 5.1: Student mode share data (\*Rounding has occurred)**

5.3 The mode share data recorded in October 2017 showed that 15.1% of student trips were made by car, including car sharing, and this mode share data was presented at the pre-app meetings with LBRuT and TfL in February 2018.

5.4 Based on the mode share data collected in October 2017, it is anticipated that once the school becomes fully operational it would generate 154 car trips (ie 126 car trips, 23 park and stride trips and five car share trips (assuming two students per vehicle), should the school sustain this proportion of car trips.

- 5.5 The school repeated the survey in March 2018 and the record showed that there is a reduction in the proportion of car trips generated by students. The school has implemented a School Travel Plan (STP) with a set of comprehensive initiatives and measures encouraging non-car travel to the school. This resulted in the school achieving a reduction of car trips from 15.1% to 4.8%. Should this mode share be achieved by the school at the temporary accommodation, the proportion of trips generated by the school at its full occupation, will result in 45 car trips.
- 5.6 Table 5.1 shows that the majority of students (56.3%/60.5%) will travel by public buses. The mode share data suggests that there will be demand for 104 bicycle and scooter parking spaces. It is also noted that the school recorded an increase in walking/scooting from 15.1% in October 2017 to 23.5% in March 2018.
- 5.7 It was agreed with TfL and LBRuT in principle that the mode share data at the temporary site will be used to predict trip generation for the school at the new permanent location. This student travel behaviour will be used to assess traffic and transport impacts in the forthcoming TA. However, it was also agreed that alternative methodologies to derive trip generation will be considered to ensure that the proposed approach is reasonable and provides a robust estimate.

#### *TRICS / TRAVEL*

- 5.8 As agreed at the pre-app meeting with LBRuT, both TRICS and TRAVEL database was checked for comparable sites. The majority of secondary school sites available within TRAVEL database are more than 6 years old, while the TRICS database provides a limited number of secondary school sites located in London and no sites within LBRuT. As such, data available from TRICS / TRAVEL is considered limited and are not considered relevant to the proposal.

#### *Census 2011*

- 5.9 Five secondary schools located within LBRuT, that operate sixth forms, were selected as comparable to the proposed Turing House School. Mode share data was extracted from Census 2011 and is summarised in Table 5.2.



School	PTAL	Car	Bus	Train	Cycle	Walk
Orleans Park School	4	7.0%	51.1%	0.5%	2.5%	38.7%
Grey Court School	1b	6.9%	54.4%	0.5%	11.1%	26.9%
Teddington Academy	0	4.9%	33.6%	1.4%	11.3%	48.7%
School A *	3	4.5%	47.7%	0.8%	4.4%	42.4%
School B *	2	5.3%	60.5%	0.8%	0.8%	32.4%
<b>Average</b>		<b>5.7%</b>	<b>49.5%</b>	<b>0.8%</b>	<b>6.0%</b>	<b>37.8%</b>

**Table 5.2: Student mode share data (Census 2011)**

\*Two of the schools wish not to be named and therefore are referenced as a School A and School B thereafter in the report

5.10 Mode share data for these schools showed that the majority of secondary students travel to the schools by buses and the average proportion accounts to an average of 49.5%. This is followed by walking trips that accounts to 37.8%. A proportion of trips made by car is low and on average accounts to 5.7% of all students.

### STARS LBRuT

5.11 More recent mode share data for the existing secondary schools within the borough was provided by LBRuT. This data was extracted from STARS STPs and is summarised in Table 5.3.

School	Survey date	PTAL	Car	Car share	Bus	Train	Cycle	Walk
Orleans Park School	28/11/2017	4	2.5%	0.4%	21.3%	0.8%	5.7%	69.4%
Grey Court School	19/10/2015	1b	8.4%	2.0%	44.2%	2.5%	10.6%	32.2%
Teddington Academy	17/01/2017	0	2.3%	1.2%	27.2%	1.7%	17.9%	49.7%
School A	08/06/2016	3	7.1%	0.7%	25.9%	2.9%	8.6%	54.8%
School B	29/11/2016	2	7.5%	1.6%	43.4%	5.4%	5.4%	36.5%
<b>Average</b>			<b>5.6%</b>	<b>1.2%</b>	<b>32.4%</b>	<b>2.7%</b>	<b>9.6%</b>	<b>48.5%</b>

**Table 5.3: Student mode share data (STARS Travel Plans)**

5.12 Mode share data for these schools showed the proportion of trips made by car (including car sharing) by secondary school students within the borough is low and on average accounts to 6.8% of all students. That the majority of secondary students travel to schools by buses or walk.

- 5.13 Although there are some changes in the proportion of trips by different modes at each of the schools when compared to the mode share data from Census 2011 (Table 5.2), the above conclusions remain valid for both of the data sets.
- 5.14 It should also be noted that the results summarised in Table 5.3 showed that there is no clear trend between the accessibility of the school by public transport (ie PTAL) and the proportion of students that travel by buses or cars. Orleans Park School is located in PTAL 4 and the least students use buses, whilst Grey Court School has one of the lowest levels of accessibility by public transport and yet has the highest proportion of students using buses. While Teddington Academy is located outside the PTAL, has the lowest in the borough proportion of car trips.
- 5.15 Based on the above, it can be concluded that good accessibility of the school to bus services is not a primary factor that influences the travel behaviours of students. The encouragement and management measures and effective STP are the key factors to influence mode share data at the school.
- 5.16 The Turing House School temporary site is located with PTAL 3, and the proportion of car trips recorded in October 2017 was 15.1%. The school has implemented a School Travel Plan, effectively monitored travel and strongly encouraged non-car travel in the last year. The most recent survey data collected in March 2018 showed that the school achieved a reduction of car trips to 4.8%, which is below the borough average of 6.8%.

#### *Sixth Form students travel behaviour*

- 5.17 Following the discussion with the LBRuT, we were advised to undertake a separate estimate for a trip generation for sixth form students. However, the 'hands up' surveys undertaken by the selected secondary schools did not provided a separate record for sixth form students. The only one school that has this record is Orleans Park School. A comparison of mode share data generated by secondary and sixth form students at this school is summarised in Table 5.4.

School	Car	Car share	Bus	Train	Cycle	Walk
Secondary students	2.6%	0.0%	37.9%	2.0%	7.8%	49.7%
Sixth form students	2.4%	0.0%	44.7%	3.5%	3.5%	45.9%

**Table 5.4: Secondary and sixth form students' mode share data at Orleans Park School**

- 5.18 Table 5.4 shows that secondary school students and sixth form students travel by comparable modes and for both car travel is comparable low.

- 5.19 As such, it was assumed that sixth form students at Turing House School will travel with the same modes as secondary students. This approach is expected to present a robust scenario, as typical trend is that sixth form students are more likely to travel independently, when compared to Year 7, or 8 students and therefore car trips are expected to be lower than for secondary age students.
- 5.20 To support the above, the school will not permit sixth form students to park on-site and all students will be expected to travel by non-car modes.

### *Summary*

- 5.21 Table 5.5 provides a summary of the car trip generation exercise carried out using different set of information.

School	Car
Turing House School (temporary location) October 2017	15.1%
Turing House School (temporary location) March 2018	4.8%
Census 2011 (Borough Average)	5.7%
LBRuT STPs (Borough Average) *including car sharing	6.8%

**Table 5.5: Summary of students' car mode share data**

- 5.22 The results showed that the borough average proportion of car trips among secondary school students is 5.7% / 6.8%. The survey carried out at the temporary school showed that 15.1% of students travel by car. This proportion is considered to be high when compared with other schools within the borough and the ongoing record of travel behaviours at the school already showed that the school has achieved a reduction of car trips 4.8%, which is lower than the borough average.
- 5.23 This is a common trend for new schools as the travel modes and catchment area are setting up over years. Typically, the catchment areas become more concentrated around the schools and in time a greater proportion of students travel by non-car modes. Walking and cycling modes tend to increase among the upper years at the schools as students gain more confidence to travel independently when compared to students in Years 7 and 8, which furthermore results in a reduction of car trips.
- 5.24 As such, it is expected that Turing House School will also follow this trend once relocated to the permanent site. For the purposes of the TA, it is assumed that travel behaviour recorded at the temporary site will be followed once the school is relocated to the permanent site and mode share data recorded in October 2017 (ie 15.1% of car trips) are likely to occur at the opening year.

5.25 It is however expected that in the following years, the school will continue to effectively reduce car-travel through the management measures (ie STP), as is currently happening at the temporary site, and by the time the school is fully occupied the proportion of car trips will reduce to 4.8% (ie in line with the survey data recorded in March 2018). The trip generation for the above two scenarios is summarised in Table 5.6.

Mode of travel	Opening Year (2020)		Full occupation (2024)	
	%	Students	%	Students
Car/Motorcycle	12.0%	87	0.0%	0
Car Share	0.9%	7	1.0%	10
Park and Stride	2.2%	16	3.8%	40
Rail	4.3%	31	1.3%	13
Public Bus	56.3%	410	60.5%	635
Cycle	9.2%	67	9.9%	104
Scooter	1.2%	9	0.6%	7
Walking	13.8%	101	22.9%	241
<b>Total</b>	<b>99.9%*</b>	<b>728</b>	<b>100.0%</b>	<b>1050</b>

**Table 5.6: Trip generation for students**

5.26 As such, it is expected that the school will have 728 students in 2020 when relocated to the permanent site, and 15.1% of students will travel by car, including car sharing. This will result in 110 person car trips, that amount to 106 car trips generated by students.

5.27 By the time the school achieve full occupation of 1050 students in 2026, car travel is expected to be reduced to 4.8%. The number of students expected to arrive by car is predicted to be 50. This amounts to 45 car trips generated by students.

5.28 Based on the above, it is concluded that in the opening year (2020) the school will have the highest impact on the surrounding area and therefore parking impact assessment and traffic impact assessment in the TA, if required, will be undertaken for two scenarios: the opening year 2020 and full operation year 2026.

### Staff travel behaviour

5.29 A travel survey was undertaken by staff in October 2017 and the survey was repeated in March 2018. The results for both surveys are presented in Table 5.7. At the time of the survey the school had 29FTE staff members. The number of staff anticipated to be required once the school is at full occupation is 90FTE.

Mode of travel	Survey October 2017 (%)	Future staff (90 FTE)	Survey March 2018 (%)	Future staff (90 FTE)
Car/Motorcycle	71.4%	64	28.1%	25
Car Share	0.0%	0	0.0%	0
Park & Stride	0.0%	0	6.3%	6
Rail	0.0%	0	0.0%	0
Public Bus	10.7%	10	25.0%	22
Cycle	10.7%	10	6.3%	6
Walking	7.1%	6	34.4%	31
<b>Total</b>	<b>99.9%*</b>	<b>90</b>	<b>100.0%</b>	<b>90*</b>

**Table 5.7: Staff mode share data (\*Rounding has occurred)**

- 5.30 Table 5.7 shows that in accordance with the survey undertaken in October 2017, the majority of staff travelled by private car (71.4%). Assuming that staff will follow this travel mode once the school is at its proposed capacity, it is anticipated that a total of 64 car trips will be generated by staff.
- 5.31 The survey that was undertaken in March 2018 showed a mode shift from cars to walking, cycling and buses, which resulted in the proportion of car trips reducing to 34.4%.
- 5.32 It is recognised that staff currently employed at the temporary site may present different travel behaviours once relocated to the permanent site and more staff members are employed. Thus, a Census of Population 2011 database was reviewed to understand travel modes of employees in the area of the proposed school. Travel mode information was extracted for staff working within the area of Whitton and arriving from LBRuT and London Borough of Hounslow (LBH). The mode share data are presented in Table 5.8.

Mode of travel	Survey October 2017 (%)	Future staff (90 FTE)
Car	48.7%	44
Car Passenger	2.7%	2
Rail/LUL	4.4%	4
Public Bus	11.0%	10
Cycle	6.7%	6
Motorcycle	0.8%	1
Walking	24.9%	22
Other	0.8%	1
<b>Total</b>	<b>100.0%</b>	<b>90</b>

**Table 5.7: Staff mode share data (Census 2011)**

5.33 The data in Table 5.8 showed that 51.4% of staff that work in the area of the proposed school travel by car, or car share. If these proportions are applied to the proposed staff number, the school will generate demand for 45 car parking spaces, which is in line with the proposed car parking provision. The second most popular travel mode is walking, or public transport. Cycling amount to 6.7%.

#### STARS LBRuT

5.34 More recent mode share data for staff at the existing secondary schools within the borough was provided by LBRuT and was extracted from STARS STPs. These are summarised in Table 5.9.

School	Survey date	PTAL	Car	Car share	Bus	Train	Cycle	Walk
Orleans Park School	28/11/2017	4	46.9%	3.1%	12.3%	10.8%	14.6%	12.3%
Grey Court School	19/10/2015	1b	63.0%	6.8%	6.2%	5.5%	15.1%	3.4%
Teddington Academy	17/01/2017	0	42.2%	3.9%	6.5%	13.6%	16.2%	17.5%
School A	08/06/2016	3	49.5%	0.0%	4.9%	11.7%	19.4%	14.6%
School B	29/11/2016	2	49.3%	2.9%	7.2%	13.0%	14.5%	13.0%
<b>Average</b>			<b>50.2%</b>	<b>3.3%</b>	<b>7.4%</b>	<b>10.9%</b>	<b>16.0%</b>	<b>12.2%</b>

**Table 5.9: Staff mode share data (STARS Travel Plans)**

5.35 The data in Table 5.9 showed that 53.5% of staff that work in secondary schools within LBRuT, travel by car, or car share. The second most popular travel mode is walking, or cycling.

### Summary

5.36 Although the staff survey carried out in October 2017 showed that 71.4% of staff travel by car, the most recent data showed that 34.4% currently travel by car. It is recognised that once the school is relocated to the permanent site staff will be expected to travel in the same way. However, to ensure that the case presented in the TA is robust, the assessment is proposed to be undertaken in accordance with mode share data obtained from STARS STPs at other schools. The predicted trip generation by staff is presented in Table 5.10.

Mode of travel	Survey October 2017 (%)	Future staff (90 FTE)
Car	50.2%	45
Car Passenger	3.3%	3
Rail/LUL	10.9%	10
Public Bus	7.4%	7
Cycle	16.0%	14
Walking	12.2%	11
<b>Total</b>	<b>100.0%</b>	<b>90</b>

**Table 5.10: Staff trip generation**

5.37 The school will have 45 car parking spaces on-site and parking on-street will be discouraged, therefore the school will aim to have a maximum 50% of car trips. Based on the hands up survey data recorded at the temporary site, it has been shown that the school can effectively manage staff travel behaviours to reduce car travel to the permanent site and ensure that parking demand is fully accommodated within the school site and overspill parking does not occur on-street.

### Daily car trip profile

5.38 The arrival and departure profile of car trips generated by the school, at its opening year and full occupation year, are set out in Tables 5.11 and 5.12. The distribution of trips was estimated based on the timetable that the school currently operates (see Table 4.2) at the temporary site and staggering start and finish has not been considered at this stage. However, it is recognised that this may be required to address transport impacts (ie parking or pedestrian impacts) and will be considered to address any adverse impacts should these be identified.

Time	Opening Year 2020				Full Operation 2024			
	Students		Staff		Students		Staff	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
06:30 – 06:45	0	0	0	0	0	0	0	0
06:45 – 07:00	0	0	0	0	0	0	0	0
07:00 – 07:15	0	0	45	0	0	0	45	0
07:15 – 07:30	0	0	0	0	0	0	0	0
07:30 – 07:45	0	0	0	0	0	0	0	0
07:45 – 08:00	11	11	0	0	4	4	0	0
08:00 – 08:15	0	0	0	0	0	0	0	0
08:15 – 08:30	95	95	0	0	41	41	0	0
08:30 – 08:45	0	0	0	0	0	0	0	0
08:45 – 09:00	0	0	0	0	0	0	0	0
<b>Total</b>	<b>106</b>	<b>106</b>	<b>45</b>	<b>0</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>0</b>

**Table 5.11: Car trips to and from the school in the morning peak period**



Time	Opening Year 2020				Full Operation 2024			
	Students		Staff		Students		Staff	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
14:30 – 14:45	0	0	0	0	0	0	0	0
14:45 – 15:00	84	42	0	0	36	18	0	0
15:00 – 15:15	0	42	0	0	0	18	0	0
15:15 – 15:30	0	0	0	0	0	0	0	0
15:30 – 15:45	0	0	0	0	0	0	0	0
15:45 – 16:00	0	0	0	0	0	0	0	0
16:00 – 16:15	11	0	0	0	5	0	0	0
16:15 – 16:30	11	22	0	0	5	9	0	0
16:30 – 16:45	0	0	0	0	0	0	0	0
16:45 – 17:00	0	0	0	0	0	0	0	0
17:00 – 17:15	0	0	0	45	0	0	0	45
17:15 – 17:30	0	0	0	0	0	0	0	0
17:30 – 17:45	0	0	0	0	0	0	0	0
17:45 – 18:00	0	0	0	0	0	0	0	0
<b>Total</b>	<b>106</b>	<b>106</b>	<b>0</b>	<b>44</b>	<b>45</b>	<b>45</b>	<b>0</b>	<b>44</b>

**Table 5.12: Car trips to and from the school in the afternoon peak period**

5.39 The above tables demonstrate that the proposed school is expected to have the highest traffic impact on the local highway network between 07:30 and 08:30 in the morning peak and between 14:30 and 15:30 in the afternoon peak. A limited traffic and parking impact is expected during the evening peak hour.

### School catchment area

#### *Postcode data analysis*

5.40 Postcode data for students and staff was provided by the school and included both students and staff that currently attend the temporary location at Livingston House and applicants that applied for a school place from the next academic year (2018/2019) to attend at the temporary school site at Clarendon School.

5.41 This postcode data was analysed and a summary of distances that staff and students currently travel are summarised in Table 5.13. The postcode data was also analysed in relation to the proposed permanent site and is summarised in Table 5.14.

		Distance from the school (temporary locations)				
		0 – 1km	1 – 2km	2 – 5km	5km+	Total
Students (Livingston House)	Number	42	75	205	4	326
	%	12.9%	23.0%	62.9%	1.2%	100.0%
Students (Applicants for Clarendon site)	Number	24	46	51	0	121
	%	19.8%	38.0%	42.1%	0%	100.0%
Staff (Livingston House)	Number	3	0	14	12	29
	%	10.3%	0.0%	48.3%	41.4%	100.0%

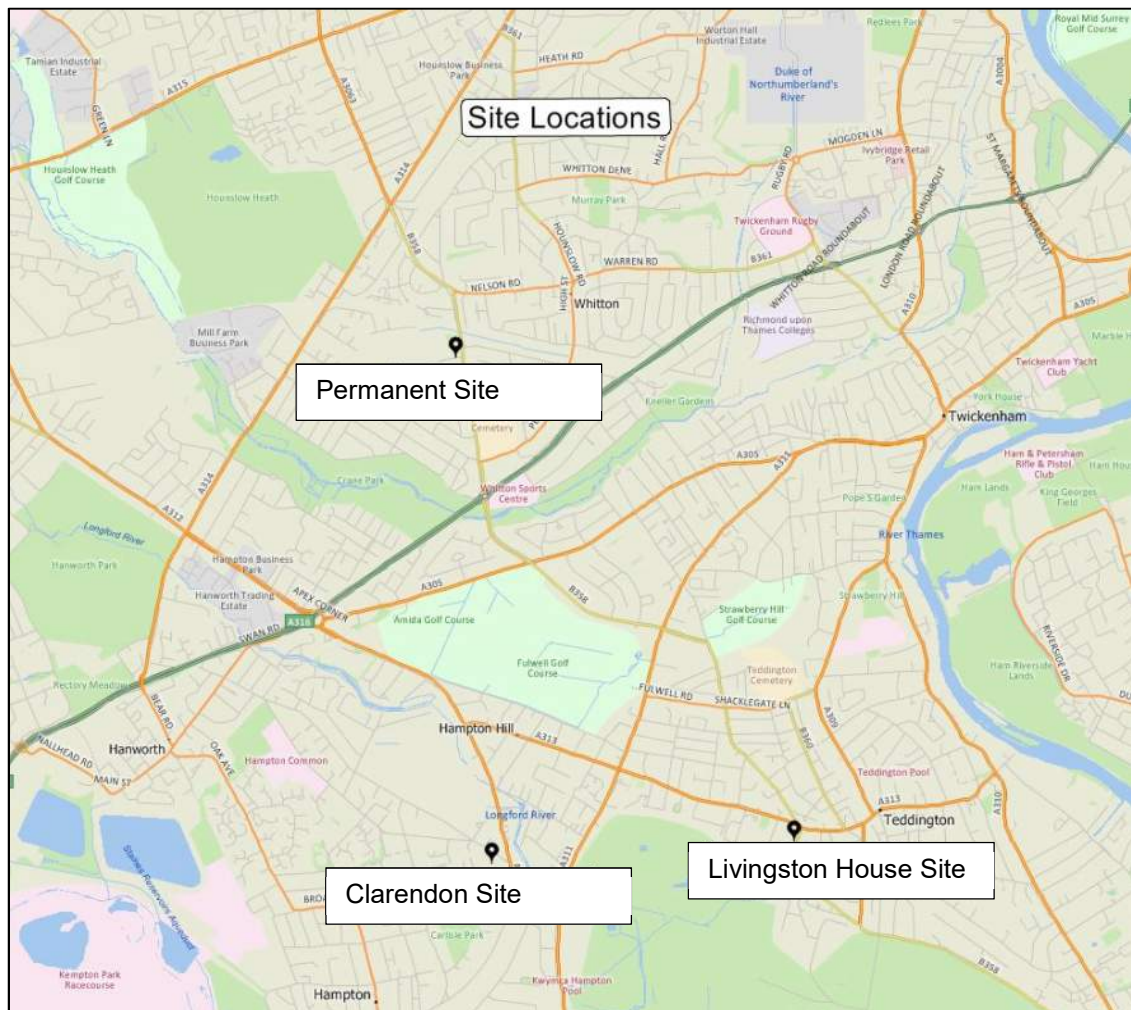
**Table 5.13: School postcode data analysis (temporary locations)**

		Distance from school (permanent location)				
		0 – 1km	1 – 2km	2 – 5km	5km+	Total
Students	Number	45	111	168	2	326
	%	13.8%	34.0%	51.5%	0.6%	100.0%*
Students (Applicants for Clarendon site)	Number	24	26	71	0	121
	%	19.8%	21.5%	58.7%	0%	100.0%
Staff	Number	1	2	9	17	29
	%	3.4%	6.9%	31.0%	58.6%	100.0%*

**Table 5.14: School postcode data analysis (proposed permanent location) (\*Rounding has occurred)**

5.42 When comparing the distances that students currently travel to the school (Table 5.13) and distances that students will be required to travel once relocated to the permanent site (Table 5.14), it is evident that the proportion of students living within 1km of the sites (both temporary sites and permanent site) is anticipated to remain stable.

5.43 It is also noted that the proportion of students living within 1km distance of the existing temporary school (13.8%) is almost half of the proportion of students who currently walk to school (22.9%). This shows that students that currently live outside of 1km distance of the school walk to school. Figure 5.1 shows the locations of the temporary and permanent sites.



**Figure 5.1: Site Locations**

- 5.44 This trend in travel behaviours shows that the school effectively promotes and encourages walking to the school and will continue to do so once the school is re-located to the permanent site.
- 5.45 It is noted that the existing staff are anticipated to live further away from the proposed site when compared with the temporary site. However, it is a typical trend for staff to live further away from school sites than students and as such this is not unexpected and is unlikely to have an impact on staff travel modes to the school.

**Summary**

- 5.46 The existing school is operating with a total of 325 students and 29 FTE staff members at the temporary site. The school received a planning permission to open a second temporary site at Clarendon School and over 120 students applied to attend the school in the next academic year 2018/2019.

- 5.47 The school has carried out travel surveys in October 2017 and March 2018 and showed that the school received a reduction of car trips from 15.1% to 4.8%. This trend was also observed amongst staff and a reduction of car trips from 71.4% to 34.4% was recorded.
- 5.48 Travel behaviour of students at other secondary schools within the borough was investigated (through Census 2011 data base and STARS Travel Plans) and showed that the Turing House School after three years from opening at the temporary site achieved a lower than the borough-wide average proportion of car trips.
- 5.49 A comprehensive analysis of student postcode data was undertaken to understand whether they will be able to travel in the same way once relocated to the permanent site. The analysis showed that students will travel comparable distances and more students will be located closer to the site which is expected to have a positive impact on the proportion of walking and cycling trips to the site.
- 5.50 The school located at the temporary site has achieved a mode shift towards non-car travel and this trend is expected to be followed once the school is relocated to the permanent site. This is a common trend as students travel behaviours and catchment area will settle in a few years from opening.
- 5.51 As such, it is expected that the school will generate 15.1% of car trips by students (728 students) at the opening year (2020) and achieve a reduction of car trips to 4.8% by the time when the school achieve a proposed capacity of 1050 students in 2026. On this basis the school is expected to generate 106 car trips by students at the opening year and 45 car trips at full operation year.
- 5.52 34.4% of the existing staff travel by car, which is lower than the average car travel generated by employees in the area of the development (ie 51.4%), or recorded at other secondary school within the borough (53.5%). For the assessment purpose, it is proposed to use data from other secondary schools within the borough to present a robust assessment case in the TA. On this basis, the school is expected to generate 45 car trips to and from the site by staff.

## 6.0 DISTRIBUTION OF TRIPS

6.1 This section presents the distribution of trips generated by the proposed development.

### **Distribution of car trips**

6.2 As discussed in above section, the school is expected to result in car trips generated by staff and students, and the majority of these are expected to occur in the morning and afternoon school peak periods.

6.3 In the opening year 2020, the school will have 728 students and would generate 106 cars by students and 45 by staff. In the following years the school will continue to increase the number of students on a phased basis and by 2026 is expected to operate at proposed capacity of 1050 students. It is expected that by this time the school will achieve a reduction in car trips and generate 45 student car trips and 45 staff car trips.

6.4 As identified in Section 4.0, the school has established an admission policy which will be a factor in defining the catchment area. The correspondence with the school and the school trust confirmed that the school will continue with the same admission criteria once relocated to the permanent site. This indicates that the school catchment area and distances that students travel to the school will remain comparable to the current distances.

6.5 Through the discussion with LBRuT, it was agreed that a traffic impact assessment of the road network in the immediate area of the site is not required, with the exception of the proposed site access.

6.6 Through the discussion with TfL it was agreed that more evidence on the level of vehicular impact on the surrounding road network is required to understand the net traffic impact on any specific junction in the area and in particular at the roundabout with Great Chertsey Road. This information will form the basis for TfL to confirm whether a traffic impact capacity assessment for any junction in the area, using modelling techniques, will be required.

6.7 As such, vehicular trips generated by the school were distributed on the surrounding road network based on the catchment area and staff/students postcode data received from the school.

6.8 The morning and afternoon peak hours were identified based on the peak traffic flows generated by the school (see Tables 5.1 and 5.12) and these are as follow:

i. The morning peak hour between 07:30 and 08:30

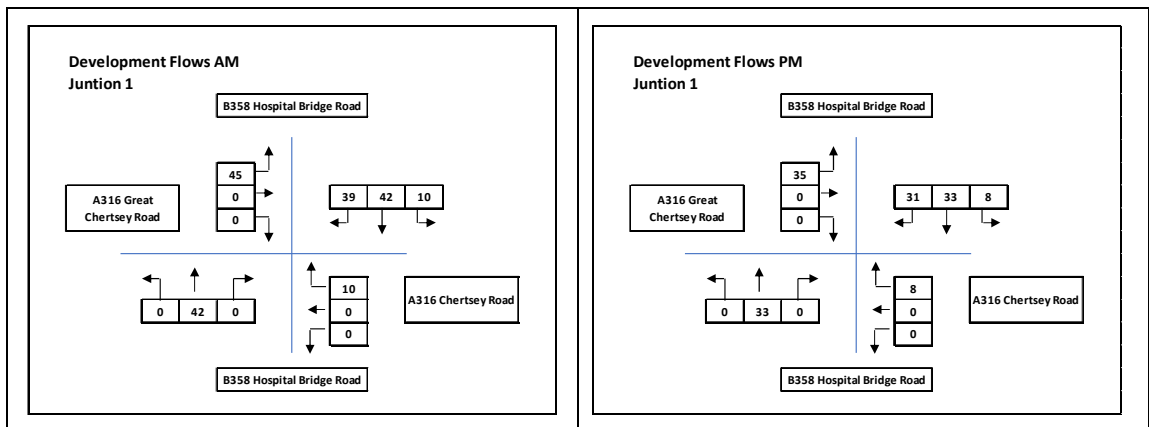
c) The afternoon peak hour between 14:30 and 15:30

6.9 Car trips distribution was undertaken based on the postcode data of both: the existing students that currently attend the school at Livingston House and the prospective students that intend to attend the school proposed at the Clarendon School. The assumptions that all pupils who live within 1km of the site and within 500m radius of a bus stop which is served by a direct bus service to the site, will travel by non-car modes (ie walking, buses). The remaining postcode data was considered to estimate car routes to the site and informed the distribution of car trips on the road network. The distribution of car trips was derived as follow:

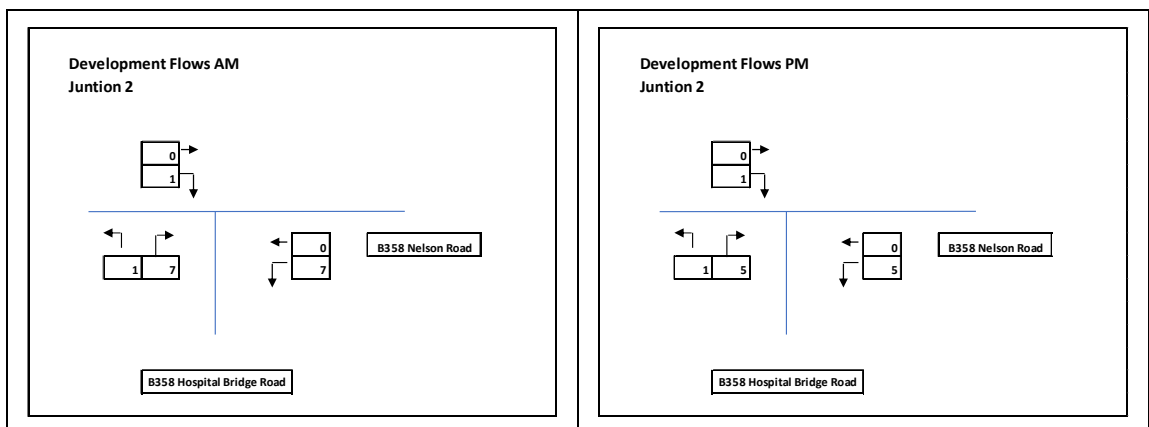
- i. 10% of all students will arrive from the south-east, via the roundabout of Hospital Bridge Road, Great Chertsey Road, Sixth Cross Road and Chertsey Road (thereafter Junction 1) and turn right from Chertsey Road to Hospital Road Bridge. These students are expected to be dropped-off within residential streets in the vicinity of the site and return via the same route.
- ii. 40% of all students will arrive from the south, via the Junction 1, and travel straight ahead along Hospital Road Bridge. These students are expected to be dropped-off within residential streets in the vicinity of the site and return via the same route.
- iii. 35% of all students will arrive from the south, via the Junction 1, and turn left from Great Chertsey Road to Hospital Road Bridge. These students are expected to be dropped-off within residential streets in the vicinity of the site and return via the same route.
- iv. 5% of all students will arrive from the south-west, via the Junction 1, and turn left from Great Chertsey Road to Hospital Road Bridge. These students are expected to be dropped-off within residential streets in the vicinity of the site (ie Power Mill Road). These students will continue the journey via Powder Mill Lane, Hounslow Road to return to A316. These cars will not travel via Junction 1 on the returning trip.
- v. 6% of all students will arrive from the north-east via the junction of Nelson Road and Hospital Bridge Road (thereafter Junction 2) and turn left from Nelson Road to Hospital Bridge Road. These students are expected to be dropped-off within residential streets in the vicinity of the site (ie Montrose Avenue) and return via the same route.

- vi. 1% of all students will arrive from the north via the Junction 2 and turn right from Nelson Road to Hospital Bridge Road. These students are expected to be dropped-off within residential streets in the vicinity of the site (ie Montrose Avenue) and return via the same route.
- vii. 3% of all students will arrive from the west via Hounslow Road and Power Mill Lane. These students are expected to be dropped-off within residential streets in the vicinity of the site (ie Power Mill Lane) and continue the returning journey via Hospital Bridge Road and turning right to Great Chertsey Road at Junction 1.

6.10 The vehicular trips were distributed as outlined above and a net traffic impact at Junction 1 and 2 is presented in Figures 6.1 and 6.2 respectively.



**Figure 6.1: Traffic flows at Junction 1**



**Table 6.2: Traffic flows at Junction 2**

6.11 Traffic flows distribution at the Junction 1 showed that proposed school will generate 189 car movements through the junction in the morning peak and 150 car trips in the afternoon peak period. These movements include arrivals and departures to and from the site.

- 6.12 The LAEI data showed that AADT on Chertsey Road are greater than 24,000. Assuming that 15% of these trips occur in the morning peak (circa 3,600), and the development will generate 84 and 67 two-way movements on this road in the morning peak in the opening year 2020 and at full operation in 2026 respectively. This is equivalent to be between 2% and 3% of traffic impact. This level of impact is considered to be non-material and is expected to be accommodated within the daily variation of traffic flows.
- 6.13 Traffic flows distribution at the Junction 2 showed that the proposed school will generate 15 two-way car trips through the junction in the morning peak and 12 car trips in the afternoon peak period in the opening year 2020. This level of impact is considered to have a non-material impact.
- 6.14 The traffic impact generated by the school on other junctions in the area of the school is presented on the traffic flows diagrams included in Appendix B.

#### **Distribution of public transport trips**

- 6.15 As presented in Section 2.0, the site has PTAL 1b and is served by five different bus routes. The accessibility to these bus routes is summarised below:
- i. Bus route 481 stops on Hospital Bridge Road Based in close proximity of the site (ie 3 minutes' walk).
  - ii. Bus routes H22 and 110 stops on Hospital Bridge Road, just to the south of the junction with Percy Road. These stops are located just outside of the PTAL assessment area ie 720m from the site (ie 9 minutes' walk).
  - iii. Bus route 111 stops on Hanworth Road (bus stops C and L), and the distance to the school main entrance is 1190m (ie 15 minutes' walk). Alternatively, students could board/alight the buses at bus stops located to the north of the junction with Nelson Road (bus stops A and N) and walk to the main entrance of the school. This distance is slightly shorter (ie 1050m) and theoretically should take 1-2 minutes less, however, this route requires crossing Nelson Road and Hanworth Road at its junctions, crossing Hospital Bridge Road at two locations and using two footbridges. Furthermore, the sections of footways on Nelson Road and Hospital Bridge Road have footways on one-side of the road only and its width is restricted due to existing guardrailing. The other route, from bus stops C and L located on Hanworth Road, will require crossing the road at one location (ie Hanworth Road) and half of the journey is via a traffic free route through Heathfield Recreation Ground. This route, although slightly longer, will be the preferred route for students arriving by bus route 111 and the school will promote it through the STP.



- iv. Bus route H28 stops on Hanworth Road (bus stops A and N) to the north of the junction with Nelson Road and students will walk to the main entrance of the school (ie 15 minutes' walk). These students will walk via the footbridge along Hospital Bridge Road.
- 6.16 Based on the most recent students travel data, 60.5% of students travel by public buses to and from the school. It is noted that the temporary site has PTAL 3 and the site and is served by six direct bus routes that provide 29-37 buses per hour in both directions.
- 6.17 The proposed permanent site is located in PTAL 1b and the site and is served by five direct bus routes that provide 33-43 buses per hour in both directions, however as the bus stops are located further away from the site this results in the site having a lower PTAL. On that basis, it can be concluded that students will have comparable accessibility to public transport service once relocated to the permanent site, however, they will be required to walk longer distances to and from the bus stops.
- 6.18 Though the discussion with the TfL, it was confirmed that the area was identified for improvements to bus service and its capacity, however, this is still in 'work in progress' stage and no details are available at this stage.
- 6.19 In addition to the postcode data analysis included in Section 5.0, an additional analysis was undertaken to understand the proportion of students that could potentially travel by buses once the school is relocated to the permanent site. The results of this analysis were used to assess the impact on the bus routes and estimate the number of additional students that would generate impact on any particular bus route.
- 6.20 The analysis was undertaken based on the currently available bus services in the area. However, should new bus routes be introduced, or capacity of the existing services increased it will result in lower impact than presented in this assessment. The case presented should therefore be considered robust.
- 6.21 The following assumptions were made in the analysis:
- i. Postcode data of the existing students attending the temporary site and the prospective students that intend to attend the Clarendon School site has been analysed to estimate the usage of individual bus routes that directly serve the proposed school site.
  - ii. Postcode data located within the circa 1km distance from the site was excluded as students from this area will be expected to walk or cycle to the site.

- iii. For the purpose of this analysis a 500m radius area (as the crow flies) was used to estimate the bus stops walking catchment area.
- iv. The bus routes, bus stops and postcode data of the existing students were mapped and where a bus stop serves more than one bus route that provide the same service they were proportionally split across these bus routes according to the frequency of service for each of the routes.

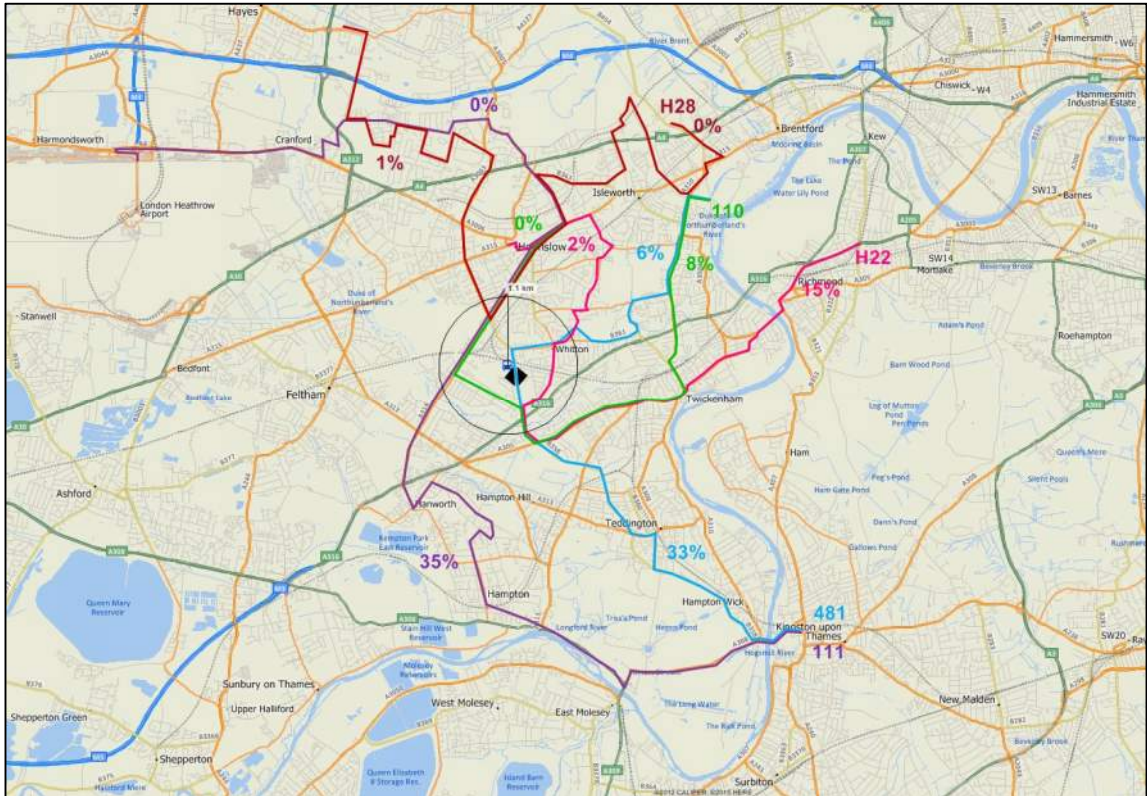
6.22 The analysis allowed us to estimate the proportion of students for whom traveling by buses is a feasible option and also allowed an estimate of the number of additional students that are expected to travel on a particular route and per each direction.

6.23 While the existing mode share data collected by the school indicates that 60.1% of students currently travel by bus, the analysis of postcode data in relation to the permanent site suggested that a comparable proportion of students (61%) will be located within the bus catchment area and could travel by bus to and from the permanent site. Table 6.1 presents the outcomes of the analysis, with the percentage split per route applied to the 60.5% of potential bus users.

Bus Route	Direction	Postcodes assigned to bus routes	%	Students impact on bus routes
481	East of site	15	5.5%	35
	South of site	90	32.9%	209
H22	North of site	6	2.2%	14
	East of site	41	15.1%	96
110	East of site	23	8.4%	53
	West of site	0	0.0%	0
111	North of site	0	0.0%	0
	South of site	95	34.8%	221
H28	North-east of site	0	0.0%	0
	North-west of site	3	1.1%	7
Total		273	100.0%	635

**Table 6.1: Predicted demand on bus routes**

6.24 Table 6.1 shows that the highest number of students will approach the site using bus route 111 and will arrive from the south (34.8%). The route 481 is anticipated to receive the second highest number of students (32.9%), also arriving from the south. Demand for the bus services from the north, east and west of the site is expected to be much lower. Figure 6.3 is a graphical presentation of data summarised in Table 6.1 above.



**Figure 6.3: Predicted demand on bus routes**

6.25 The analysis has determined that bus routes 481, H22 and 110 would be boarded and alighted to the south or east of the proposed site and would not require students to use the footbridge on Hospital Bridge Road.

6.26 The remaining two routes identified, route 111 could board and alight to the north of the proposed site (bus stops A and N on Hanworth Road) and would most likely require the use of the footbridge in order to access the school. Alternatively students could board and alight from the bus stops C and L on Hanworth Road and access the school via a footpath through Heathfield Recreation Ground. Promotion of this route via the Recreation ground will form part for the transport strategy of the school to ensure that impact on the footbridge on Hospital Bridge Road is minimised and students are using the route that has greater residual capacity.

6.27 Tables 6.2 and 6.3 present the impact on each bus route and estimate the number of student trips per bus route in each direction for the morning and afternoon peak periods respectively.

Bus route	Route Section	Direction	Morning peak		
			Buses per hour (average)	Proposed Student Trips	Additional Passengers per bus
481	East of site	Towards Cromwell Road Bus Station	2	35	17
	South of site	Towards West London Mental Health Trust	1	209	209
H22	North of site	Towards Manor Road	5	14	3
	East of site	Towards Bell Road / Bell Corner	5	96	19
110	East of site	Towards Hounslow Bus Station	3	53	18
	West of site	Towards West Middlesex Hospital	3	0	0
111	North of site	Towards Heathrow Central Bus Station	6.5	0	0
	South of site	Towards Cromwell Road Bus Station	6.5	221	34
H28	North-east of site	Towards Bulls Bridge Tesco	3	0	0
	North-west of site	Towards Tesco Osterley	3	7	2

**Table 6.2: Distribution of bus trips (morning peak)**

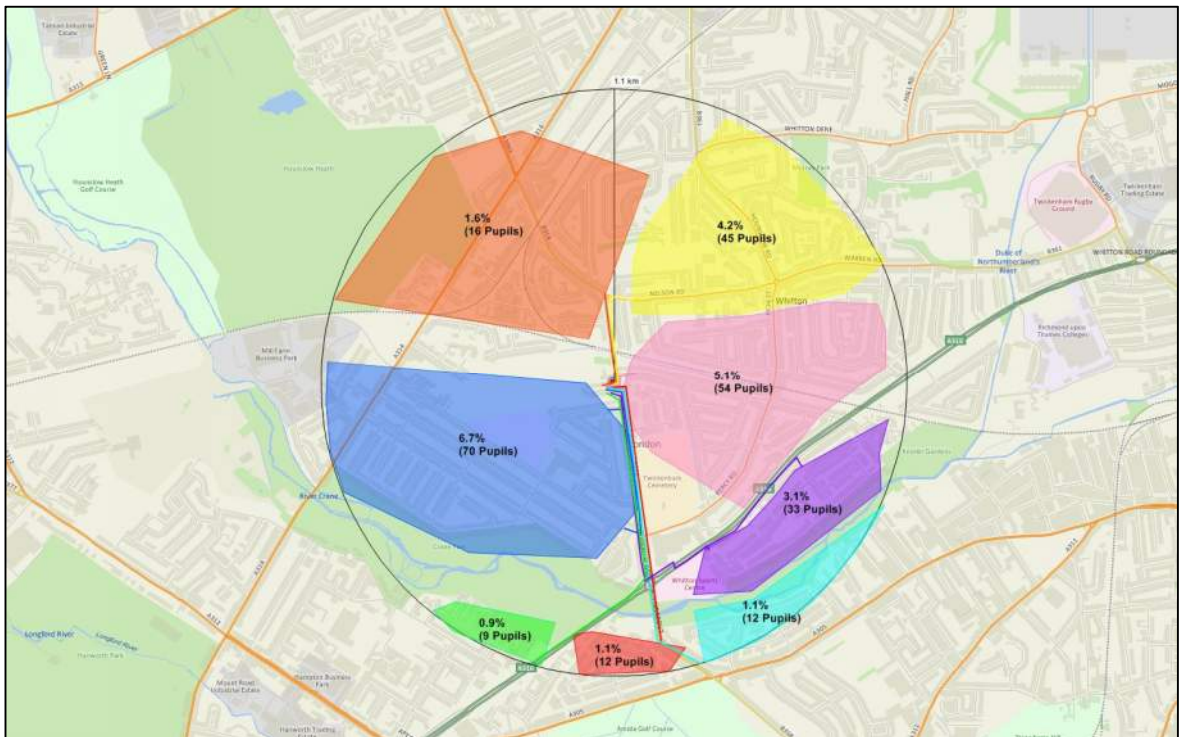
Bus route	Route Section	Direction	Afternoon peak		
			Buses per hour (average)	Proposed Student Trips	Additional Passengers per bus
481	East of site	Towards Cromwell Road Bus Station	2	209	104
	South of site	Towards West London Mental Health Trust	1	35	35
H22	North of site	Towards Manor Road	5	96	19
	East of site	Towards Bell Road / Bell Corner	5	14	3
110	East of site	Towards Hounslow Bus Station	3	0	0
	West of site	Towards West Middlesex Hospital	3	53	18
111	North of site	Towards Heathrow Central Bus Station	6.5	221	34
	South of site	Towards Cromwell Road Bus Station	6.5	0	0
H28	North-east of site	Towards Bulls Bridge Tesco	3	7	2
	North-west of site	Towards Tesco Osterley	3	0	0

**Table 6.3 Distribution of bus trips (afternoon peak)**

### Distribution of pedestrian trips

- 6.28 A pedestrian desire line analysis has been undertaken to estimate the impact on the local footways and crossing facilities in the area of the proposed school.
- 6.29 As presented in Table 5.1, the 'hands up' survey undertaken in October 2017 showed that 15.1% of students were walking, or using scooter to the school in 2017. The more recent survey data showed that the proportion of walking/scooting trips increased to 23.5%. Similarly, as car travel, it is expected that in the first year of occupation with 728 students on site, the proportion of walking trips may be lower ie 15.1%. By the time the school will become fully operational with 1050 students on-site, the school will be expected to achieve modal shift away from cars to walking and other non-car modes. The proportion of walking trips will be expected to amount to 23.5% of all trips, as currently achieved at the temporary site. Pedestrian desire line analysis was undertaken on these assumptions.

- 6.30 As such, it is predicted that 121 walking trips will be generated by students in the opening year, and this will increase to 247 walking trips by the time the school will be fully occupied in 2026.
- 6.31 The analysis of the postcode data has determined that 12.9% of existing students live within 1km of the existing school site and 23.5% of all students walk or use scooter. This indicates that secondary school students are willing to walk longer distances. Postcode data was analysed and it was estimated that 23.5% of students are located within 1.6km of the site.
- 6.32 The same analysis was carried out in relation to the permanent site and the analysis was based on the existing postcode data from students arriving at the Livingston House site and the postcode data of the prospective students that applied to attend the school at the Clarendon School site. The analysis showed that 18.1% of students live within 1km of the site and 35.5% of students live within 1.6km of the site. This suggests that once the school is relocated to the permanent site, it should be feasible for the school to achieve the same proportion of walking trips (23.5%) as currently at the temporary site. Figure 6.4 illustrates the area from which the 23.5% of students are expected to arrive to the site and the number of pedestrian trips generated in the vicinity of the site.



**Figure 6.4: Pedestrian demand to the site**

- 6.33 Pedestrian trips were distributed on the existing footway network based on the shortest route to the site. Figure 6.4 shows that it is estimated that a total of 5.8% (61 students) are expected to approach the site from the streets to the north of the site and will require the use of the footbridge on Hospital Bridge Road. The majority of students will be arriving from east and west and some trips from the south.

6.34 A detail distribution of pedestrian trips on the footway network in the area surrounding the site was undertaken and included both trips generated by students that will walk only to the site and by students that will arrive by buses, train, park and stride and complete the last leg of the journey by foot. The Figure 6.5 shows the results of the analysis for the morning and afternoon peak periods.



**Figure 6.4: Distribution of pedestrian trips**

6.35 The results showed the following:

- i. 68 pedestrian trips will occur across the footbridge in the morning and afternoon peak periods.
- ii. 242 and 505 pedestrian trips will occur across Hospital Bridge Road in the morning and afternoon peak periods respectively.
- iii. 221 pedestrian trips will occur across Hanworth Road in the morning peak period.
- iv. 59 and 141 pedestrian trips will occur across Percy Road in the morning and afternoon peak periods respectively.

6.36 It should be noted that the above figure presents the number of pedestrian movements across the whole period of the morning and afternoon periods and not at any one time. The school will operate breakfast club and after-school clubs and therefore a proportion of these trips will occur outside the school peak periods. As such the above presented case should be considered robust.

## Distribution of cycle trips

6.37 It is predicted that 9.9% (104 students) are expected to arrive by bicycle in the morning and afternoon peak periods. The distribution of cycle trips is presented in Figure 6.5 below and show that students are expected to utilise the existing cycle network in the area of the school.



**Figure 6.5: Distribution of cycle trips**

## Summary

6.38 A detailed distribution of student trips on the surrounding network was undertaken and the following was identified:

- i. The development will generate a low number of car trips that will have a non-material impact on the junctions in the area of the site.
- d) 60.5% of students are predicted to travel by buses, and the bus routes that are expected to be used most often are 481 and 111. The bus route 481 currently operates with low frequency and therefore predicted demand on this route is considered high.
- e) Up to 95% of students will complete the journey by foot (including pedestrian only trips, bus, train trips, and park and stride trips), and the majority of trips are expected to arrive and depart to and from the south of the site. The number of students that would require to cross Hospital Bridge Road was estimated to be 242 and 505 in the morning and afternoon peak periods respectively.



- f) The predicted level of cycle trips is moderate, however, it is recognised that at some secondary schools in the borough up to 20% of all students are expected to cycle to the school and therefore there is potential for an increase. The existing cycle network in the area of the site is comprehensive and on the predicted desire lanes of students expected to cycle to the school.

6.39 Based on the results of the trip distribution estimate, a set of transport impact assessments is proposed, and this is identified in the following section of this report.

## **7.0 TRANSPORT IMPACTS ASSESSMENT**

7.1 This section summarises the predicted transport impacts that will be assessed as part of the forthcoming TA report.

### **Traffic Impact**

7.2 Traffic impact generated by the school on the surrounding road network is discussed in Section 6.0 and presented in Appendix B.

7.3 The trip generation and distribution showed that traffic impact generated by the school on the surrounding road network is considered non-material. The traffic impact at the roundabout with Great Chertsey Road was estimated to be circa 2% - 3% of the existing traffic flows, that based on AADT data extracted from LAEI website. This level of impact is expected to be accommodated within the daily traffic variation on the network.

7.4 Discussion with LBRuT confirmed that traffic impact assessment, using modelling techniques is not required, other than of the proposed the site access. Confirmation from TfL that the approach is acceptable is required.

### **Parking impact**

7.5 The proposed school will not have an on-site drop-off facility and students will be expected to travel by non-car modes. A small proportion of car trips made by parents / students (ie 15.1% at the opening year and 4.8% at full operation) will be expected to be accommodated on-street.

7.6 Based on the site visit observation, the surrounding area has unrestricted on-street parking and a high proportion of residents have access to private drives and therefore do not generate on-street parking.

7.7 The residual parking capacity in the area of the site was observed during the site visit, however, to provide a comprehensive justification that predicted parking demand can be accommodated in the surrounding area, it is proposed to carry out an on-street parking survey in accordance with the methodology summarised in the following paragraphs.

### **Public transport impact**

7.8 Section 6.0 identified that 60.5% of students are anticipated to travel to/from the proposed school by bus. It is noted that this assessment has only taken into consideration bus routes which directly serve the site and has not accounted for students taking more than one bus to reach their destination, which may also occur.

- 7.9 The numerical impact has been presented in Section 6.0 and showed that 635 additional passengers may use public buses.
- 7.10 The correspondence with TfL confirmed that TfL are currently undertaking a major bus network review of this area, which will be consulted in the summer/autumn 2018. Therefore, at this stage, TfL is unable to comment further on improvements to bus services.
- 7.11 It is understood that the net increase on public transport trips, presented in Section 6.0 of this report, provides TfL with sufficient information to assess the impact on the bus services and therefore no other capacity impact assessments are predicted to be required as part of the TA.
- 7.12 Through the discussion with TfL and LBRuT, it was agreed that the operation of the southbound bus stop on Hospital Bridge Road will be assessed to address journey delays, and identify whether there is residual capacity to increase frequency of the bus services. As such, a video survey is proposed to be carried out to understand the current operation and capacity of the existing facility. The detail of the survey is outlined in the following paragraphs.

### **Pedestrian Impact**

- 7.13 Based on the results of the pedestrian impact assessment presented in Section 6.0, the following assessments are proposed:

#### *Pedestrian Environment Review System (PERS)*

- 7.14 A PERS audit will be undertaken in accordance with the guidance provided in TfL's 'Pedestrian Environment Review System, Review Handbook Version 2, May 2006'. The PERS audit will be based around two key principles:

- i. That the quality of the pedestrian environment may be evaluated according to the degree to which it meets pedestrian needs.
- ii. That in evaluating the degree to which pedestrian needs are met by the environment, the objective should be to satisfy as many people as possible, with the standard pedestrian being considered to be towards the vulnerable end of the spectrum.

- 7.15 The assessment will focus on five key pedestrian needs:

- i. Convenience – routes should facilitate the desired journey without undue deviation or difficulty.
- ii. Connectivity – routes should link origins and destination.

- iii. Conviviality – routes should be pleasant to use, with potential for activity within the public realm.
- iv. Coherence – routes should be continuous.
- v. Conspicuity – route design should allow the user to be seen by, and to see other pedestrians and vehicles to promote personal security and road safety.

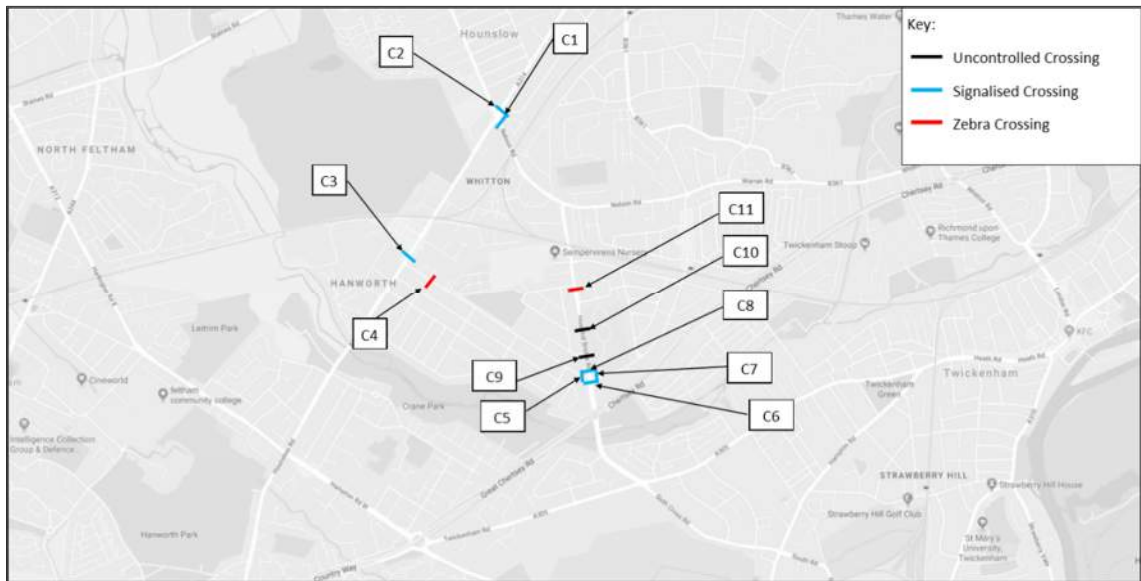
7.16 The audit process will aim to review the environment from the perspective of different types of design users such as the elderly, disabled, children and those carrying or pushing children. This should ensure that the environment is suitable for the most vulnerable of potential users.

7.17 PERS will be applied to the following types of pedestrian environments within the study area:

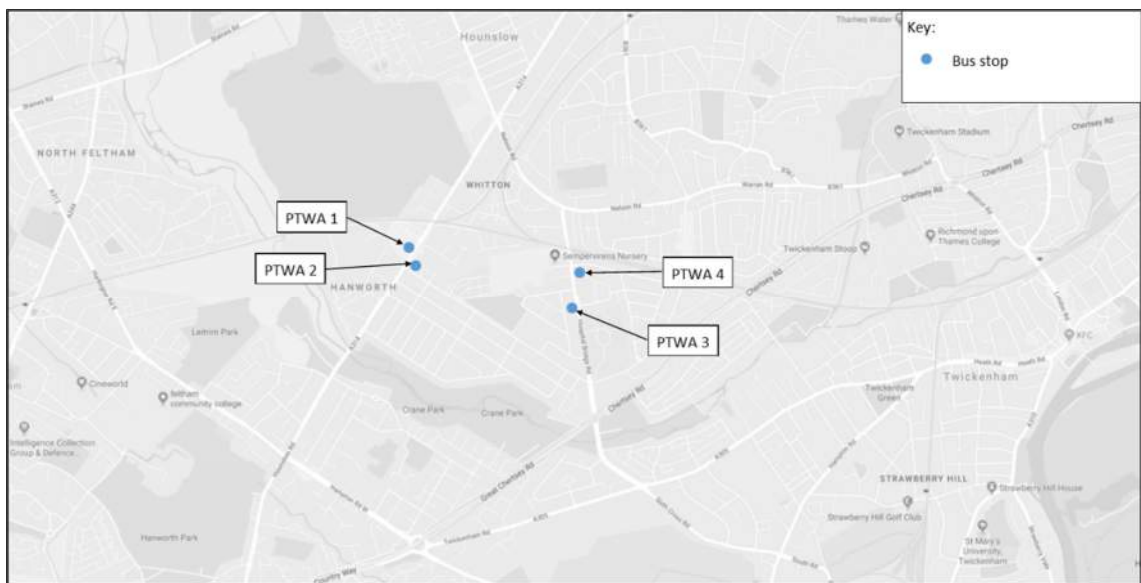
- i. Links: any footway, footpath or highway to be considered.
- ii. Crossings: any designated or undesignated crossing where a pedestrian desire line intersects with a highway.
- iii. Public Transport Waiting Areas: any designated area where people may wait in order to use public transport. This include bus stops, taxi ranks or tram stops.

7.18 Each type of pedestrian environment will be assessed in terms of a number of parameters as shown in Table 7.1 and will be scored on a range from -3 to +3, where +3 is the highest score and -3 the lowest. The assessment areas are presented in Figures 7.1 -7.3.





**Figure 7.2: PERS Assessment area – Crossings**



**Figure 7.3: PERS Assessment area – Bus stops**

7.19 PERS audit will be undertaken in accordance with the methodology outlined above and TRL software is not proposed to be used.

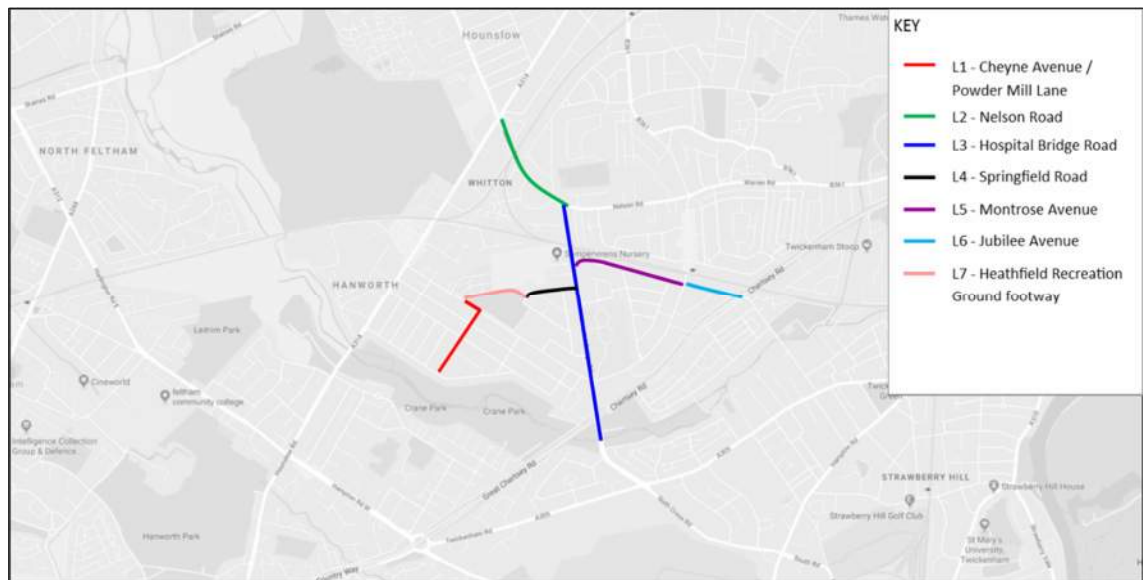
### Cycle Environment Review System (CERS)

7.20 A CERS audit will be undertaken near the development site. CERS is a systematic process which quantifies routes and their overall suitability for cyclist in terms of how Convenient, Accessible, Safe, Comfortable and Attractive a route is. These five key criteria for good practise in cycle provision are set out in DfT Local Transport Note 2/08 Cycle Infrastructure Design and are generally used as the guidelines for developing provision that encourages cycling.

7.21 Each of the five key criteria includes several parameters against which the analysed links will be assessed:

- i. Convenience: continuity, legibility, directness.
- g) Accessibility /Safety: intersection conflict points, traffic volume, traffic proximity, traffic speed and link conflict points.
- h) Comfort: effective width, surface quality, maintenance and effort.
- i) Attractiveness: personal security, lighting and quality of environment.

7.22 Each parameter will be scored on a range from -3 to +3, where +3 is the highest score and -3 the lowest and the assessment area is presented in Figure 7.4.



**Figure 7.4: CERS Assessment area**

7.23 CERS audit will be undertaken in accordance with the methodology outlined above and TRL software is not proposed to be used.

### Healthy Street Assessment

7.24 The Healthy Streets Assessment will be undertaken for the local area, accounting routes to all transport nodes. The assessment will be undertaken in line with TfL guidance and assessed in accordance with ten Healthy Streets Indicators.

7.25 The network of assessed routes will be divided into segments as presented in Figure 7.5.



**Figure 7.5: Healthy Street Assessment Area**

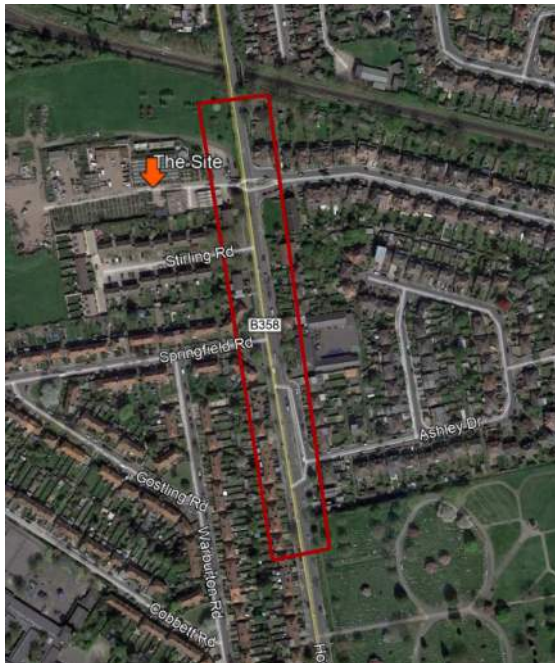
### **Cycle Level of Service (CLoS)**

7.26 CLoS assessment has been developed by TfL to set a common performance standard for infrastructure in relation to cycling and allow to measurement of the performance of links and junctions.

7.27 The CLoS assessment has been developed primarily as a tool for planning and designing cycle routes, although Hospital Bridge Road is not a designated cycle route, the proposed development will result in an increase in cycle trips, therefore this assessment aims to provide base line data of the cycle experience. The proposed study area is shown in Figure 7.6 and the assessment will include the following:

- i. Link 1 - Hospital Bridge Road
- j) Junction 1 - Hospital Bridge Road and site access
- k) Junction 2 - Hospital Bridge Road and Montrose Avenue





**Figure 7.6: CLoS Assessment Area**

**Baseline traffic surveys**

7.28 To inform the above outlined assessments, we propose to undertake a set of pedestrian and traffic surveys. Following the pre-app meeting with LBRuT and TfL in February 2018 and agreed in principles the scope of surveys that will be required to inform the TA. It was also agreed that details on the extent of surveys and methodology will be agreed prior to commencement of data collection. The scope of surveys identified should include the following:

- i. Street Inventory and Parking Beat Survey.
- l) Automatic Traffic Count (ATC) on Hospital Bridge Road.
- m) Manual Classified Counts survey at the junction of Hospital Bridge Road and site access.
- n) Pedestrian flows in the area of the site access.

*Street Inventory and Parking Beat survey*

7.29 The proposed parking beat survey area is shown in Figure 7.7.



**Figure 7.7: Parking survey area**

*Methodology*

7.30 The methodology for the survey is set out below:

- i. A street inventory will be undertaken on each of the roads in the study area, to measure the length of kerb space that is available for parking. This enabled calculation of theoretical parking capacity in the study area, based on the assumption that 5m is equivalent to one parking space.
- o) The number of cars parked on streets will be recorded in 15-minute intervals for one neutral weekday (ie Tuesday, Wednesday, or Thursday) between 07:00 and 10:00, and between 14:00 and 18:00.
- p) Parking in undesignated areas such as dropped kerb, yellow lines, Zig zag markings will be recorded as a means of monitoring additional demand for parking in the area.

**ATC Survey**

7.31 ATC Survey is proposed on Hospital Bridge Road and the location is shown on Figure 7.8. The ATC survey will be carried out for one-week (7 days) period. The survey will capture traffic volume, classified traffic counts and vehicle speeds.

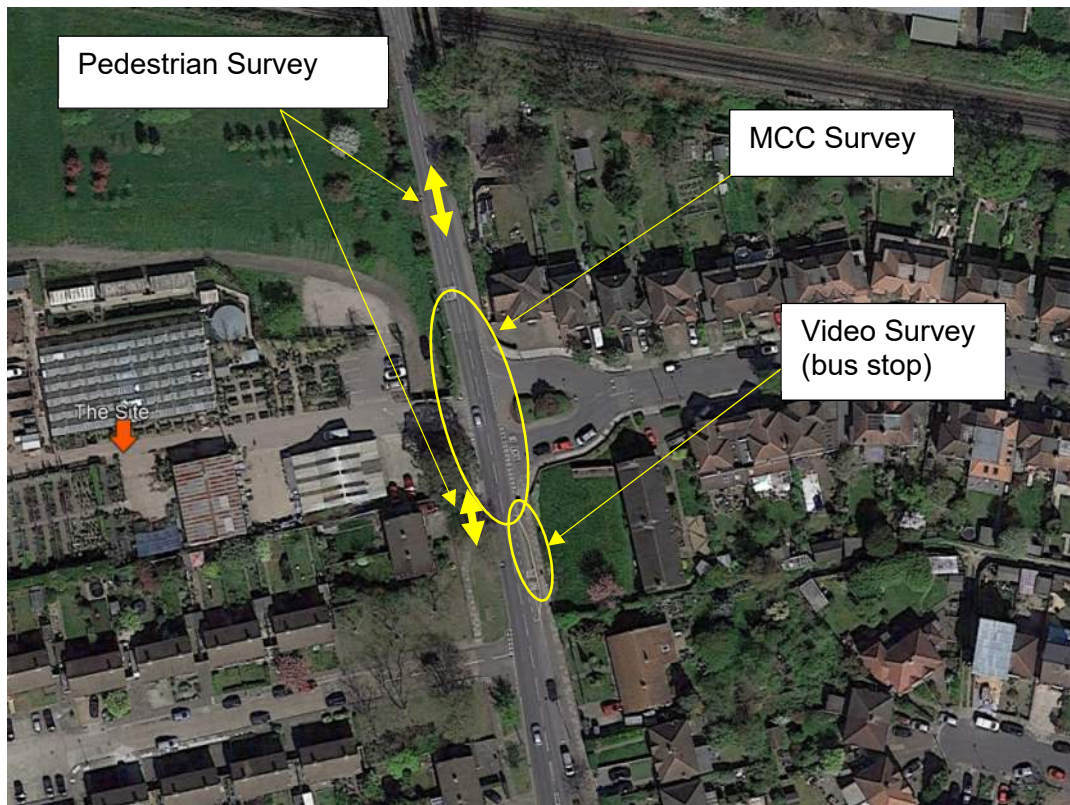


**Figure 7.8: ATC survey location**

**Video Survey**

7.32 Video Survey is proposed at the junction of Hospital Bridge Road / Montrose Avenue and site access as shown in Figure 7.9.

- i. Two cameras will be installed in the vicinity of the junction to capture traffic turning movements at the junction and pedestrian flows along the footways on Hospital Bridge Road.
  
- q) The video survey will be recorded for a period of two weekdays and classified traffic movements will be analysed between 07:00 and 10:00, and between 14:00 and 18:00 only.
  
- r) Pedestrian movements will be recorded on Hospital Bridge Road at two locations: to the north of the junction with Montrose Avenue and on the western footway to the south of the site access. Data will be analysed for the same periods as above.
  
- s) A camera will be installed in the vicinity of the bus stop on Hospital Bridge Road that serves southbound services to record the operation and capacity of this facility.



**Figure 7.9: ATC survey location**

### **Summary**

- 7.33 The proposed scope of surveys and proposed pedestrian and cycle assessments are considered to provide a comprehensive assessment of impacts that will be generated by the proposed development on the surrounding area. Feedback from LBRuT and TfL on the proposed assessments, methodologies, extent of the assessment areas and surveys is sought.

## 8.0 OUTLINE MITIGATION STRATEGY

8.1 The following mitigation measures are envisaged:

- i. The school admissions policy and distance based criteria to remain as per current arrangement.
- t) Promotion of breakfast club and after-school clubs / activities that will result in staggered arrival and departure times of students across longer periods.
- u) Staff arrivals/ departures at different times to students.
- v) A Car Park and Access Management Plan (CPAMP) will be prepared to provide the school with the strategy to manage the site access during the school peak periods, to prevent unauthorised vehicle entry to the school site, and to discourage drop-off and collection on Hospital Bridge Road. The document will also provide management measures for the school car park on-site.
- w) The school will provide an on-site delivery and servicing area that allows vehicles to access and egress the site in forward gear and the physical arrangement will be supported by the DSP to ensure deliveries and servicing activities are managed.
- x) STP with mode shift targets and seeking silver/gold accreditation through the TfL STARS system.
- y) A new pedestrian crossing on Hospital Bridge Road to ensure safe and convenient crossing movements for future users will be considered.
- z) An extension to 20mph speed limit on Hospital Bridge will be considered.
- aa) Implementation of Traffic Regulation Orders in the vicinity of the site will be considered.

## 9.0 SCOPE OF TRANSPORT ASSESSMENT

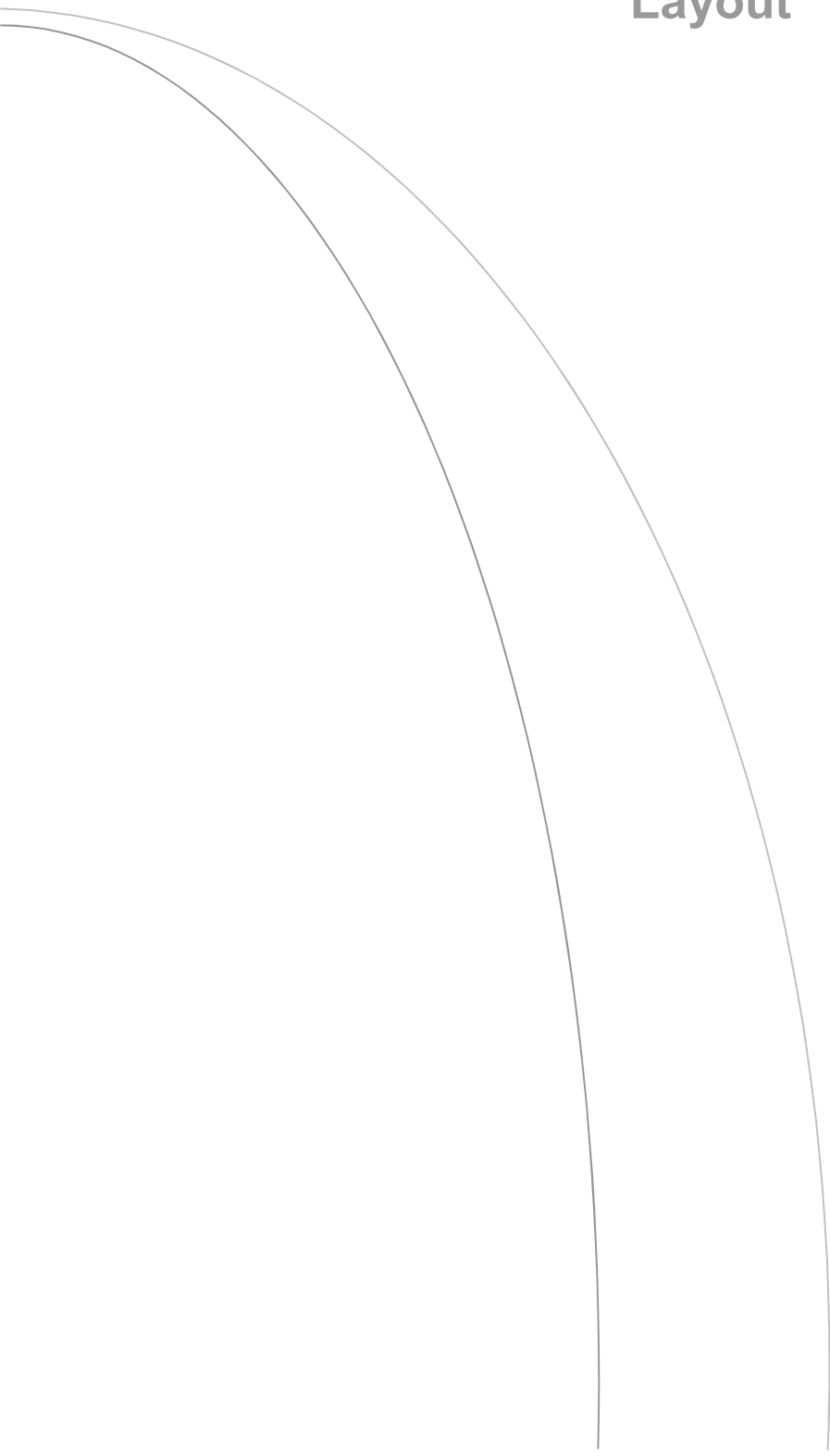
9.1 The forthcoming Transport Assessment to accompany the planning application for the development site is proposed. The document will include the following key sections:

- i. Introduction and background.
- bb) Review of relevant, local, regional and national transport planning policy.
- cc) Site context and details of sustainable modes of travel to the site, including public transport accessibility analysis.
- dd) An outline of the highway network conditions.
- ee) Assessment of road safety conditions using detailed Personal Injury Accident data for the most recent 3-year period.
- ff) Assessment of pedestrian and cycle network in the area of the site using PERS, CERS, CLoS, Healthy Street Assessment.
- gg) Analysis of the street inventory and parking beat survey to determine theoretical capacity for parking and existing levels of demand in the area surrounding the school.
- hh) A detailed assessment of the design of the finalised scheme, including all details of car and cycle parking provision, access design and circulation including swept path analysis, drop-off/pick-up strategy, deliveries and servicing strategy.
- ii) A detailed trip generation exercise and distribution of trips for pedestrians, cycle, cars and buses.
- jj) A traffic impact assessment of the proposed site access junction. Confirmation from TfL on whether traffic impact assessment, using modelling techniques, of other junctions in the surrounding area is required.
- kk) A detailed mitigation strategy.

9.2 The TA will be accompanied by a STP, DSP, CPAMP and outline CLP and outline of all the management measures that will be undertaken to address the impact of the scheme.

- 9.3 Feedback on the proposed scope of work for the TA, scope of the assessments and surveys from LBRuT and TfL is sought.

## Appendix A – Proposed Site Layout





**Notes**

1. Do not scale from this drawing
2. To be read in conjunction with Project Risk Register REF: XXX
3. To be read in conjunction with all other Landscape Architect's drawings

**KEY**

- A Entrance Plaza**  
50m<sup>2</sup> Total Spaces
- B Car Parking**  
10 Active Electric Charging Points  
Deliveries / Coach Bay  
10m<sup>2</sup> Cycle Parking Spaces
- C New Site Entrance**
- D Deliveries and Maintenance Gate**
- E Habitat Area**  
Planting species designed to encourage insect activity, habitats and enhance the ecological ecology
- F Pedestrian Boulevard**
- G Hard Informal Social Area**
- H 6th Form External Play Area**
- I External Canopy**
- J Cycle Parking**
- K 3 Court MUGA**
- L Playing/Sports Field**  
A Space design to maximise the amount of sports played by the school. The East West orientation results in 400 pitches over three achieve by north south orientations
- M Southern Boundary Fence**  
Fence with hedge planting to provide screening
- N Metropolitan Open Land**  
Fallow land will still be M.O.L. outside of the school management and maintenance
- O Habitat Corridor**  
45m<sup>2</sup>. The existing avenue of trees retained and enhanced to provide a habitat corridor between the rail line, cemetery and retained fallow land

ID	RISK	MITIGATION	Date Assigned

**RESIDUAL PROJECT RISKS**

DATE	AUTHORITY	REASON	DESCRIPTION OF REVISION	DRAWN APPROVED BY

**REVISIONS**

SUITABILITY  
**D02 - ITT Issue**

**ares**  
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Ares Landscape Architects LTD  
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CLIENT:  
**Bowmer and Kirkland**

PROJECT TITLE:  
**Turing House School**

DRAWING TITLE:  
**Illustrative Masterplan**

DRAWING SCALE:  
1:750  
DRAWN BY:  
EC  
CHECKED BY:  
LA

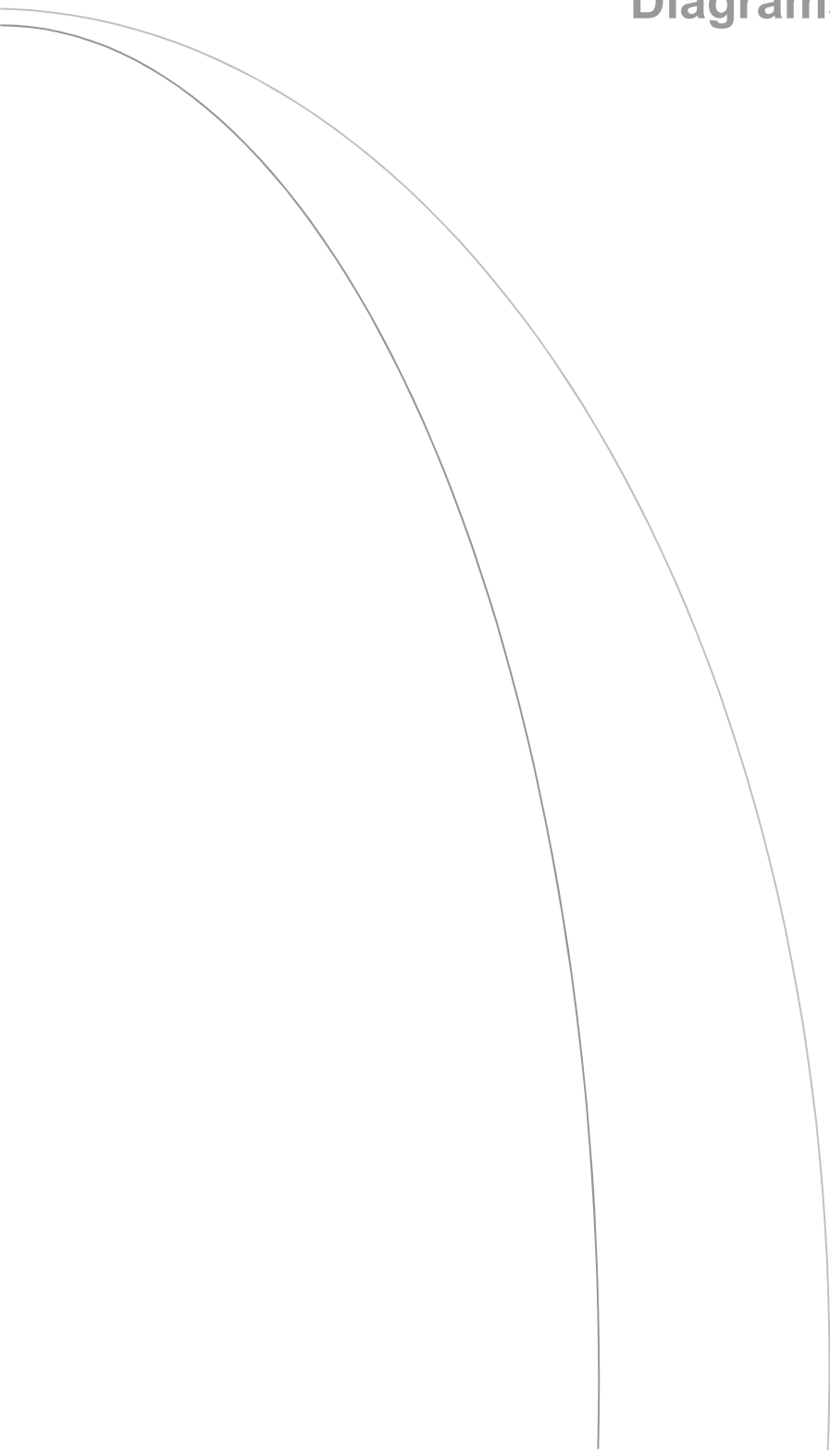
DRAWING DATE:  
02.02.2018

DRAWING NUMBER:  
**EFA TH-ALA-00-XX-DR-L-0003 D02**

SUITABILITY - REVISION:  
**P01**

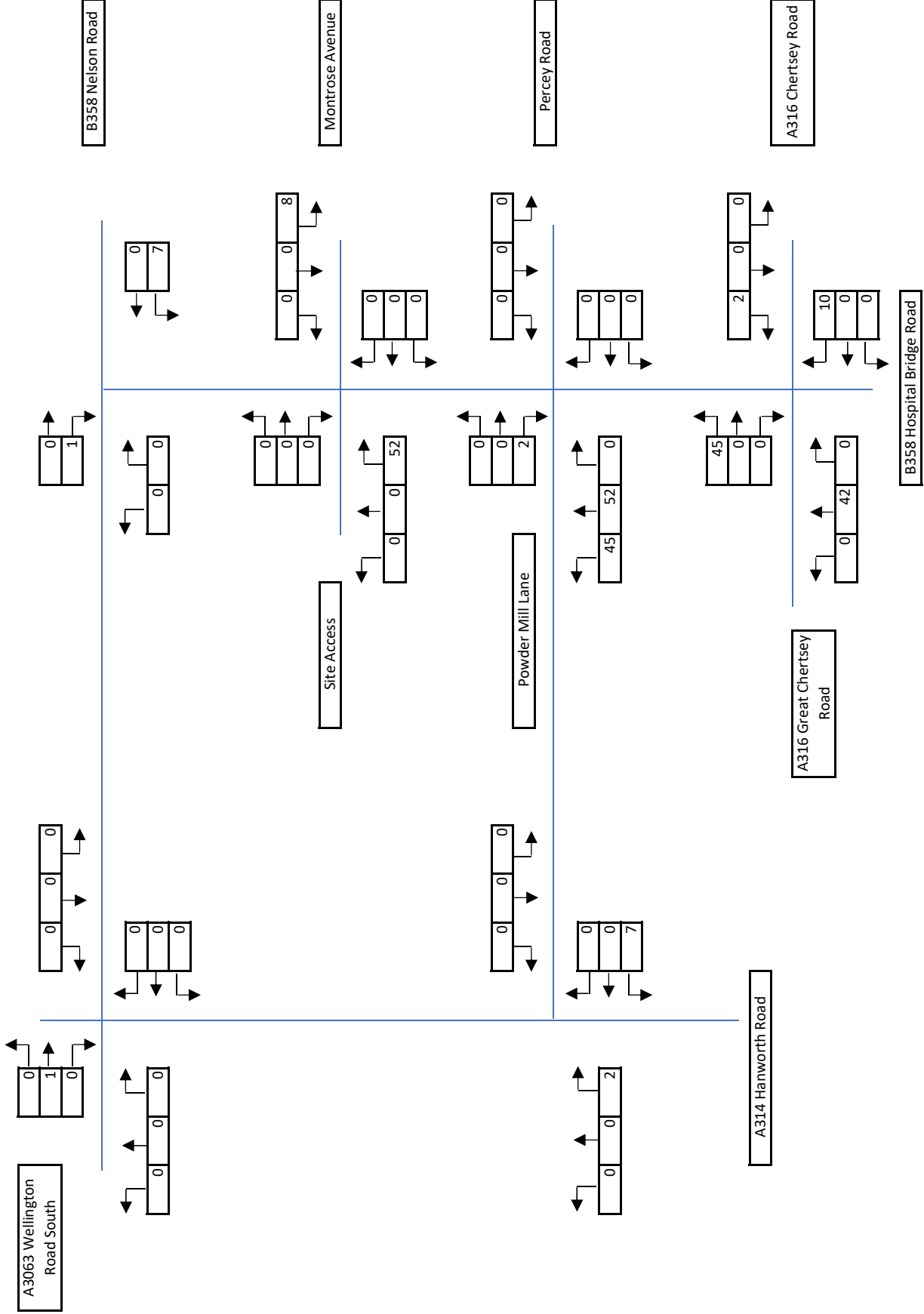


## Appendix B – Traffic Flows Diagrams



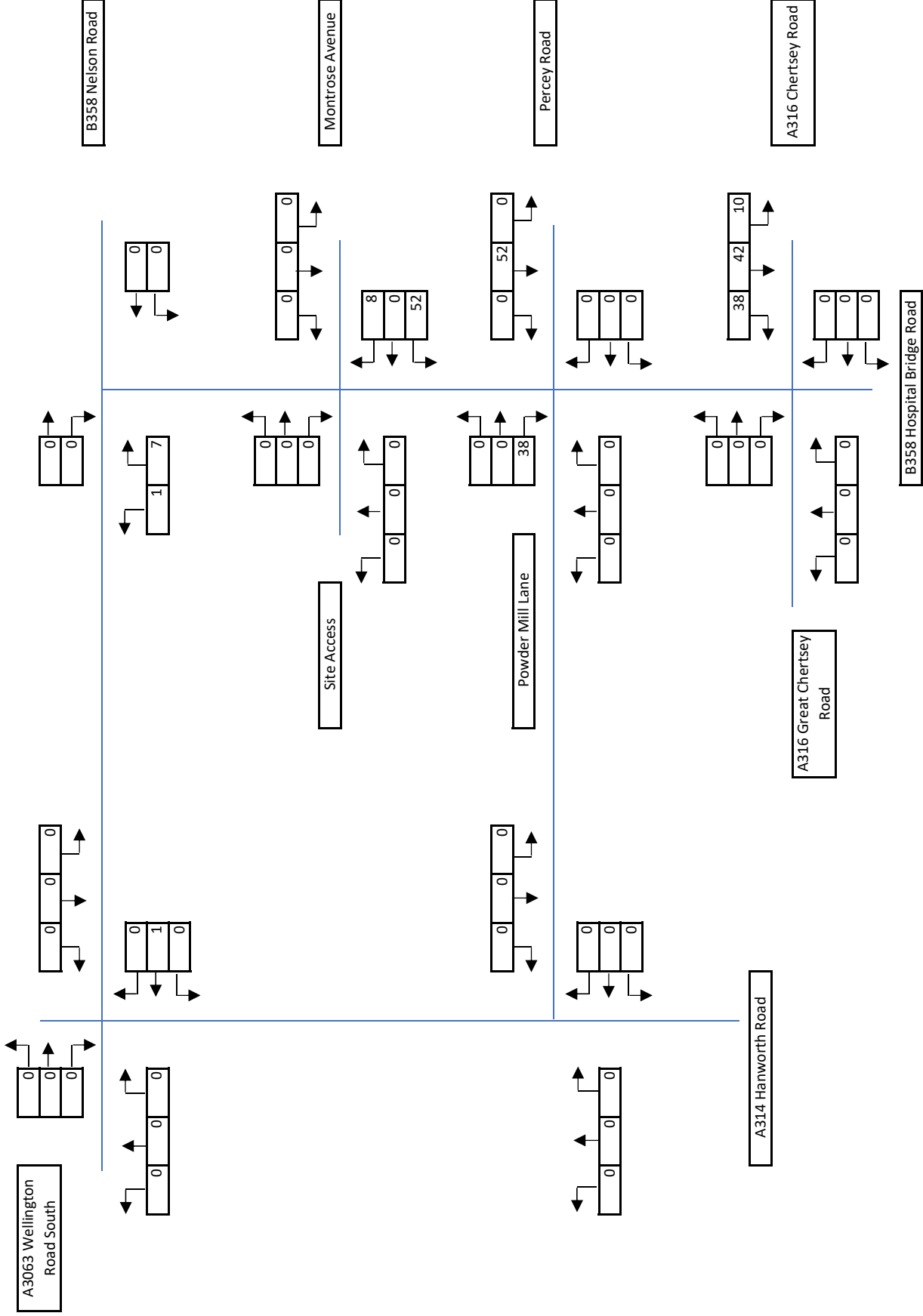
Development flows to the site  
Morning Peak

106

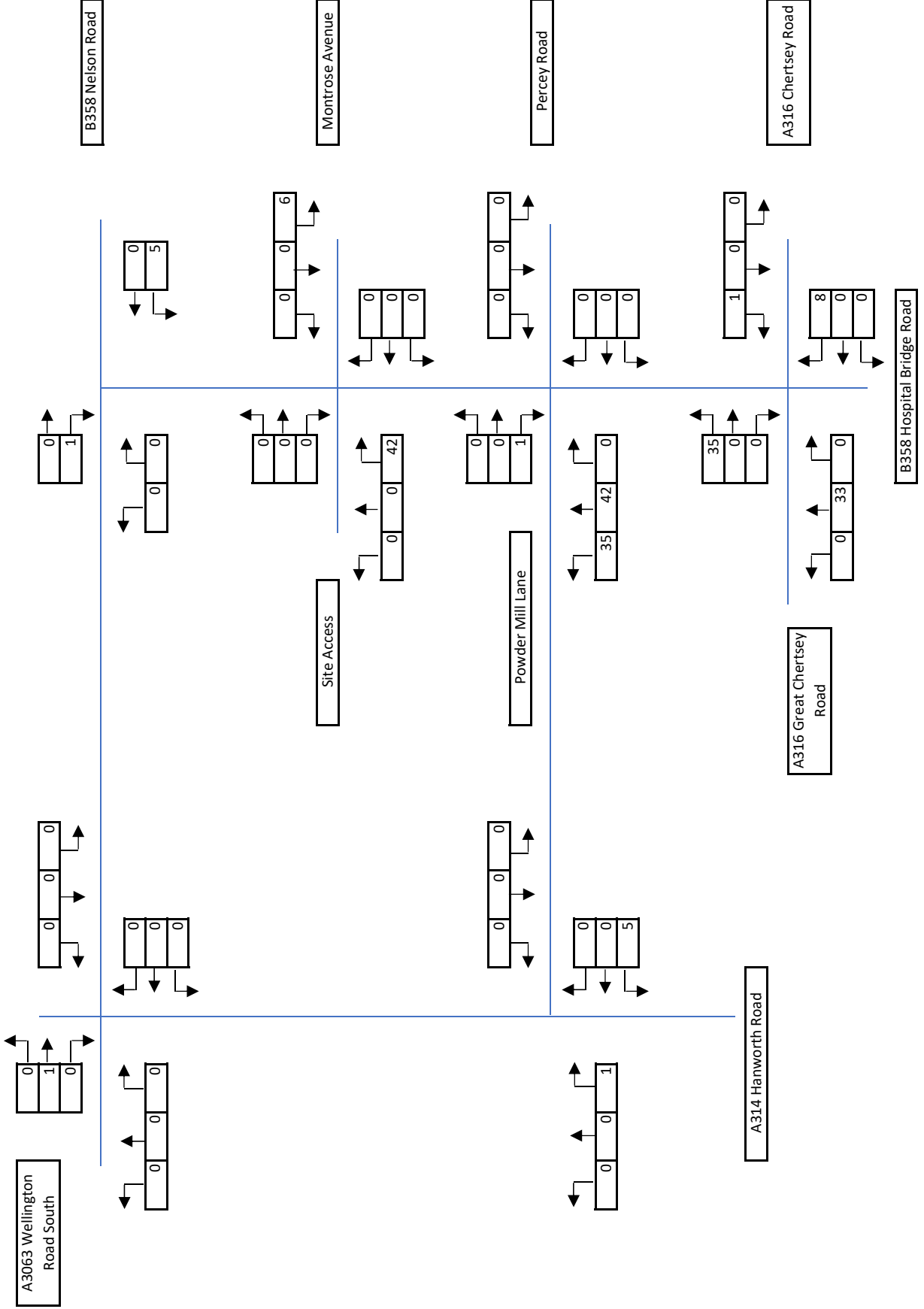


Development flows from the site  
Morning Peak

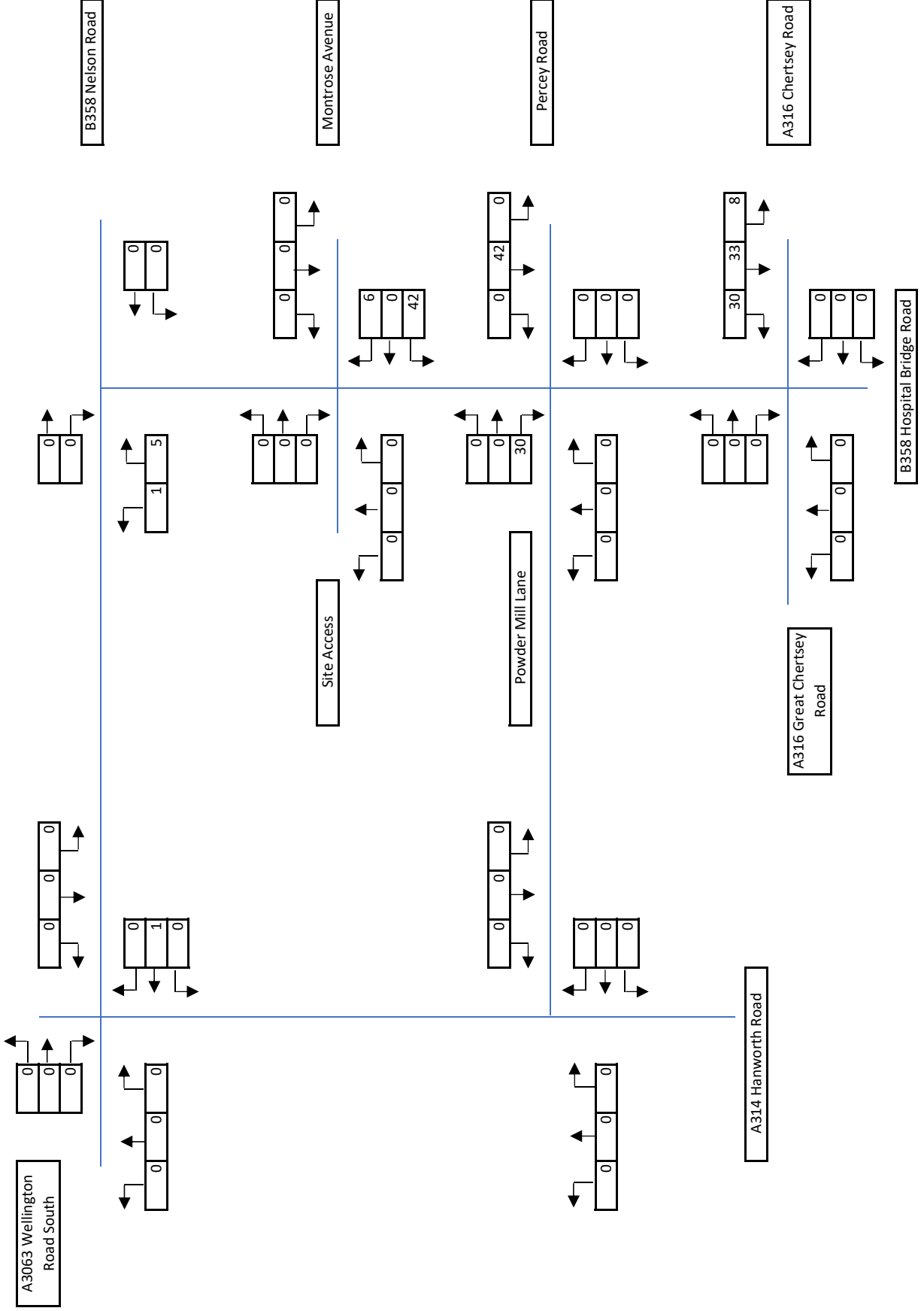
106



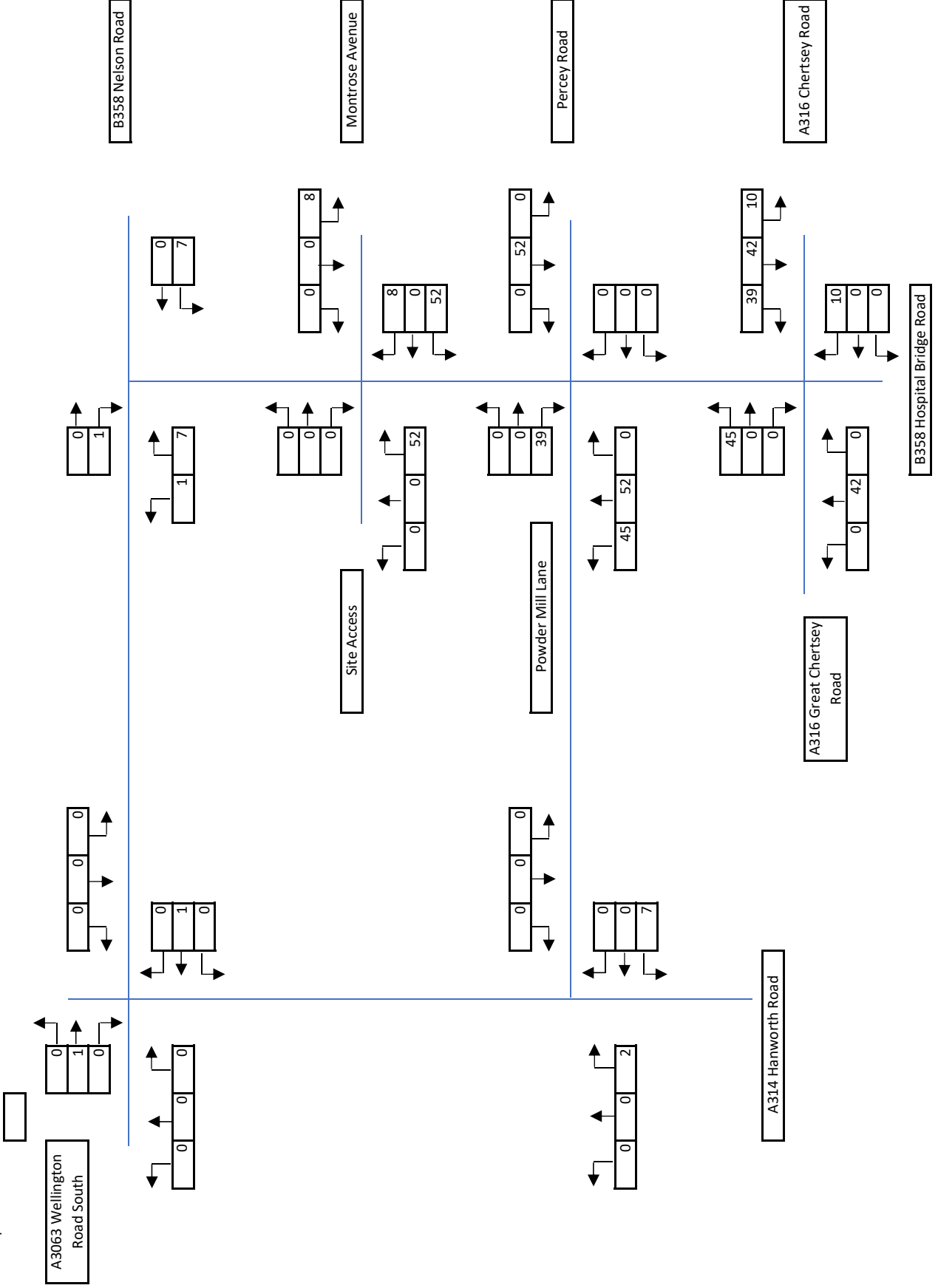
Development flows from the site  
Afternoon Peak 84



Development flows to the site  
Afternoon Peak 84



Development flows



Development flows

