

Tiddlywinks Day Nursery Limited

Proposed Nursery School
Croft Lane, Unsworth, Bury

Transport Statement



Control Sheet

CLIENT: Tiddlywinks Day Nursery Limited
PROJECT TITLE: Proposed Nursery School
 Croft Lane, Unsworth, Bury
REPORT TITLE: Transport Statement
PROJECT REFERENCE: 152508
DOCUMENT NUMBER: 001
ISSUE NUMBER: 02
DATE: June 2023

Issue & Approval Schedule	Issue 01 Draft		Name		Signature		Date	
	Prepared by		Luke Young				21.06.2023	
	Checked by		Ian Ladbroke				21.06.2023	
	Approved by		Ian Ladbroke				21.06.2023	
Issue Record	Issue	Date	Status	Description	Signature			
	02	28.06.2023	Final	Minor amendments	Prepared			
					Checked			
					Approved			
	03				Prepared			
					Checked			
					Approved			

This document has been prepared in accordance with procedure OP/P02 of the Sanderson Associates Consulting Engineers Quality and Environmental Management System.

This document has been prepared in accordance with the instructions of the client, Tiddlywinks Day Nursery Limited, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

Any information provided by third parties and referred to herein has not been checked or verified by Sanderson Associates Consulting Engineers unless otherwise expressly stated within this report.

Copyright - All intellectual property rights in, or arising out of, or in connection with this report, are owned by Sanderson Associates Consulting Engineers. The client named above has a licence to copy and use this report only for the purposes for which it was provided. The licence to use and copy this report is subject to other terms and conditions agreed between Sanderson Associates Consulting Engineers and the client.

Sanderson Associates Consulting Engineers is a trading name of Fairhurst Group LLP, a limited liability partnership, registered in Scotland with the registered number SO307306.

Acknowledgements

Google ©, Google My Maps and OpenRouteService have been used to generate figures included in this report for illustrative purposes only.

The Crashmap database has been utilised to carry out a road traffic incident review

Extracts of 'Providing for journeys on foot,' Transport for Greater Manchester Interactive Cycle Map have been included in this report.

Extracts of CIHT documents 'Planning for Walking,' (2015), 'Planning for Cycling,' (2014) and 'Buses in Urban Developments' (2018) have been included in this report.

The TRICS database v7.10.1 has been used in this report to calculate traffic generations.

Census 2011 data from Nomis has been used to predict modal split and traffic distribution.

Transport for Greater Manchester Pre-Application Advice (Application No. 02796/E) has been included in this report.

Contents

1. Introduction.....	6
2. Planning Policy Context.....	8
3. Existing Situation.....	11
4. Development Proposals.....	16
5. Accessibility by Sustainable Modes.....	20
6. Trip Generation Assessment.....	31
7. Summary and Conclusions.....	36

List of Tables

Table 1 – Manual Traffic Count Results and Composition (Northbound).....	13
Table 2 – Manual Traffic Count Results and Composition (Southbound).....	13
Table 3 – Two-way Total Manual Traffic Counts Results and Composition.....	13
Table 4 – Manual Speed Survey Results [24.05.2023].....	14
Table 5 – Parking Standards.....	17
Table 6 – Census Results for ‘QS701EW – Method of travel to work’ [Nomis].....	18
Table 7 – Bus Stop Information.....	28
Table 8 – Summary of Bus Services.....	29
Table 9 – TRICS Search Parameters.....	31
Table 10 – Multimodal Trips from Development Proposals.....	31
Table 11 – Vehicle Trips for Development Proposals.....	32
Table 12 – TEMPro Growth Rates and Parameters.....	34

List of Figures

Figure 1 – Location of Site [GoogleMyMaps].....	6
Figure 2 – Approximate Extent of Site [GoogleMyMaps].....	11
Figure 3 – Google Earth Satellite Imagery Date 14/05/2019 [Google ©].....	11
Figure 4 – Five-year Road Traffic Collision Record [Crashmap].....	15
Figure 5 – Indicative Walking Isochrones [OpenRouteService].....	21
Figure 6 – Indicative Cycling Isochrone [OpenRouteService].....	25
Figure 7 – Extract of TfGM Bury Cycle Map.....	26
Figure 8 – Bus Stop Locations [GoogleMyMaps].....	28
Figure 9 – Location of Bus Station and Tram Stop [GoogleMyMaps].....	30
Figure 10 – Bury 013 MSOA [NOMIS].....	32
Figure 11 – Croft Lane/ Site Access.....	34

List of Appendices

Appendix A

Transport for Greater Manchester Pre-application Advice

Appendix B

Department for Transport [DfT] AADF Count Point Station (ref: 930683) Data

Appendix C

Crashmap Report

Appendix D

Manual Speed Survey Results

Appendix E

Site Layout Plans

Appendix F

Drawing 152508-001 Visibility Splays

Drawing 152508-002 Refuse Vehicle Swept Paths

Appendix G

Site Visit Photos

Appendix H

Diagram 1 – Accessibility Audit

Appendix I

TRICS Output Reports

Appendix J

Development Flows

Appendix K

'Junctions 9' Modelling Output Report

1. Introduction

- 1.1 Sanderson Associates Consulting Engineers has been appointed to prepare a Transport Statement to support the planning application for the provision of a Nursery School on land at Croft Lane, Unsworth. The location of the site, in relation to the local area is shown in **Figure 1**, below.

Figure 1 – Location of Site



- 1.2 Pre-application advice has been sought from Transport from Greater Manchester (TfGM) (Application Number: 02796/E), attached at **Appendix A** and have stated that a full Transport Statement should be provided as part of the application and that the report should cover the following:
- The local highway network, including existing Traffic Regulation Orders within the vicinity of the site and accident history;
 - The access arrangements to the proposed development. This will include the investigation of the provision of a controlled pedestrian crossing facility across Croft Lane;
 - The proposed development, its operational facilities and parking provision;
 - A review of the traffic generations likely to be associated with the development; and,
 - Accessibility of the site in relation to sustainable transport and local facilities, including an audit of the quality of the existing infrastructure.
- 1.3 The consultation has requested that a Framework Travel Plan should accompany any future planning application. This has been prepared by Sanderson Associates Consulting Engineers under a separate cover (report reference **152508-002-01**) and is submitted in support of the planning application.

- 1.4 Additionally, the consultation has made comment with regards to an assessment of the likely environmental/ traffic impacts of HGVs during the construction process. A Construction Traffic Management Plan has been prepared by Sanderson Associates under a separate cover (report reference **152508-003-01**) and is submitted in support of the planning application.
- 1.5 A site visit was undertaken on Wednesday 24 May 2023, during the AM peak period to undertake a manual traffic count, observe vehicle speeds and observe pedestrian flows across Croft Road. Additionally, an audit of the quality of the pedestrian and cycling infrastructure has been undertaken, to include the proposed routes staff, parents and children, may walk to the site.
- 1.6 This Transport Statement demonstrates that the development will not have an unacceptable impact on highway safety and that residual cumulative impacts of the development are not severe in transport terms, consequently, the planning application should be supported by the Council on transport grounds.

2. Planning Policy Context

2.1 National Planning Policy Framework

2.1.1 With regards to the planning policy context of the development, Paragraph 110 of the National Planning Policy Framework (NPPF), revised in July 2021, states that:

“In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- a) Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, give the type of development and its location;*
- b) Safe and suitable access to the site can be achieved for all people;*
- c) The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46 ; and*
- d) Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.”*

2.1.2 Paragraph 111 goes on to say;

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.”

2.1.3 Furthermore, Paragraph 112 states;

“Within this context, applications for development should:

- a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
- b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
- c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
- d) allow for efficient delivery of goods, and access by service and emergency vehicles; and*
- e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.*

- 2.1.4 As required by Transport for Greater Manchester, Paragraph 113 of the NPPF is therefore relevant in that:

“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.”

2.2 **Regional Planning Policy**

Greater Manchester Spatial Framework – Revised Draft (January 2019)

- 2.2.1 Once the Spatial Framework is fully adopted, it will form an integral part of Bury’s wider development plan. The Framework wants to support wider strategies around clean air, walking and cycling and underpins their ambition to be a carbon neutral city-region by 2038.
- 2.2.2 **Chapter 10** of the Framework (**A Connected Greater Manchester**) highlights the issues surrounding transport in Greater Manchester. The vision for 2040 is to improve the transport network so that half of all daily trips in Greater Manchester can be made by public transport, cycling and walking. Furthermore, the Framework supports the Greater Manchester Transport strategy 2040.

Greater Manchester Transport Strategy 2040

- 2.2.3 The Greater Manchester Transport Strategy 2404 sets out the approach to deliver a fully integrated, sustainable capacity transport system for Greater Manchester. It includes a vision to have ‘*world class connections that support long-term, sustainable economic growth and access to opportunity for all.*’ The vision involves four key elements:
- Supporting sustainable economic growth;
 - Protecting our environment;
 - Improving quality of life for all; and,
 - Developing an innovative city-region.

2.3 **Local Planning Policy**

Bury Local Plan (October 2018)

- 2.3.1 The Bury Local Plan, dated October 2018, echoes these principles and has a number of objectives that support this, including:
- Deliver sustainable development;
 - Promote health and wellbeing within the Borough’s communities;
 - Reduce carbon emissions, improve air quality and ensure that the Borough is resilient and adaptive to the effects of climate change;
 - Ensure that the Borough’s residents have adequate access to community facilities; and,

- Encourage sustainable transport choices and reduce the number and length of journeys, particularly by private motor vehicles.

2.3.2 Additionally, the Bury Local Plan, Topic Paper 10 relates to Transport. New growth and development needs to be supported by adequate infrastructure, including transport. Each Topic paper sets out the current key policies, plans and strategies relating to their specific topic area which will form the development of the Local Plan.

3. Existing Situation

3.1 Site and Surrounding Area

- 3.1.1 The site is located to the northwest of Croft Lane, approximately 2.5km southeast of Bury Town Centre. The approximate extent of the site is shown in **Figure 2**, below.

Figure 2 – Approximate Extent of Site

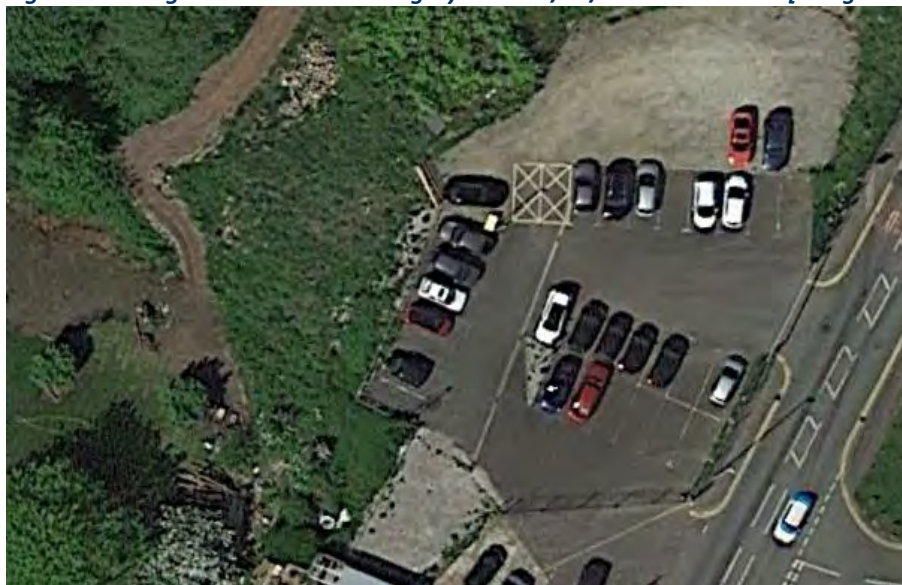
[GoogleMyMaps]



- 3.1.2 Part of the site is unused land while the remainder is a car park with 28 marked spaces. It seems that further parts of the site have also been used for parking in the past, as shown in **Figure 3**. Utilising Google © Satellite Imagery, it appears that the car park was used from at least 2000 until at least May 2019, by different users.

Figure 3 – Google Earth Satellite Imagery Date 14/05/2019

[Google ©]



- 3.1.3 The application boundary fence is a party fence denoting separate legal title ownership between the site and adjacent land. There are no legal rights of way affecting the application site. No neighbouring land interests have any rights over the application site as part of their access and parking arrangements.

3.2 Local Highway Network

- 3.2.1 Croft Lane is a two-way carriageway with central hatch markings that runs southwest-northeast past the site. A speed limit of 30mph is in place and footways and street lighting are present on both sides.
- 3.2.2 Approximately 560m south of the site Croft Lane joins Hollins Lane, which runs east to Unsworth, at a mini roundabout junction. Beyond this, Croft Lane becomes Hollins Brow and joins the A56 Manchester Road linking to Bury, Whitefield, the M60 and Manchester beyond. To the north of the site, Croft Lane becomes Pilsworth Road which provides access to various industrial and commercial sites, the M66 and Heywood.
- 3.2.3 The site is also located within a weight restricted area, where lorries over 7.5 tonne are not permitted past the site, except for access. The signs are posted, approximately 300m north-east of the site frontage. Furthermore, waiting restrictions, in the form of double yellow lines are in place across the site frontage. Immediately north of the site, begins the urban clearway. Comments made from Transport for Greater Manchester [TfGM] have raised concerns about indiscriminate parking associated with the nursery school. As part of the site visit, the distance between the end of the double yellow line road markings and the start of the urban clearway was 4.1m on each side of the carriageway. This would not provide enough space for a car to park legally here.

3.3 Site Visit

- 3.3.1 A site visit was undertaken by Sanderson Associates Consulting Engineers on Wednesday 24 May, 2023 during the AM peak period to undertake a manual traffic count between 08:00 and 09:00, pedestrian observations, a manual speed survey, carriageway measurements and an audit of the accessibility of the existing pedestrian and cycling infrastructure.
- 3.3.2 The manual traffic count was undertaken in the AM peak period as a result of the operational peak period of the Nursery School and was identified as busiest time period on Croft Lane from previous manual counts, based on DfT count point location data. During the manual traffic count, pedestrian movements were observed. 29 pedestrians were seen walking along Croft Lane during the survey period, of which 13 were observed crossing Croft Lane. They were observed not having to wait long to cross the road and did so by walking and were not rushed across the street by oncoming traffic. Also, the pedestrian visibility is sufficient to both the north and south of the development, to see approaching traffic in order to cross the road within gaps.

3.3.3 Pre-planned routes were assessed for the pedestrian and cycling audit to investigate the current infrastructure available to those walking to the site. Photographic evidence was made.

3.4 Traffic Data

3.4.1 Before undertaking the site visit, the Annual Average Daily Flow (AADF) counts were analysed from count point station number 930683, located approximately 600m from the site frontage. The Department for Transport [DfT] AADF station data is provided at **Appendix B**. Despite data only being provided up to 2009, the data was able to be analysed to get an indication of the AM and PM peak periods of Croft Lane. It was determined that the AM peak period (08:00-09:00) was busier than the PM peak period (17:00-18:00). The busier AM peak period coincides with the busiest operational period of the Nursery School, and therefore the site visit was conducted during the AM peak period.

3.4.2 During the AM peak period on Wednesday 24 May, 2023 a manual traffic count was undertaken on Croft Lane past the site frontage. The results are summarised in **Tables 1 to 3**.

Table 1 – Manual Traffic Count Results and Composition (Northbound)

Time	Pedestrian	Cyclist	Cars incl. LGVs	HGV > 7.5 tonnes	Buses
08:00-08:15	6	1	198	0	1
08:15-08:30	10	2	215	0	0
08:30-08:45	3	1	187	0	1
08:45-09:00	1	1	181	2	0
Total	20	5	781	2	2

Table 2 – Manual Traffic Count Results and Composition (Southbound)

Time	Pedestrian	Cyclist	Cars incl. LGVs	HGV > 7.5 tonnes	Buses
08:00-08:15	3	0	124	1	0
08:15-08:30	0	0	145	1	0
08:30-08:45	3	0	134	0	0
08:45-09:00	3	0	145	2	1
Total	9	0	548	4	1

Table 3 – Two-way Total Manual Traffic Counts Results and Composition

Time	Pedestrian	Cyclist	Cars incl. LGVs	HGV > 7.5 tonnes	Buses
08:00-09:00	29	5	1,329	6	3

3.4.3 In order to calculate an up-to-date AADF for the site, the figures obtained from the manual traffic count have been manipulated. The process to obtain the AADF is as follows:

- The value obtained for the total motor vehicles is multiplied by two to obtain a 2-hour traffic flow period;
- This number is then multiplied by 5.48 (taken from the Traffic Appraisal Manual – Appendix D14, Table 1: based on an Urban Commuter Road). This will provide the figure for a 16-hour flow.

→ To then calculate the 24-hour flow, the Seasonality Index (obtained from the COBA Manual) is used to calculate the M-Factor – as the survey was undertaken in May, the M-Factor is 349. 349 is then divided by the number of days in the year which gives the total 0.956. 0.956 then gets multiplied by the 16-hour flow to provide the AADF.

Therefore;

→ $(5 + 1,329 + 6 + 3) \times 2 = 2,686$
 → $2686 \times 5.48 = 14,719.28$
 → $14719.28 \times 349 = 5,137,028.72$
 → $5,137,028.72 / 365 = 14,074.05 \equiv \mathbf{14,074}$

3.4.4 As the last manual count available was from 2009, TEMPro 7.2b has been used to growth the manual count to 2023. Due to limitations with TEMPro, a base year of 2011 has to be selected. The Local Growth Figure was determined to be 1.1966. Applying this to the All Motor Vehicle Total from 2009 (11,704), the growthed figure equates to 14,005.

3.4.5 Therefore, the 14,074 vehicles obtained from manipulating the 2023 manual traffic count appears to be reasonable.

3.5 Vehicle Speed Data

3.5.1 During the site visit, a manual speed survey was conducted to determine the 85thtile speeds of vehicles travelling past the site frontage. The weather conditions were fine and dry. All vehicles were recorded during non-peak hour free flowing traffic conditions. The results are outline in **Table 4**, with full details at **Appendix D**.

Table 4 – Manual Speed Survey Results [24.05.2023]

Direction of Travel	Direction of Visibility	85th Percentile Speed (mph)	Stopping Sight Distance (m)
Northbound	South	33.1	49.4
Southbound	North	31.8	46.7

3.6 Road Traffic Incident Review

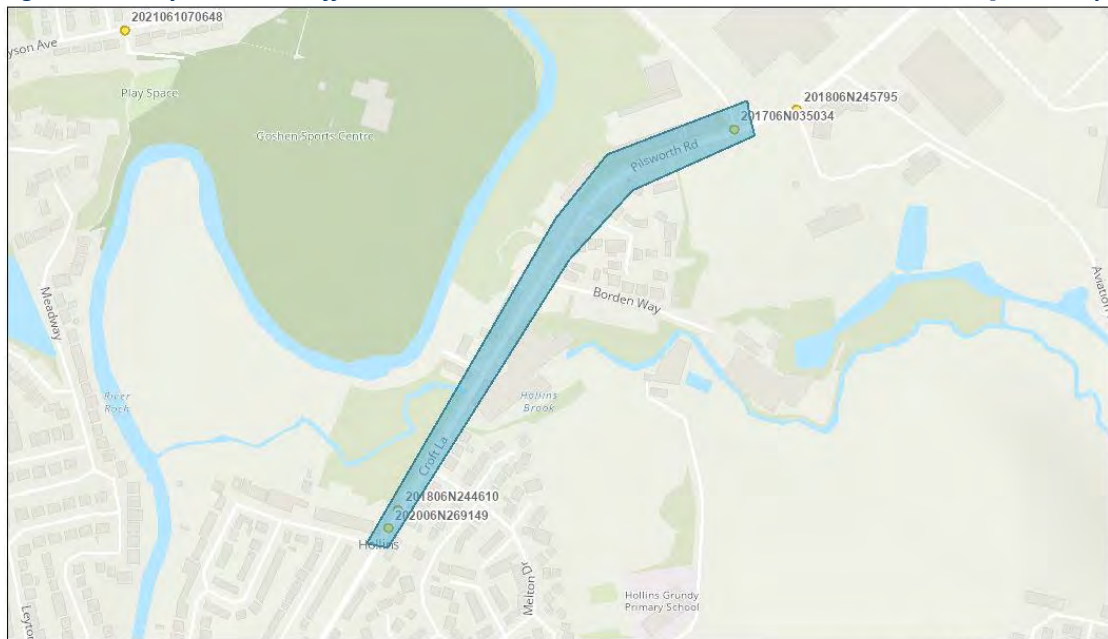
3.6.1 National guidance states that Transport Statements should include, “*an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent 3-year period or 5-year period if the proposed site has been identified as within a high accident area.*”

3.6.2 To fulfil the requirements of the comments made by Transport for Greater Manchester, an analysis of the injury accidents during the most recent five-year period has been considered.

3.6.3 Road traffic collision data has been obtained from the Crashmap database for the most recent five-year period available (January 2017 – December 2021). The incident plot diagram within the vicinity of the site is shown in **Figure 4**.

Figure 4 – Five-year Road Traffic Collision Record

[Crashmap]



- 3.6.4 As can be seen, no incidents have been recorded at the site access or within 180m to the south and 200m to the north of the site. In addition, the incidents recorded at these distances are slight in severity and isolated. Therefore, it is not considered that there is an existing accident trend that would be exacerbated by the proposals. The full Crashmap report is attached at **Appendix C**.
- 3.6.5 In terms of road traffic collisions, as no accidents have occurred across the site frontage, and no accidents have involved pedestrians within the previous five-year periods, there does not appear to be an area of conflict between pedestrians crossing Croft Lane, at or near the site frontage.
- 3.6.6 From the calculated AADF on Croft Lane of 14,074 vehicles, this would equate to an approximately 5.1 million vehicles passing the site each year, and approximately 25.6 million within the five year accident search period. No incidents have occurred within this period which involve pedestrians or vehicles.
- 3.6.7 The previous use of the site was a car park. To use the car park, pedestrians would have been required to cross Croft Lane between the car park and employment premises on the opposite side of the road. The car park would have been operational during the accident search period and the lack of pedestrian incidents indicates that there wasn't an accident history problem with pedestrians crossing the road in this location.
- 3.6.8 From the site visit, it was observed that pedestrians still cross Croft Lane in the vicinity of the site and without apparent difficulties.

4. Development Proposals

4.1 *The Development*

- 4.1.1 The proposals comprise the replacement of the existing car park with a two-storey Nursery School. Proposed site layout plans are included at **Appendix E**. The Nursery will cater for up to 120 children from birth to four years of age with hours of operation being 7:30am to 6pm, Monday to Friday.
- 4.1.2 Drop-off and pick-up times will be to suit parents/ guardians; however, it is anticipated that children will be enrolled on half or full days with drop off tending to be from 7:30 to 10am (AM peak) and collection 3:30pm until 6pm (PM peak). The children whom are enrolled on the half-day session tend to be collected between 12:15pm and 1:15pm.
- 4.1.3 It is expected that there will be 25 members of staff to be on site at any time, with some arriving before, and departing after the operating hours.

4.2 *Pedestrian Access*

- 4.2.1 At the site access, dropped kerbs and tactile paving will be provided to aid pedestrians crossing the junction. A pedestrian access/egress will be created at the northern side of the access junction. The pedestrian access will provide a direct at grade pedestrian route from Croft Lane to the building entrance.
- 4.2.2 Comments made from Transport for Greater Manchester [TfGM] recommend that the applicant fund a controlled pedestrian crossing facility across Croft Lane. It has been observed that pedestrians currently traveling along Croft Lane regularly cross over the carriageway at various points, without issue. The analysis of the Crashmap database for the most recent 5-year assessment period to provide a robust assessment shows that there has been no conflict between pedestrians and vehicles. Furthermore, the former use of the site, which is included with the most recent Crashmap assessment would have required people to cross Croft Lane at peak times in order to access the industrial estate on the opposite side of Croft Lane. It is expected that the only pedestrians which would be crossing at the site frontage would be from the small residential estate to the north-east of the site and pedestrians from the southbound hourly bus service. This would represent a very small proportion of people that may walk to the site, or need to cross the road. Staff and/ or parents travelling from the south of the site have several opportunities to cross Croft Lane in the form of either an informal or signalised crossing. Therefore, the installation of a signalised pedestrianised crossing on Croft Lane is not considered necessary for the proposed development.

4.3 *Cyclist Access*

- 4.3.1 Cycle access to the site will be from the all-purpose access on Croft Lane. Cycle parking will be provided within the site and located adjacent to the site access and directly opposite the building entrance, providing convenient and overlooked cycle parking arrangements.

4.4 *Bus Passenger Access*

- 4.4.1 Bus stops are located at the site frontage. TfGM have recommended that raised kerbs and a bus clearways are funded by the development. The raised kerbs will help passengers on and off buses, which may help those with prams. The bus clearway would tie in with the current Traffic Restriction Orders, helping to ensure parents do not stop on Croft Lane.

4.5 *Vehicular Access*

- 4.5.1 The site access is proposed in the location of the existing site access, which was previously used as a vehicular access for the former uses on the site as a car park. The access is to be reconfigured to be 5.5m in width, with a 2.0m footway on the northern side. The site access will be designed to provide tactile paving and dropped kerbs across the junction bellmouth.
- 4.5.2 For a 30mph speed limit, junction visibility splays are generally required to be 2.4m x 43m based on guidance contained within Manual for Streets. The vehicle speed survey data presented at Section 3.5 shows that the 85th percentile speed is slightly above the 30mph speed limit. Again, based on Manual for Streets guidance, the recorded vehicle speeds require visibility splays of approximately 47m to the north and 50m to the south at a minor road distance of 2.4m. Therefore, the site access visibility splays are shown on **Drawing 152508-001** at **Appendix F** with 2.4m x 50m in both directions.
- 4.5.3 The site will be secured by a set of gates when not operational, which are set back 5m from the back of footway, providing space for a vehicle to wait between the footway and the gates, in order to open and close the gates and the beginning and end of the day.
- 4.5.4 The strategy for security will be that the first arrival on site in the morning will open the gates in the morning and they will be subsequently closed by the final person to leave the site that day. During the operational day, the gates will remain open.

4.6 *Parking*

- 4.6.1 Bury Council's Guidance Note 11 'Parking Standards in Bury' dated May 2007 contains the maximum car and minimum cycle parking standards for developments in the area. Those relevant to 'Crèche, day nursery or day centre' developments are shown in **Table 5**.

Table 5 – Parking Standards

Type of Parking	Standard
Maximum car parking provision (excluding disabled parking)	1 per full time equivalent staff
Minimum car parking provision for disabled persons	Over 200 Bays -4 bays plus 4% of total capacity.
Minimum cycle parking provision	1 per 10 full time equivalent staff, minimum of 2 spaces for pupils

- 4.6.2 The development proposed 28 car parking spaces, including one accessible bay. A total of 8 spaces are provided with transition zones to allow for easier access by those with small children.
- 4.6.3 The development will provide three electric vehicle charging spaces (10%), with an additional three spaces with passive provision for the future conversion to electric vehicle charging.
- 4.6.4 In order to determine the modal split of staff traveling to work at the site, the Census 2011 category 'QS701EW – Method of travel to work' has been interrogated for the Bury 013 MSOA (Middle Super Output Area) within which the site is located to review the existing travel to work patterns for people traveling into the ward. The following results have been obtained from the 2011 Census (people working from home and not in employment have been removed from the sample).

Table 6 – Census Results for 'QS701EW – Method of travel to work' [Nomis]

Method of Travel to Work	Modal Split
Underground, Metro, Light Rail, Tram	2.2%
Train	0.7%
Bus, Minibus or Coach	8.5%
Taxi	0.8%
Motorcycle, Scooter or Moped	0.3%
Driving a Car or Van	69.9%
Passenger in a Car or Van	6.7%
Bicycle	1.3%
On Foot	9.3%
Other Method of Travel to Work	0.3%

- 4.6.5 From the information gained from the Census, it is expected that 76.6% of staff will be arriving by car, either driving themselves or as a passenger. The modal split for driving a car or van is 69.9%, when this is applied to the 25 staff it could be expected that 17.5 (18) staff will drive to work. This figure is comfortably within the parking standards for Bury Council and will enable the additional spaces to be used for pick-up and drop-offs. Providing adequate car parking and pick up and drop off facilities on site will reduce the potential for staff and parents to park off site.
- 4.6.6 Three covered cycle stands, allowing for the storage of six cycles, are located to the south of the building. This complies with the requirement which equates to three spaces for staff and a minimum of two for pupils.

4.7 Servicing

- 4.7.1 The vehicle that will service the site most frequently is a refuse vehicle. **Drawing 152508-002**, attached at **Appendix F**, demonstrates that a large refuse vehicle can access the site, manoeuvre to a position suitable for refuse collection and then leave the site in forward gear.

- 4.7.2 In order to maximise space available to manoeuvre, and also improve safety for users of the site, the collection will be carried out by a private company and arranged to take place out of hours.

5. Accessibility by Sustainable Modes

5.1 Overview

5.1.1 This section of the report considers the accessibility of the site in order to review the opportunities that will exist for staff and clientele to travel by the following modes:

- Accessibility on foot;
- Accessibility by cycle;
- Accessibility by bus;
- Accessibility by tram; and,
- Accessibility by rail.

5.2 Accessibility on Foot

5.2.1 The Planning for Walking Guidance (2015), published by CIHT highlights that “Across Britain about 80 per cent of journeys shorter than 1 mile are made wholly on foot – something that has changed little in 30 years. For journeys that are 1 to 2 miles long, 26 per cent are made on foot (NTS, 2012).”

5.2.2 CIHT notes that people will be willing to walk further to reflect a greater perceived quality or importance of a service or amenity, for example rail services. The report does not provide a definitive view on distances, however, the report makes reference to the IHT publication “Providing for Journeys on Foot,” (2000) which suggests a maximum walking distance for commuting, school and sightseeing as 2000m (24-minute walk).

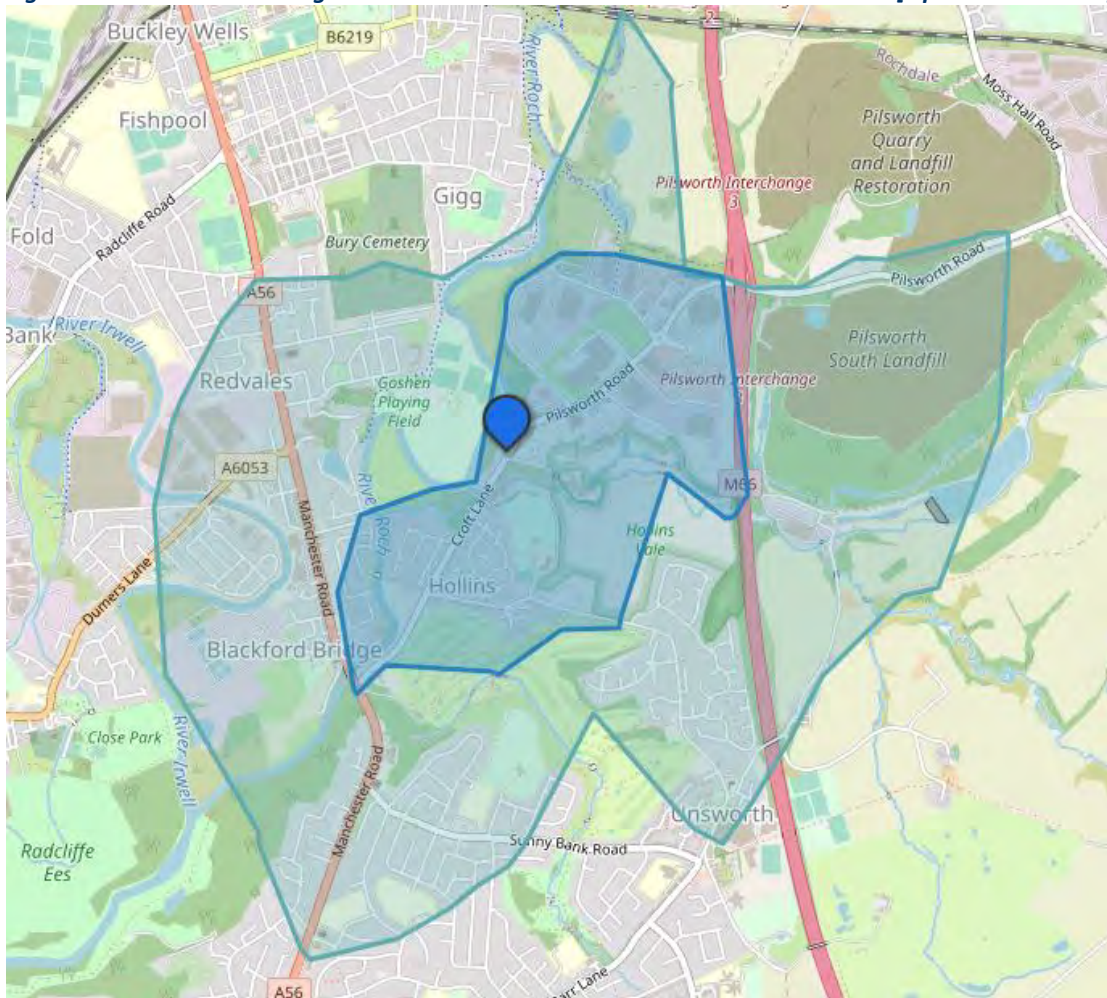
5.2.3 It is also important to consider the routes that would be taken to get to these locations. Building Sustainable Transport into New Developments (DfT, 2008) gives the following advice on pedestrian catchment areas:

“Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes’ walking distance (around 800 metres). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating.”

5.2.4 **Figure 5** identifies the 1000m and 2000m walking isochrones from the site. It is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

Figure 5 – Indicative Walking Isochrones

[OpenRouteService]



5.2.5 From **Figure 5**, the following amenities and facilities are located within walking distance of the site:

- Bus stops on Croft Lane (30-50m)
- Cohens Chemist (100m)
- Hollins Bakery (800m)
- McDonald's (700m)
- KFC (800m)
- Hollins Grundy Primary School (1.0km)
- Asda Superstore (1.0km)
- Spar/ Greggs (1.2km)

5.3 Accessibility Audit Overview

5.3.1 As part of the site visit, an accessibility audit was undertaken in terms of pedestrian and cycling facilities from areas that staff and parents and children may be able to walk and/ or cycle from to get to/ from the Nursery School.

5.3.2 Attached at **Appendix G** is **Diagram 1** which outlines the roads which were assessed. Each route has been colour coordinated to represent different areas people may be expected to walk/ cycle from. The site is represented by the purple outline and the colours below outline the following areas:

- Red: Hollins Brow/ Manchester Road Junction → Croft Lane → Site
- Orange: Manchester Road (N) → Hollins Brow/ Manchester Road Junction
- Yellow: Manchester Road (S) → Hollins Brow/ Manchester Road Junction
- Green: Roach Valley Greenway → Hollins Brow/ Hollins Lane/ Croft Lane Mini Roundabout
- Blue: Hollins Lane → Hollins Brow/ Hollins Lane/ Croft Lane Mini Roundabout
- Brown: Melton Drive/ Wilton Drive → Croft Lane
- Black: Pilsworth Road → Site

5.3.3 The associated photos with the site visit are attached at **Appendix H** and are referenced throughout Sections 5.4 and 5.6.

5.4 Accessibility Audit of Pedestrian Infrastructure

Red Route

5.4.1 At the Hollins Brow/ Manchester Road Junction, dropped kerbs and tactile paving (**Photo 1**) are provided for pedestrians to cross Hollins Brow as there is no footway present on the eastern side of the carriageway, until the mini roundabout, located approximately 410m north-east of the junction. Street lighting is provided along Hollins Brow.

5.4.2 After the mini roundabout junction, there is an intermittent footway present on the eastern side of the carriageway, but there are several opportunities for pedestrians to cross the carriageway. There is an informal pedestrian crossing located approximately 55m north of the mini roundabout (**Photo 2**) and a signalised pedestrian crossing approximately 350m south of the site (**Photo 3**).

5.4.3 There are dropped kerbs provided across Ainwick Drive (**Photo 4**).

5.4.4 While there is no pedestrian crossing immediately within the vicinity of the site, there are dropped kerbs present between the access to Borden Way and the Roach Bank Inn which can be utilised by pedestrians.

Orange Route

5.4.5 Manchester Road (N) provides access to two bus stops with high frequency services. For parents and staff using the northbound stop, a signalised pedestrian crossing is available approximately 85m north, with dropped kerbs and tactile paving to allow pedestrians to cross (**Photo 5**). From here, they are either able to back track to the Hollins Brow Junction, or continue north to the Roch Valley Greenway.

- 5.4.6 Footways are provided on either side of the carriageway and Manchester Road is street-lit.
- 5.4.7 It was noted that there were some unfinished surfaces at access points, but markings can be seen to show that improvements are still to be carried out on site. **(Photos 6-8)**

Yellow Route

- 5.4.8 Manchester Road (S) connects southern residential properties to the Hollins Brow Junction. There are wide footways present and the footpaths on both sides of the carriageway are partially separated by a grass verge. Streetlighting is also present.
- 5.4.9 At the junction between the A56 and Sunny Bank Road, there are signalised crossing with pedestrian islands in the centre of the road. This is located approximately 375m from the Manchester Road/ Hollins Brow junction.

Green Route

- 5.4.10 This route is a small part of the Roch Valley Greenway and provides a connection over the River Roch. The beginning and end of this part of the Greenway is tarmacked, while the remainder of the route is a mix of loose stone and unmaintained ground. Parts of the Greenway is also steep which may prove impractical for those with young children or prams or may provide a difficult surface to walk on it wet or icy conditions **(Photo 9)**. However, this does not limit people in this area from accessing the site by walking as they are still able to use Manchester Road as an alternative route.
- 5.4.11 Streetlighting is also present along the Greenway and within the residential areas surrounding the Greenway.

Blue Route

- 5.4.12 Footpaths, street lighting and additional bus stops are located on Hollins Lane. However, it was observed that vehicles park straddling the pavement **(Photo 10)**, which could make it difficult for parents/ guardians with prams to pass the parked cars.
- 5.4.13 To avoid this, pedestrians would be able to follow the Brown Route, through the adjacent residential estate to access Croft Lane, which would provide quieter routes to walk through, compared with Hollins Lane.

Brown Route

- 5.4.14 The Brown Route is located through a quiet residential area and has street lighting and footpaths present throughout the route. Dropped kerbs are provided across junctions and access to houses.

- 5.4.15 At the egress point at Croft Lane/ Melton Drive, dropped kerbs are provided. In order to help pedestrians, cross the carriageway to the site side, the signalised pedestrian crossing is located approximately 80m south of Melton Drive.

Black Route

- 5.4.16 North of the site is predominately industrial and retail premises and therefore it is unlikely that parents will be travelling to the site from the north to drop off their children. However, as there are takeaway food places, for example McDonald's within the acceptable walking distance of 1km, staff may frequent the retail park as part of their lunch break. Footpaths are located on either side of the carriageway and street lighting is also present.

5.5 Pedestrian Audit Summary

- 5.5.1 The pedestrian audit has shown that within the vicinity of the site, there are accessible walking routes, to the north and south of the site. Footpaths are located on either side of the carriageway across the site frontage, and there are opportunities to cross Croft Lane to the south of the site, in the form of a signalised or informal crossing.
- 5.5.2 There is adequate pedestrian infrastructure within the vicinity of the site. Parents/ guardians with small children are unlikely to travel long distances on foot, however, there are residential areas within close proximity to the nursery from which it would not be unreasonable to walk. Staff members will also benefit from the pedestrian infrastructure which will encourage walking if they live within walking distance of the site.

5.6 Accessibility by Cycle

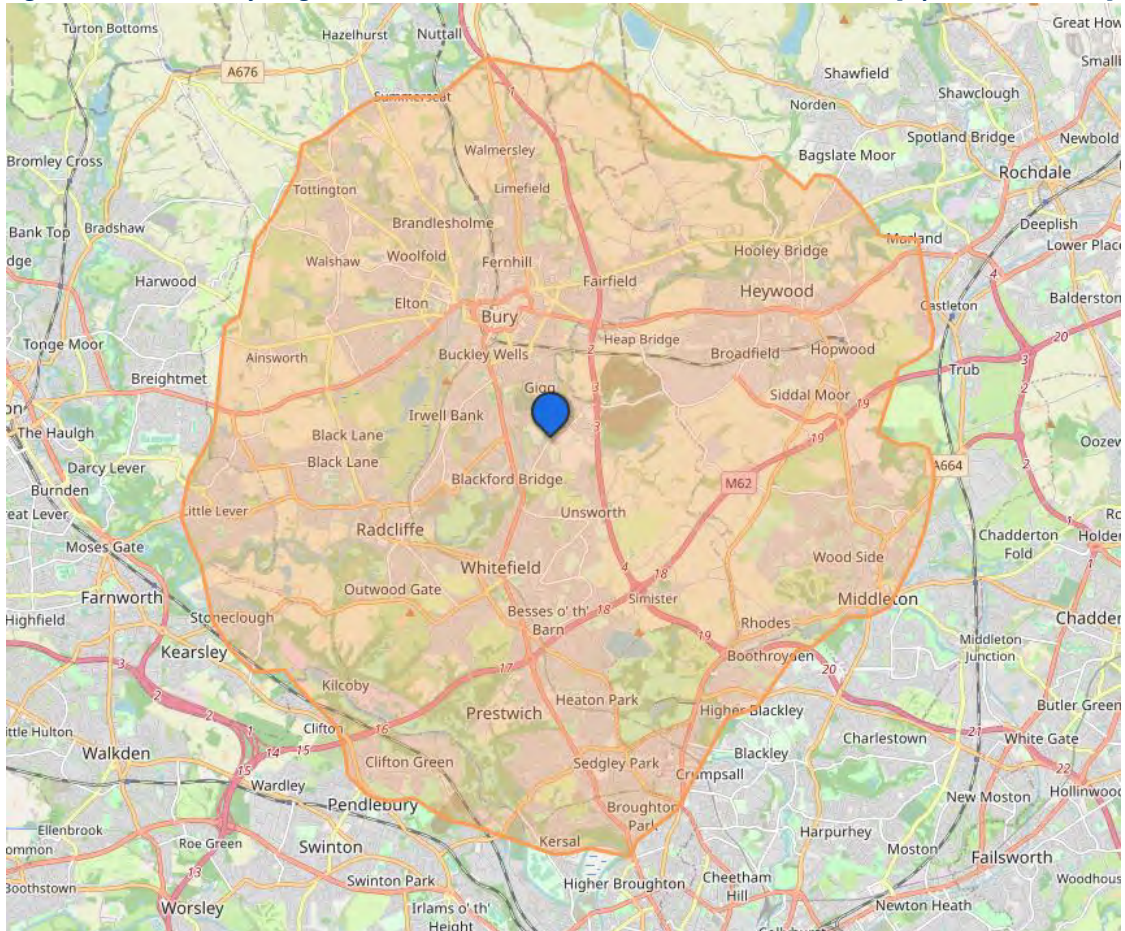
- 5.6.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach. CIHT's Planning for Cycling (2014) states that:

"The majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips. Electric bicycles extend the range that can be cycled comfortably, and combined cycle-rail or cycle-bus journeys offer an alternative to car travel for many longer trips."

- 5.6.2 **Figure 6** indicates destinations that lie within an 8km cycling isochrone of the site. It is provided as an indication of where destinations lie and the general extent to which the site is accessible by cycle.

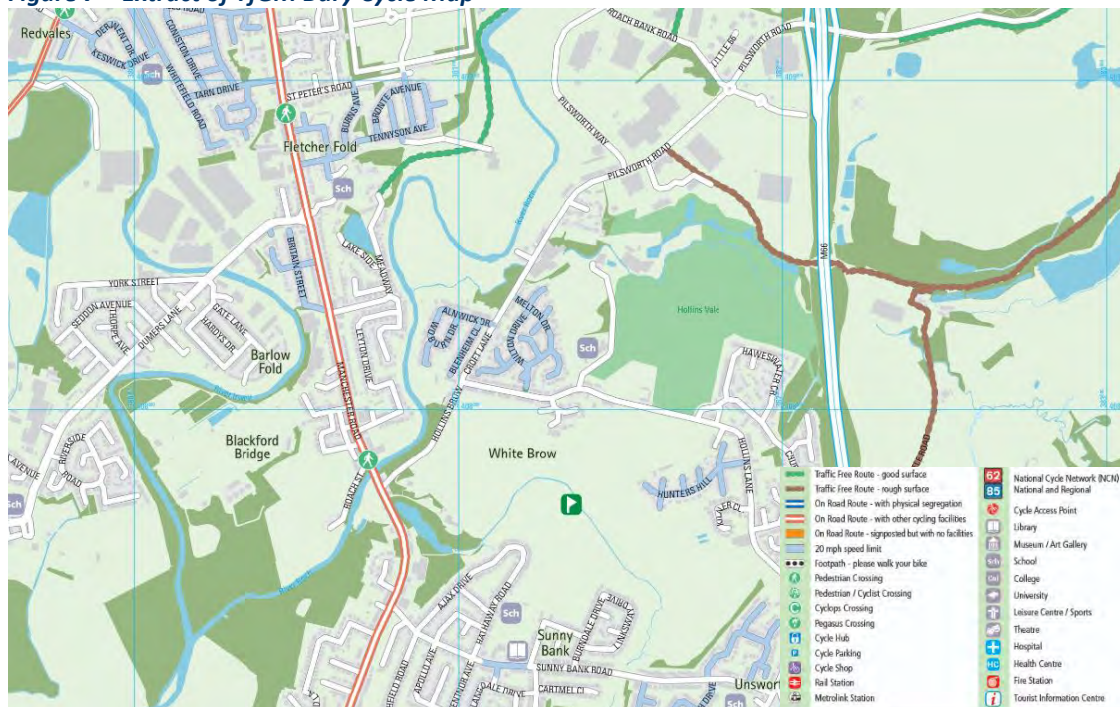
Figure 6 – Indicative Cycling Isochrone

[OpenRouteService]



- 5.6.3 It is acknowledged that parents/ guardians are unlikely to cycle with small children, however members of staff could travel by bicycle either as the sole mode of transport or as part of a multimodal journey.
- 5.6.4 **Figure 6** indicates that Bury, Whitefield, Radcliffe and surrounding areas are located within cycling distance. However, as with walking, it is considered that the available cycle infrastructure is an important factor when it comes to accessibility. **Figure 7**, overleaf, shows an extract of Bury Cycle Map, prepared by Transport for Greater Manchester (TfGM), detailing cycle routes in the vicinity of the site.

Figure 7 – Extract of TfGM Bury Cycle Map



5.6.5 Roch Valley Greenway is a traffic-free route that can be accessed approximately 900m to the northeast which connects the residential estates located on Harrow Close and Leyton Drive, to the south-west of the proposed development. Manchester Road, approximately 1km to the southwest, has on-carriageway cycle lanes. Manchester Road connects to the north and Whitefield to the south.

5.7 Accessibility Audit of Cycling Infrastructure

Red Route

5.7.1 While there are no formal cycling facilities located on Croft Lane, it was noted that five cyclists were observed travelling past the site, northbound, during the manual traffic count. The hatched lining in the middle of the road provides drivers with more space to pass cyclists.

Orange and Yellow Route

5.7.2 An on-road cycle path begins in the Yellow section of the route, with initially only being present on the western side of the carriageway. After the Manchester Road/ Hollins Brow junction, and as a result of new roadworks which have recently been undertaken along Manchester Road, a peak time cycle lane is in operation. Signs posted along Manchester Road (**Photo 11**) highlight that the cycle path is in operation between 07:30-09:30 and 15:00-18:30. These time periods would therefore be beneficial for parents dropping off children to the Nursery or staff travelling to work. It was noted that vehicles do park in the cycle lane outside of the designated times (**Photo 12**).

Green Route

- 5.7.3 The Green Route represents a small extract of the Roch Valley Greenway which in this area connects the residential estates of Harrow Close and Leyton Drive to Croft Lane. While Roch Valley is an option for cyclists, it will depend on the user's cycling ability whether they use the route due to a narrow bridge and a steep gradient (**Photo 13**) with an unmade surface.

Blue and Brown Routes

- 5.7.4 There is no on-street or off-street infrastructure for cyclist, but there is a cyclist only access point (**Photo 14**) from Hollins Lane to Melton Drive, which would provide a quieter route for cyclist travelling to the site from areas along Hollins Lane and the village of Unsworth to the south-east of the site.

5.8 Cyclist Audit Summary

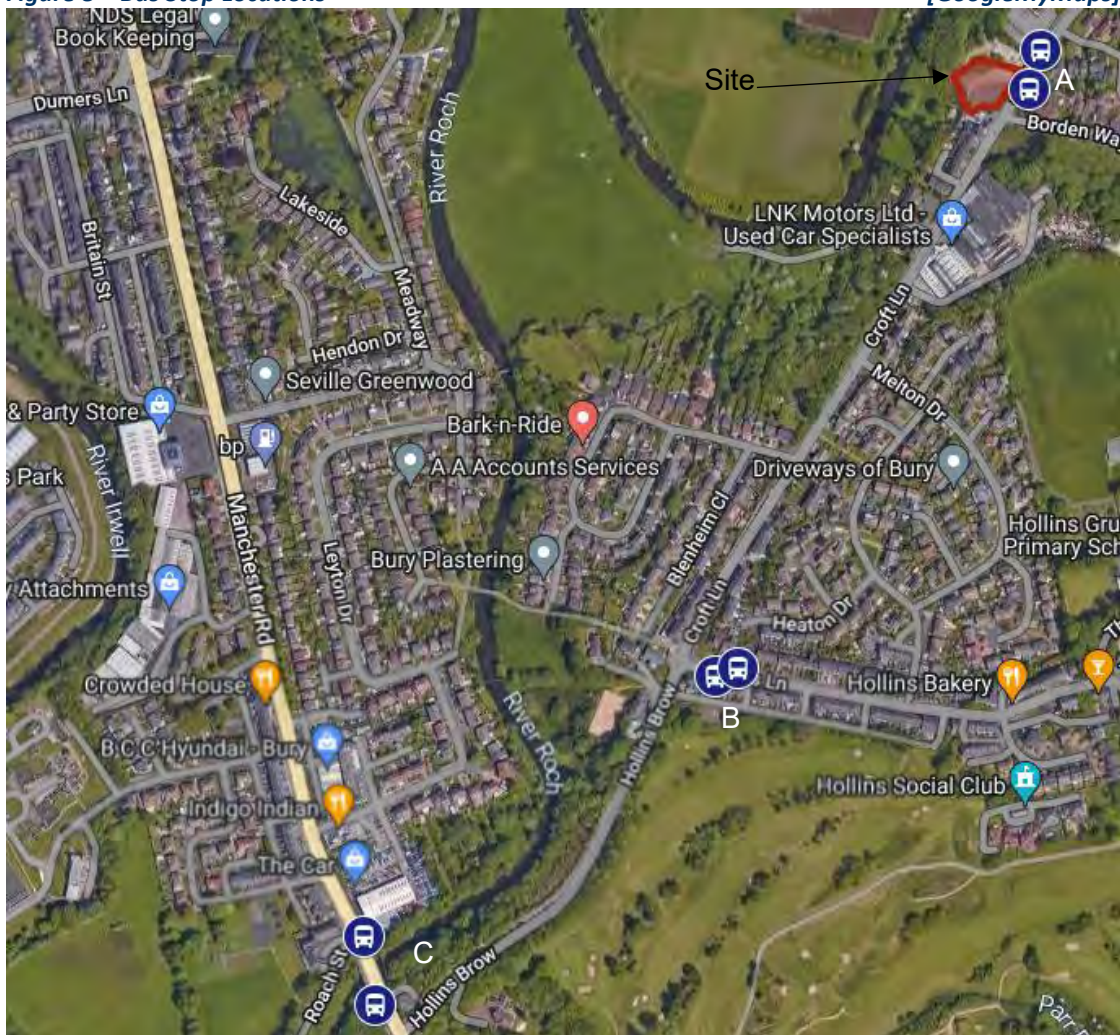
- 5.8.1 From the routes assessed as part of the audit, it would be reasonable to assume that parents and/ or staff would be able to cycle to the site.

5.9 Accessibility by Bus

- 5.9.1 The closest bus stops to the site are located on Croft Lane, at a distance approximately 30-50m from the site. **Figure 8** shows the location of the bus stops within a 1km walking distance, that offer different services from the site frontage. While this is above the maximum walking distance to bus stops, high frequency services available on Manchester Road may be beneficial to staff.

Figure 8 – Bus Stop Locations

[GoogleMyMaps]



5.9.2 Details of the stop are provided in **Table 7**.

Table 7 – Bus Stop Information

Bus Stop Location	Bus Stop Information		
Croft Lane Borden Way (Location A)	Reference	→	MANTGMPA
	Direction of travel	→	Southbound
	Distance from site	→	Approx. 30m
	Facilities	→	Pole with flag
	Services	→	94
	Reference	→	MANDMGJP
	Direction of travel	→	Northbound
	Distance from site	→	Approx. 50m
	Facilities	→	Pole with flag
	Services	→	94

Bus Stop Location	Bus Stop Information		
Hollins Lane Croft Lane (Location B)	Reference	→	MANDMPTJ
	Direction of travel	→	Eastbound
	Distance from site	→	Approx. 615m
	Facilities	→	Pole with flag and timetable information
	Services	→	94, 97, 894
	Reference	→	MANDMPTG
	Direction of travel	→	Westbound/ Northbound
	Distance from site	→	Approx. 605m
	Facilities	→	Pole with flag
	Services	→	94, 97, 894
A56 Blackford Bridge (Location C)	Reference	→	MANDMWTM
	Direction of travel	→	Southeast bound
	Distance from site	→	1km
	Facilities	→	Shelter with seating and timetable information, raised kerbs, and pole with flag
	Services	→	95, 97, 135, 894
	Reference	→	MANDMWTJ
	Direction of travel	→	Northwest bound
	Distance from site	→	1km
	Facilities	→	Shelter with seating and timetable information, raised kerbs, and pole with flag
	Services	→	95, 97, 135, 894

5.9.3 Details of the services available from the stops are given in **Table 8**.

Table 8 – Summary of Bus Services

Number	Route	Approximate Peak Frequency		
		Mon – Sat Daytime	Mon- Sat Evening	Sunday
94	Bury – Prestwich – Cheetham Hill – North Manchester General Hospital	60 minutes	120 minutes	120 minutes
95	Bury Interchange – Salford Shopping Centre	30 minutes	60-120 minutes	60 minutes
97	Manchester Shudehill – Bury Interchange	30 minutes	30-60 minutes	30 minutes
135	Manchester Piccadilly – Bury Interchange	9 minutes	9-20 minutes	10 minutes
894	St. Monica's RC High School – Unsworth – Radcliffe – Bradley Fold	1AM/ 1PM Journey	No Service	No Service

5.9.4 These buses provide a frequent service to the site between Bury Interchange and Manchester, which allow for onward journeys by bus and by tram.

5.10 Accessibility by Tram

- 5.10.1 The closest tram stop to the site is Bury, which is located at a distance of approximately 4km. Bury tram stop is part of Bury Interchange, which is served by the aforementioned bus services. The location of the elements of the Interchange are shown on **Figure 9**.

Figure 9 – Location of Bus Station and Tram Stop

[GoogleMyMaps]



- 5.10.2 Bury tram stop is on the Green and Yellow lines, that provide services to Altrincham and Manchester Piccadilly, respectively. Each line provides services every 12 minutes, between the hours of approximately 6am to midnight.

5.11 Accessibility by Rail

- 5.11.1 The closest rail stations to the site are Kearsley (10.0km) and Mills Hill (10.4km). The stations are located such that they are beyond the distance people could be expected to cycle and do not connect with bus services. Therefore, it is not reasonable to expect that members of staff will utilise train as a mode of transport to access the site.

5.12 Accessibility Summary

- 5.12.1 The site is considered to be accessible by active and public transport. As such, clientele, staff and visitors to the site will have opportunity to utilise sustainable travel options, where appropriate.

6. Trip Generation Assessment

- 6.1 To predict the trip the development could be expected to generate, the TRICS v7.10.1 database has been used to derive average multimodal and vehicular trip rates for the proposed used. The search parameters set out in **Table 9** have been used and the full output are included at **Appendix I**.

Table 9 – TRICS Search Parameters

Land Use	Trip Rate Selection Criteria
Education	→ Land Use Category: 'Nursery School'; → Multimodal trip rate surveys; → Number of pupils: 65 to 137; → Northern Ireland, Ireland and Greater London were excluded; → Saturday and Sunday surveys were excluded; and, → Suburban sites only were used.

6.2 Multimodal Trip Generation

- 6.2.1 **Table 10** provides details of the multimodal two-way trip rates along with the corresponding modal percentage split and generated trip for 120 children. The data has been split between weekday AM (08:00-09:00) and PM (17:00-18:00) peaks.

Table 10 – Multimodal Trips from Development Proposals

Time Period	Mode of Travel	Trip Rate	Modal Split	Generations
AM Peak 08:00-09:00	Pedestrians	0.089	16.0%	11
	Cyclists	0.003	0.5%	0
	Public Transport Users	0.015	2.7%	2
	Vehicle Occupants	0.450	80.8%	54
	Total People Trips	0.557	100.0%	67
PM Peak 17:00-18:00	Pedestrians	0.146	27.6%	18
	Cyclists	0.003	0.6%	0
	Public Transport Users	0.007	1.3%	1
	Vehicle Occupants	0.373	70.5%	45
	Total People Trips	0.529	100.0%	63

- 6.2.2 The predicted demand for walking, cycling and public transport in the network peak hours at a level which is unlikely to have a detrimental impact on the existing infrastructure.

6.3 Vehicle Trip Generation

- 6.3.1 **Table 11** provides details of the vehicular trip rates along with the corresponding generated trips for 120 children. The data has been split between weekday AM (8:00-9:00) and PM (17:00-18:00) peaks in order to assess the impact of the development during the traditional network peaks.

Table 11 – Vehicle Trips for Development Proposals

Time Period	Trip Rates		Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak 08:00-09:00	0.195	0.175	23	21	44
PM Peak 17:00-18:00	0.132	0.169	16	20	36

6.3.2 The development peak hour traffic generations are predicted to 44 in the AM peak and 36 in the PM peak. This equates to approximately 1 vehicles movement every approximately 1.4 - 1.6 minutes.

6.3.3 A worst case assumption is that all traffic generations in the peak hours are associated with dropping off/ collecting children at the site. The maximum number of vehicles per hour is 23, arriving in the AM peak hour. If each arrival spends 10 minutes dropping off their child, this requires a total of 230 minutes. When divided by 60 minutes, this identifies a parking demand for 4 spaces. Based on the staff parking assessment, it is expected that 18 out of the 25 staff will drive to work. This will leave 10 spaces for pick-up and drop-off, with 8 of these spaces having a transition zone to assist with the transfer of children to/from vehicles. It is considered that the parking provision will be adequate for the peak demand period.

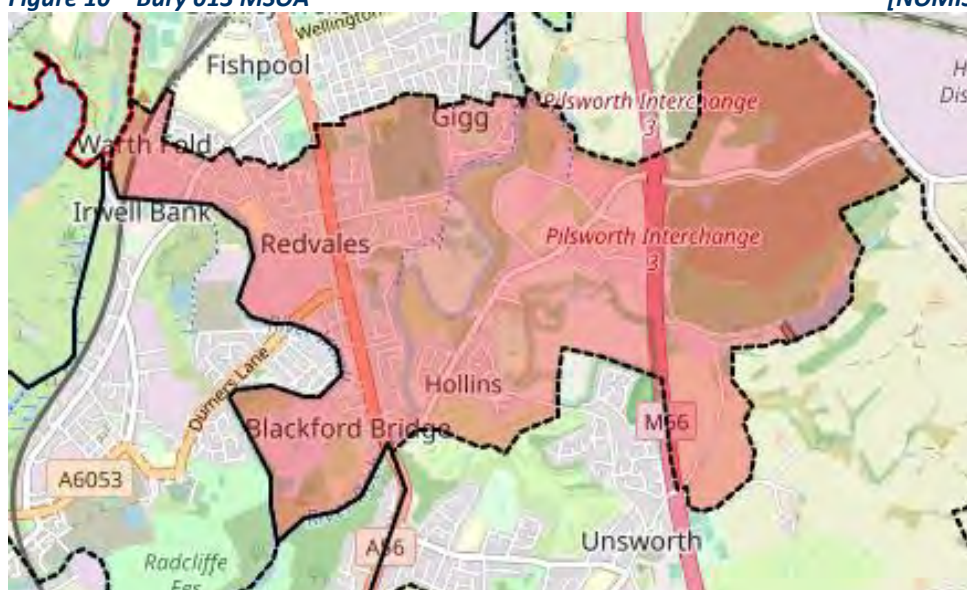
6.4 Trip Distribution

6.4.1 Transport for Greater Manchester [TfGM] have requested that the distribution of development trips onto the network be determined.

6.4.2 The distribution of the traffic generated by the site will be predicted using the 'WU03EW – Location of usual residence and place of work by method of travel to work (MSOA level)' dataset from the 2011 Census. The site falls within Bury 013 MSA (Middle Super Output Area) which is illustrated in **Figure 10**.

Figure 10 – Bury 013 MSA

[NOMIS]



- 6.4.3 The 2011 Census data has been analysed to create a gravity model for the site. As the MSOA data includes all nationwide origins, the results of the search have been refined to exclude all MSOA's which generate less than 30 vehicle trips, which equates to less than 0.93% of the overall sample. It is considered that this excluded information is not relevant in terms of establishing a 'likely' distribution of traffic. The gravity model is attached at **Appendix J**.
- 6.4.4 The figures attached at **Appendix J** shows the percentage distribution of the predicted travel to and from the proposed development. The percentage distribution shows that approximately 60% of traffic is from the south and 40% from the north.
- 6.4.5 Considering the AM peak period as the operational peak, no junctions on the local highway network exceed 30 vehicles per hour as a result of the development. The maximum increase at any one junction approach is 13 vehicles or approximately 1 every 5 minutes. This is low and is unlikely to have any material effect on junction capacity. TfGM HFAS recommends an increase of about 30 vehs/hr at a junction as an appropriate threshold for considering a traffic impact assessment. It is therefore considered that detailed junction capacity modelling is not required at these junctions.
- 6.4.6 As illustrated on the figures attached at **Appendix J**, as development traffic moves away from the site, the impact the traffic has on each subsequent junction is diluted.

6.5 Site Access/ Croft Lane Junction Assessment

- 6.5.1 As shown by the Gravity Model, only the Site Access/ Croft Lane junction has been predicted to have an increase in greater than 30vehs/hr and therefore a detailed capacity assessment has been undertaken.
- 6.5.2 The proposed access has been modelled at 2023 and 2028 to investigate the effects of the proposed development.

Baseline Traffic Flows

- 6.5.3 Fully classified traffic counts were undertaken by Sanderson Associates during the AM peak period – which is both the operational peak time period for the Nursery School and the peak period on the highway network on Croft Lane.
- 6.5.4 The Manual Traffic Counts and Composition of the traffic are found in **Tables 1, 2 and 3**, located in Section 3.4.

Future Year Assessment

- 6.5.5 TEMPro growth rates have been calculated from the 2023 base year to a future year of 2028. The parameters and growth rates used from the TEMPro 7.2b database are shown in the table, below.

Table 12 – TEMPro Growth Rates and Parameters

Base Year	Growthed Year	Growth Factor
2023	2028	1.0377
TEMPro 7.2b, RTF 2018 Scenario 1 – Reference, Minor Roads, Region Bury 013 MSOA		

Junction Modelling

- 6.5.6 Detailed junction capacity assessments of the access have been undertaken using the PICADY module of the ‘Junctions 9’ modelling software.
- 6.5.7 For the access point, the predicted RFC and Max Queue values are presented for the 2023 base scenario (existing junction operation) and then for growthed year of 2028. The full copy of the modelling output for the access point is included at **Appendix K**.
- 6.5.8 A Ratio to Flow Capacity 9RFC) value of below 0.85, is typically accepted threshold of practical reserve capacity for priority junctions.

Figure 11 – Croft Lane/ Site Access

	AM			
	Set ID	Queue (Veh)	Delay (s)	RFC
Croft Lane - Site Access - 2023 Base + Dev				
Stream B-AC	D4	0.1	15.73	0.09
Stream C-AB		0.1	4.90	0.04
Croft Lane - Site Access - 2028 Base + Dev				
Stream B-AC	D5	0.1	16.55	0.10
Stream C-AB		0.1	4.85	0.05

- 6.5.9 The capacity assessment demonstrates that the modelling scenarios at 2023 and 2028 operate well below 0.85 RFC and therefore it is considered that the junction will operate within capacity and with a large practical reserve.

6.6 Former Use

- 6.6.1 As previously mentioned, the site is currently marked as a 28-space car park. ‘Permit holders only’ signs around the site suggest that it was used for staff parking by a local employment site. As such, it could be expected that people would have arrived during the AM peak period and departed during the PM peak.
- 6.6.2 A review of satellite imagery, shows that the car park was used from at least 2000 until at least May 2019 with satellite imagery showing a total of 22 vehicles parked in 2019. These vehicles were occurring on the local highway network, and in recent times.
- 6.6.3 Although not currently in use, the car park could be reinstated and could, therefore, generate up to 28 arrivals during the AM peak and up to 28 departures during the PM peak.

- 6.6.4 The proposals would represent an increase in 16 movements in the AM peak period and nine movements in the PM peak period, although trips would be split between arrivals and departures.
- 6.6.5 It is not considered that the small number of vehicle movements that could be expected to be generated by the development would have an unduly negative impact on the highway network. It is unlikely that the additional trips above the car park use would be discernible amongst daily fluctuations in traffic on the surrounding roads.

7. Summary and Conclusions

- 7.1 Sanderson Associates Consulting Engineers has been appointed to prepare a Transport Statement to support the application for the provision of a Nursery School, to cater for up to 120 children, on land at Croft Lane, Unsworth.
- 7.2 The site is located to the northwest of Croft Lane, approximately 2.5km southeast of Bury town centre. Part of the site is unused land while the remainder is a car park.
- 7.3 A suitable access with the required sight lines is to be provided and pedestrian routes within the site will connect to existing provision on Croft Lane. Sufficient car and cycle parking, in relation to Bury Council's standards, are to be provided. Space is also available to allow a refuse vehicle to manoeuvre within the site and exit in a forward gear.
- 7.4 A road traffic incident review has not highlighted any existing accident trends that would be cause for concern with regards the proposals.
- 7.5 The development peak hour total traffic generations are to be 44 in the AM peak and 36 in PM peak. This equates to approximately 1 vehicle movement every 1.4-1.6 minutes. The former use of the site as a 28 space car park is known to have generated significant traffic as recently as 2019. A comparison on potential traffic generations from the former use and those from the proposed use has identified a potential increase of 16 movements in the AM peak period eight in the PM peak period, although the proposed development trips would be split between arrivals and departures. It is not considered that the number of vehicle movements that could be expected to be generated by the development would have an unduly negative impact on the highway network.
- 7.6 The site is accessible by active transport and by buses. It is considered that there are opportunities for members of staff and parents to travel to the site by modes other than the private car.
- 7.7 The predicted demand for walking, cycling and public transport in the network peak hours are at a level which is unlikely to have a detrimental impact on the existing infrastructure.
- 7.8 Based on the pre-application comments received from Transport for Greater Manchester, this Transport Statement has established the following:
- An accessibility audit has been undertaken of the walking and cycling infrastructure of the surrounding routes that people may be able to take to sustainable travel to the site. For pedestrians travelling to the site from the south, on the eastern side of the carriageway, there are opportunities to cross Croft Lane at either informal or signalised crossings. It is expected that the only pedestrians which would be crossing at the site frontage would be from the small residential estate to the north-east of the site and pedestrians from the southbound hourly bus service. This would represent a very small proportion of people that may walk to the site, or need to cross the road. In addition, no highway safety problems have been identified within the vicinity of the site, which includes pedestrians

crossing Croft Lane associated with the former use of the site. Therefore, the installation of a signalised pedestrianised crossing on Croft Lane is not considered necessary for the proposed development.

- TFGM have recommended that the bus stops located at the site frontage are improved to provide raised kerbs and bus clearways, which will aid passengers with boarding the bus from the stops and the clearway will help to ensure parents do not park within the bus stops. These bus stops would tie in with the existing traffic regulation orders in front of the site. As adequate off-street parking will be provided by the development, the issue of on-street parking should not be considered an issue.
- The site access has been designed with tactile paving and dropped kerbs. The entrance gate has been setback at a distance of 5m to allow for a waiting vehicle to be located off of the carriageway and footway while the gates are opened or closed. It has been demonstrated that an 11.125m Refuse Vehicle can adequately service the site. The refuse vehicle is the largest service vehicle that could be expected at the site on a regular basis.
- A manual speed survey was conducted to determine the 85th %tile speeds of vehicles past the site. The resultant speeds have resulting in visibility splays of 2.4m x 50m in both directions for the site access, which have been shown at **Appendix F in Drawing 152508-001**.
- TfGM HFAS recommends an increase of about 30 vehicles/hr at a junction as an appropriate threshold for a traffic assessment. An assessment of development traffic generations has shown that 44 vehicles could be expected in the AM peak hour (two-way movements). This is the busiest network and operational peak hour. Therefore, the site access has been modelled. The capacity assessment has shown the highway network has sufficient capacity to accommodate the increase in traffic and will be sustainable with the associated background growth. No other junctions on the highway network exceed 30 vehicles/ hr as a result of the development and therefore detailed capacity assessments have not been undertaken.

7.9 It is concluded that the development is in accordance with the Bury Local Plan and satisfies paragraph 111 of the NPPF, as an unacceptable impact on highway safety would not result and the impact on the highway network would not be severe. As such, it is considered that the proposals should be supported on highways ground.



Appendix A

Transport for Greater Manchester Pre-application Advice

Bury Council
Planning Services
3 Knowsley Place
Duke Street
Bury
BL9 0EJ

Our ref TRA/22/489

Your ref:

17th November 2022

Dear Sir / Madam

Application Number: **02796/E**

Location: **Land off Croft Lane, Bury, BL9 8QA**

Proposal: **Erection of private day nursery, together with outdoor forest school and play area, access, associated infrastructure and landscaping (Use Class E(f)) - following withdrawal of App Ref: 68684**

Thank you for consulting Transport for Greater Manchester (TfGM) on the above pre-planning application. The following comments are offered as advice on transport issues for you to balance against other factors and are made in the context of TfGM's role in the planning process, as set out in the footnote below.¹

Background

TfGM pre-application advice has been requested by Bury Council in respect of a proposed development to create a private day nursery, located on land to the west of Croft Lane, close to the junction with Borden Way.

¹TfGM does not have any planning powers and is not a statutory consultee in the planning process. The purpose of the advice offered is to suggest the best way to improve land use / transport integration through the development proposals. Advice is based on the information provided by the applicant, and it is not TfGM's role to undertake detailed verification unless specifically commissioned to do so. ²TfGM control and manage the traffic signals in Greater Manchester, as such any schemes that alter signalised junctions need to be agreed with TfGM. Additionally, where developments impact on signalised junctions, TfGM have a duty of care to ensure that these impacts are satisfactorily mitigated as part of the planning process.

TfGM would suggest that eventually a full Transport Statement (TS) should be provided as part of the application. The TS should contain the information specified within the following sections of this letter.

1. Site Specific Comments

- I. Given the proposed nursery use, it is important to ensure that there are safe crossing facilities for parents and children to access the site. Therefore, to encourage travel to and from the development by sustainable modes, it is recommended that the applicant funds a controlled pedestrian crossing facility across Croft Lane.
- II. Site observations have confirmed that there are two existing bus stops located close to the site on Croft Lane that would benefit from upgrading. To encourage and support access to the site by public transport, TfGM recommend that the development fund the upgrade of the stops to provide bus clearways and raised kerbs. The bus clearway markings will also help to ensure that parents do not mark within the bus stops on Croft Lane.
- III. TfGM would recommend that the applicant reviews the existing traffic regulation orders surrounding the site. In particular, this review should cover whether the existing double yellow lines on Croft Lane should be extended, to help ensure that indiscriminate parking associated with the nursery does not occur.
- IV. The site access on Croft Lane should be designed to ensure the provision of tactile paving and dropped kerbs. It is noted that access gates are proposed, however, there is no setback distance to allow a car / service vehicle to stand clear of the highway. Details of the operation of the gates will be required.
- V. Achievable visibility splays of 2.4 metres x 43 metres in both directions from the site access, in accordance with standards contained within Manual for Streets, should be demonstrated on plan.
- VI. Swept path plans should be provided for the proposed servicing arrangements, demonstrating that the intended service vehicles can enter and exit the site appropriately and safely, carrying out turning manoeuvres within the on-site car park. It is noted that this is shown within the Design and Access Statement.

2. Traffic Impact and Transport Modelling Requirements (to be included within a TS)

- I. An analysis of injury accidents during the most recent five-year period, commenting on whether there are any underlying patterns of injury accidents that might be affected by the development.
- II. A clear estimate of the level of new traffic likely to be associated with the development, based on an inspection of similar (and similarly-located) developments across the UK (excluding London) via the TRICS (or similar) database. The assessment work should be undertaken using a person-trip approach and applying the appropriate modal share percentages from local Census data. Other methodologies to determine trip rates are acceptable but these should be fully explained in the TS.
- III. A clearly defined methodology for determining the distribution / assignment of development trips onto the network i.e. understanding of where such new traffic is likely to distribute to / from, based on data sources such as Census Journey-to-Work statistics and / or vehicle turning proportions at nearby junctions.
- IV. TfGM HFAS recommends an increase of about 30vehs/hr at a junction as an appropriate threshold for considering the necessity of a traffic impact assessment; this is in preference to a percentage-increase threshold, which tends to favour development in already heavily-trafficked areas.
- V. Clear details of proposed vehicular access arrangements including general servicing arrangements. An engineering drawing should be supplied showing the changes to the road network to fully understand the impact of the proposed development.
- VI. A swept path analysis should be provided for any vehicular access and to demonstrate the proposed servicing arrangements.
- VII. A review of Traffic Regulation Orders on the surrounding streets in the vicinity of the development.
- VIII. An assessment of the likely environmental/traffic impacts of HGVs during the construction process.

3. Site Accessibility by Sustainable Modes

- I. The TS should include a comprehensive review of the existing walking and cycling provision in the vicinity of the site and an audit of the footways / cycleways should be undertaken and improvements identified.
- II. The TS should provide a review of existing public transport services (including service frequency and location of nearest stations/stops), with a view to supporting improvements to existing public transport services as required.
- III. The TS should include a plan clearly showing details of the proposed pedestrian and cycle access points serving the site and linkages into the surrounding area. Connectivity with local public transport networks should be highlighted.
- IV. The applicant should consider measures to encourage access by sustainable modes. Possible measures include but are not limited to the provision of pedestrian crossings, cycleways, cycle parking, new/improved footway ensuring that there are linkages into existing cycle and pedestrian facilities, as well as upgrades to existing bus stops (where appropriate).
- V. Details of cycle parking facilities for the proposed development should also be provided (amount of spaces / type of cycle store / security of store).
- VI. A Framework Travel Plan for the development should accompany any future planning application.

4. Other

If there are any changes planned for bus infrastructure, for example relocation of existing bus stops or the creation of new bus parking areas, TfGM would request that the developer liaise directly with TfGM's bus infrastructure team who can be contacted via Shelters@tfgm.com

I hope you find these comments useful in the pre-application process. Should you wish to discuss any matter further please do not hesitate to contact me.

Yours faithfully

Claire Smallman
Infrastructure Development Officer
Direct Line 0161 244 1733
Email claire.smallman@tfgm.com



Appendix B

Department for Transport [DfT] AADF Count Point Station (ref: 930683) Data



Crash Report

Area of Interest (AOI) Information

Area : 23,700.17 m²

May 23 2023 11:34:09 British Summer Time



Summary

Name	Count	Area(m²)	Length(m)
Crashes	3	N/A	N/A

Crashes

#	Carriageway_Hazards	Severity	Officer_Attended	Accident_DateTime	Year	Number_of_vehicles	Number_of_casualties	Easting
1	None	Slight	Police officer attended crash scene	September 13, 2017	2017	2	2	381512
2	None	Slight	No officer attended crash scene	February 25, 2020	2020	2	1	381121
3	None	Slight	Police officer attended crash scene	June 6, 2018	2018	2	1	381132

#	Northing	Highway_Authority	Road_Number	Weather_conditions	Road_Type	Road_surface	Speed_Limit	Light_conditions
1	408727	Bury	U0	Fine without high winds	Single carriageway	Dry	30	Daylight: regardless of presence of streetlights
2	408276	Bury	U0	Fine without high winds	Single carriageway	Dry	30	Daylight: regardless of presence of streetlights
3	408297	Bury	U0	Fine without high winds	Single carriageway	Dry	30	Daylight: regardless of presence of streetlights

#	Junction_detail	Pedestrian_Crossing	Involved_pedalcycle	Involved_Motorcycle	Pedestrian_casualty	Child_casualty	Pedal_cycleuser_casualty	Motorcycle_user_casualty
1	T or staggered junction	No physical crossing facility within 50 metres	0	0	0	0	0	0
2	T or staggered junction	No physical crossing facility within 50 metres	0	0	0	0	0	0
3	Not at or within 20 metres of junction	No physical crossing facility within 50 metres	0	0	0	0	0	0

#	Involved_car	Involved_goodsvehicle	Involved_Bus	Involved_young_driver	Local_Authority_District	Junction_control	Is_Provisional	Is_Amended	Web_Link	Count
1	1	0	0	0	Bury Metropolitan Borough	Give way or uncontrolled	No	No	https://www.crashmap.co.uk/reports/proreportservice?reportId=201706N035034	1
2	1	0	0	0	Bury Metropolitan Borough	Give way or uncontrolled	No	No	https://www.crashmap.co.uk/reports/proreportservice?reportId=202006N269149	1
3	1	0	0	0	Bury Metropolitan Borough	Not Applicable	No	No	https://www.crashmap.co.uk/reports/proreportservice?reportId=201806N244610	1

Report produced from CrashMap Pro



Appendix C

Crashmap Report

Road traffic statistics

[Traffic statistics](#) > [Manual count points](#) > 930683

Manual count points

Site number: 930683

Site details

Region	North West
Local authority	Bury
Road name	U
Road classification	'C' and Unclassified roads
Managed by	Local authority
Road type	Minor
Start junction	
End junction	
Link length	km (miles)
Easting, northing	380980, 408010
Latitude, longitude	53.56835118, -2.28866295

Location



Annual Average daily flow

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2009	Manual count	38	126	9929	83	1225	341	11704
2008	Manual count	31	61	9503	82	1247	356	11249
2007	Manual count	17	78	11153	106	1484	433	13254
2006	Manual count	13	82	10396	107	1227	391	12203
2005	Manual count	12	85	10268	101	1191	522	12167
2004	Manual count	22	55	8978	106	1094	472	10705

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2003	Manual count	39	78	10670	95	1140	522	12505

Download data

Data disclaimer

Traffic figures at the regional and national level are robust, and are reported as National Statistics. However, DfT's traffic estimates for individual road links and small areas are less robust, as they are not always based on up-to-date counts made at these locations. Where other more up-to-date sources of traffic data are available (e.g. from local highways authorities), this may provide a more accurate estimate of traffic at these locations.

It is the responsibility of the user to decide which data are most appropriate for their purpose, and if DfT road link level traffic estimates are used, to make a note of the limitations in any published material.

Quality flags in data downloads

DfT's road link level traffic estimates are calculated using a variety of methods, with some methods likely to produce more accurate estimates than others.

The data tables available to download here contain a column - **estimation_method** – showing the method used to estimate traffic for each location and year. Figures having an estimation method of “Counted” are likely to be more accurate than those marked as “Estimated”, and the latter should be used with caution.

Data	Description	Records	Download
Site details	Manual count point site 930683 details.	1	JSON CSV
Average annual daily flow	Number of vehicles that travel past the count point (in both directions) on an average day of the year.	7	JSON CSV
Average annual daily flow by direction	Number of vehicles that travel past the count point on an average day of the year, by direction of travel.	14	JSON CSV

Data	Description	Records	Download
Raw counts	Vehicle counts recorded at this count point.	168	JSON CSV

Road traffic

[Home](#)

[Regions](#)

[Local authorities](#)

[About](#)

[Data](#)

[Accessibility statement](#)

[API documentation](#)

Traffic statistics

[All transport statistics](#)

[Road accidents and safety](#)

[Road congestion and travel times](#)

[Road freight: domestic and international](#)

[Road network size and condition](#)

[Road traffic](#)

Contact

Road traffic statistics

Email

roadtraff.stats@dft.gov.uk

Public enquiries

020 7944 3095

Media enquiries: Newsdesk

(Monday to Friday, 8am to 7pm)

020 7944 3021



All content is available under the Open Government Licence v3.0,
except where otherwise stated

© Crown copyright



Appendix D

Manual Speed Survey Results



SANDERSON ASSOCIATES (CONSULTING ENGINEERS) LTD
Sanderson House, Jubilee Way, Huddersfield, WF4 4TD

Tel: 01924 844080
Fax: 01924 844081

SPEED SURVEY

Location Croft Lane, Unsworth, Bury

Direction of Travel Northbound

Direction of Visibility South

Project Number 152508

Date of Survey 24/05/23

Start Time 09:04

Finish Time 09:29

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	3	51		76	
2		27	11	52		77	
3		28	12	53		78	
4		29	15	54		79	
5		30	11	55		80	
6		31	12	56		81	
7		32	2	57		82	
8		33	6	58		83	
9		34	5	59		84	
10		35	5	60		85	
11		36	4	61		86	
12		37	2	62		87	
13		38	3	63		88	
14		39	1	64		89	
15		40		65		90	
16		41		66		91	
17		42		67		92	
18		43	2	68		93	
19		44	1	69		94	
20		45		70		95	
21		46		71		96	
22	1	47		72		97	
23	1	48	1	73		98	
24	1	49		74		99	
25	1	50		75		100	

Number of Readings = 100

Dual C'way Y/N? N

Mean Speed = 30.98

Single C'way Y/N? Y

Standard Deviation = 4.4266867

Wet Road Surface Y/N? N

85th %ile Speed = 35.570474

85th %ile Wet Weather Speed = 33.085474 <<<<

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with <<<<.



SANDERSON ASSOCIATES (CONSULTING ENGINEERS) LTD
Sanderson House, Jubilee Way, Huddersfield, WF4 4TD

Tel: 01924 844080
Fax: 01924 844081

SPEED SURVEY

Location Croft Lane, Unsworth, Bury

Direction of Travel Southbound

Direction of Visibility North

Project Number 152508

Date of Survey 24.05.23

Start Time 09:30

Finish Time 09:52

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	10	51		76	
2		27	6	52		77	
3		28	7	53		78	
4		29	9	54		79	
5		30	9	55		80	
6		31	11	56		81	
7		32	7	57		82	
8		33	8	58		83	
9		34	9	59		84	
10		35	3	60		85	
11		36	3	61		86	
12		37	1	62		87	
13		38	2	63		88	
14		39	1	64		89	
15		40		65		90	
16		41		66		91	
17		42	1	67		92	
18		43		68		93	
19	1	44		69		94	
20	2	45		70		95	
21		46		71		96	
22	1	47		72		97	
23	3	48		73		98	
24	5	49		74		99	
25	1	50		75		100	

Number of Readings = 100

Dual C'way Y/N? N

Mean Speed = 29.86

Single C'way Y/N? Y

Standard Deviation = 4.2947466

Wet Road Surface Y/N? N

85th %ile Speed = 34.313652

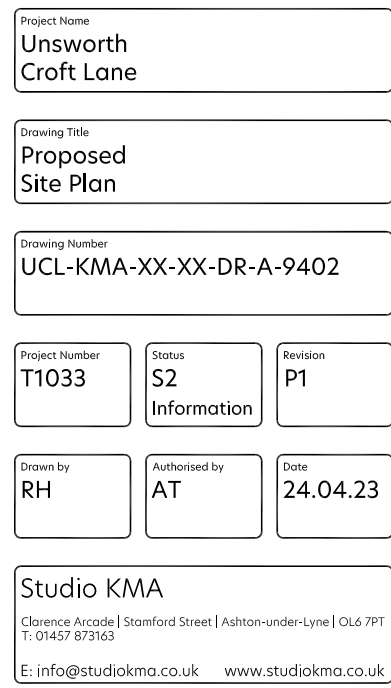
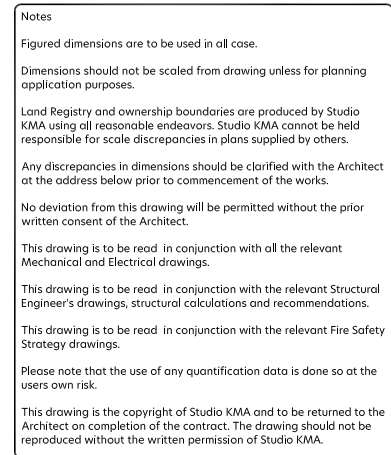
85th %ile Wet Weather Speed = 31.828652 <<<<

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with <<<<.



Appendix E

Site Layout Plans

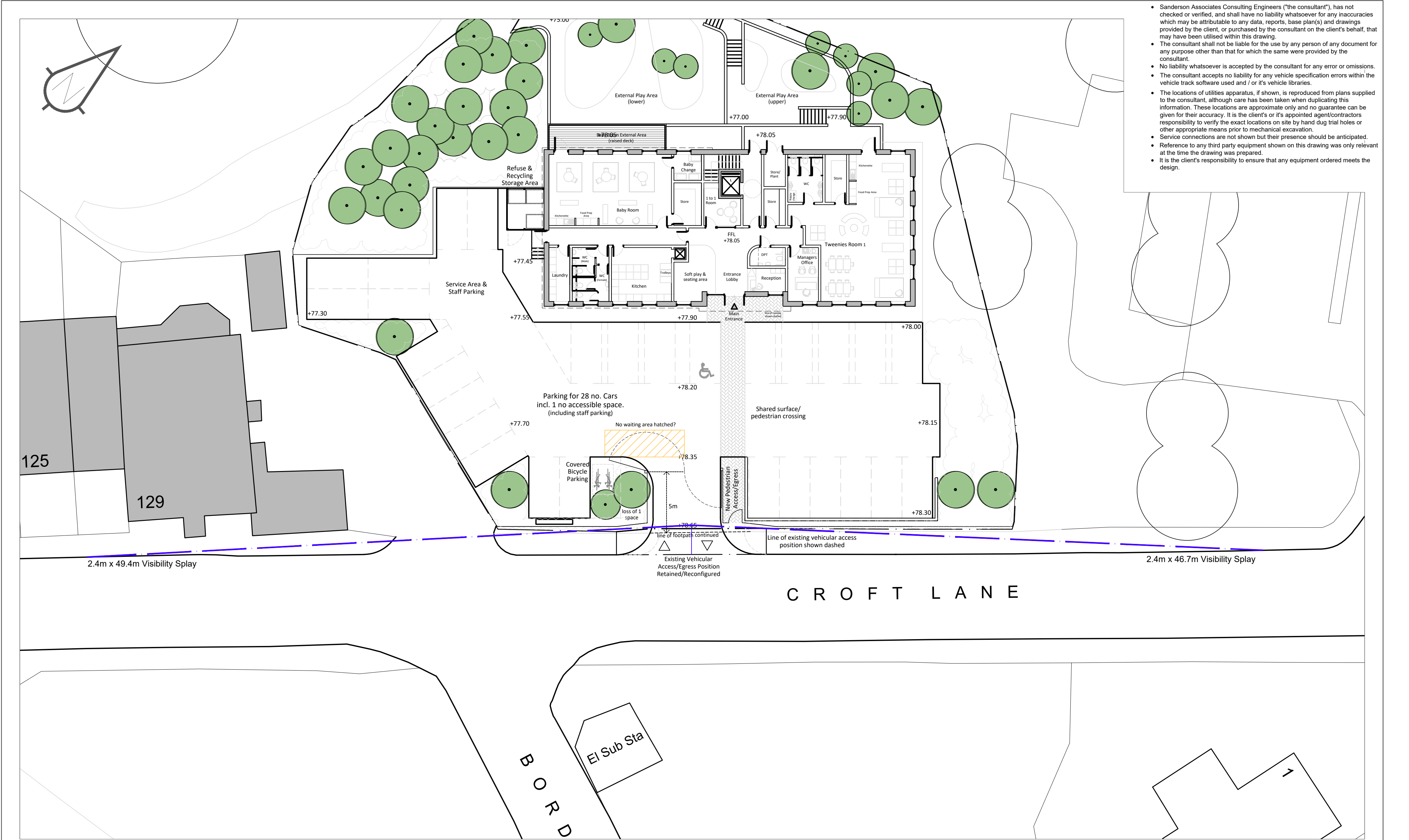




Appendix F

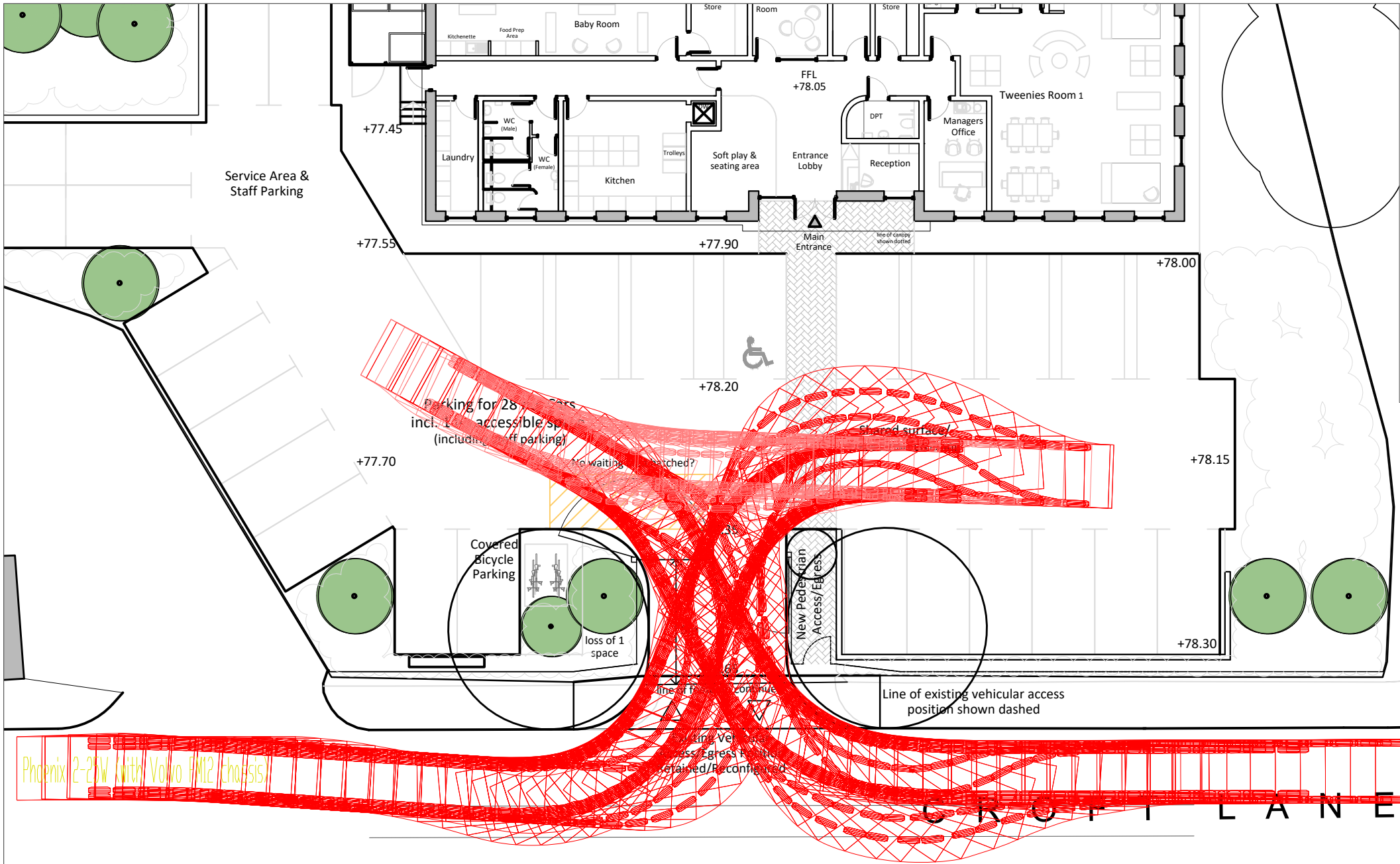
Drawing 152508-001 Visibility Splays

Drawing 152508-002 Refuse Vehicle Swept Paths

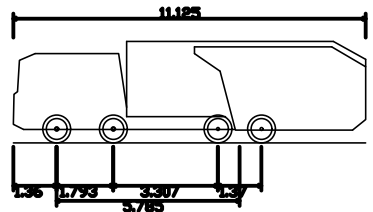


- Sanderson Associates Consulting Engineers ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plan(s) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or it's vehicle libraries.
- The locations of utilities apparatus, if shown, is reproduced from plans supplied to the consultant, although care has been taken when duplicating this information. These locations are approximate only and no guarantee can be given for their accuracy. It is the client's or it's appointed agent/contractors responsibility to verify the exact locations on site by hand dug trial holes or other appropriate means prior to mechanical excavation.
- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
- It is the client's responsibility to ensure that any equipment ordered meets the design.

Sa sanderson associates consulting engineers Highways Traffic Transportation Water T 01924 844080 mail@sandersonassociates.co.uk F 01924 844081 www.sandersonassociates.co.uk	Client	Tiddlywinks Day Nursery Limtied	Project Title	Proposed Nursery School Croft Lane, Unsworth, Bury	Drawing Title	Required Visibility Splays						Scale 1:200	Drawn By LY	
												Drawing Size A2	Checked By IEL	
												Date June 2023	Approved By IEL	
												Drawing Number		Rev
												152508-001		



- Sanderson Associates Consulting Engineers ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plan(s) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or it's vehicle libraries.
- The locations of utilities apparatus, if shown, is reproduced from plans supplied to the consultant, although care has been taken when duplicating this information. These locations are approximate only and no guarantee can be given for their accuracy. It is the client's or it's appointed agent/contractors responsibility to verify the exact locations on site by hand dug trial holes or other appropriate means prior to mechanical excavation.
- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
- It is the client's responsibility to ensure that any equipment ordered meets the design.



Phoenix 2-25W (with Volvo FM12 chassis)
Overall Length 11.125m
Overall Width 2.530m
Overall Body Height 3.205m
Min Body Ground Clearance 0.410m
Track Width 2.500m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 9.250m

Sa

sanderson
associates
consulting engineers

Highways | Traffic | Transportation | Water

T 01924 844080 mail@sandersonassociates.co.uk
F 01924 844081 www.sandersonassociates.co.uk

Proposed Nursery School,
Croft Lane,
Unsworth, Bury

Swept Path Analysis
of 11.125m Refuse Vechile
Entering & Egressing Site

Rev	Amendment	Drawn	Date	Checked

Scale 1:200	Drawn By LY
Drawing Size A3	Checked By IEL
Date June 2023	Approved By IEL
Drawing Number 152508-002	Rev



Appendix G

Site Visit Photos

Photo 1 – Tactile Paving and Dropped Kerbs at Hollins Brow/ Manchester Road Junction



Photo 2 – Informal Pedestrian Crossing, 55m north of the mini roundabout



Photo 3 – Signalised Pedestrian Crossing, 350m south of the site.



Photo 4 – Dropped Kerbs across Ainwick Drive



Photo 5 – Manchester Road Signalised Pedestrian Crossing



Photo 6 - Unlevelled Surfaces due to Recent Road Improvement Works



Photo 7 - Unlevelled Surfaces due to Recent Road Improvement Works



Photo 8 - Unlevelled Surfaces due to Recent Road Improvement Works



Photo 9 – Roch Valley Greenway



Photo 10 – Vehicles Parking on the Kerb on Hollins Lane



Photo 11 – Cycleway Time Restrictions



Photo 12 – Vehicles Parking in Cyclepath



Photo 13 – Roch Valley Greenway Bridge



Photo 14 – Cyclist Only Access Point

[© Google Street View]



Appendix H

Diagram 1 – Accessibility Audit





Appendix I

TRICS Output Reports

Calculation Reference: AUDIT-109307-230608-0647

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION

Category : D - NURSERY

MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	KC KENT	1 days
05	EAST MIDLANDS	
	NN NORTH NORTHAMPTONSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	SY SOUTH YORKSHIRE	1 days
09	NORTH	
	TW TYNE & WEAR	2 days
11	SCOTLAND	
	HI HIGHLAND	1 days

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

Primary Filtering selection:

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

Parameter: Number of pupils
 Actual Range: 90 to 138 (units:)
 Range Selected by User: 65 to 138 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/06 to 07/06/22

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

Selected survey days:

Tuesday	2 days
Wednesday	2 days
Friday	2 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6
------------------------------------	---

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

Selected Location Sub Categories:

Residential Zone	5
No Sub Category	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	3 days - Selected
Servicing vehicles Excluded	3 days - Selected

Secondary Filtering selection:

Use Class:

E(f) 6 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

10,001 to 15,000	2 days
15,001 to 20,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:

25,001 to 50,000	2 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	2 days
2.1 to 2.5	1 days

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

Travel Plan:

No 6 days

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

PTAL Rating:

No PTAL Present 6 days

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

LIST OF SITES relevant to selection parameters

1	HI-04-D-01	NURSERY		HIGHLAND
	STRATHERRICK ROAD			
	INVERNESS			
	UPPER DRUMMOND			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of pupils:	138		
	Survey date: FRIDAY	26/05/06	Survey Type: MANUAL	
2	KC-04-D-01	NURSERY		KENT
	PEMBURY ROAD			
	TONBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:	124		
	Survey date: WEDNESDAY	09/12/09	Survey Type: MANUAL	
3	NN-04-D-01	NURSERY		NORTH NORTHAMPTONSHIRE
	ROCKINGHAM ROAD			
	KETTERING			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:	90		
	Survey date: TUESDAY	07/06/22	Survey Type: MANUAL	
4	SY-04-D-01	NURSERY		SOUTH YORKSHIRE
	BAWTRY ROAD			
	DONCASTER			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:	111		
	Survey date: FRIDAY	13/05/22	Survey Type: MANUAL	
5	TW-04-D-02	NURSERY		TYNE & WEAR
	ETTRICK GROVE			
	SUNDERLAND			
	HIGH BARNES			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:	110		
	Survey date: WEDNESDAY	28/11/12	Survey Type: MANUAL	
6	TW-04-D-03	NURSERY		TYNE & WEAR
	JUBILEE ROAD			
	NEWCASTLE UPON TYNE			
	GOSFORTH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:	108		
	Survey date: TUESDAY	21/05/19	Survey Type: MANUAL	

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL TOTAL VEHICLES
 Calculation factor: 1
 Estimated TRIP rate value per 120 shown in shaded columns
 BOLD print indicates peak (busiest) period
 Total People to Total Vehicles ratio (all time periods and directions): 1.98

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.101	12.159	6	114	0.037	4.405	6	114	0.138	16.564
08:00 - 09:00	6	114	0.195	23.436	6	114	0.175	20.969	6	114	0.370	44.405
09:00 - 10:00	6	114	0.062	7.401	6	114	0.054	6.520	6	114	0.116	13.921
10:00 - 11:00	6	114	0.013	1.586	6	114	0.009	1.057	6	114	0.022	2.643
11:00 - 12:00	6	114	0.019	2.291	6	114	0.021	2.467	6	114	0.040	4.758
12:00 - 13:00	6	114	0.044	5.286	6	114	0.054	6.520	6	114	0.098	11.806
13:00 - 14:00	6	114	0.070	8.458	6	114	0.081	9.692	6	114	0.151	18.150
14:00 - 15:00	6	114	0.021	2.467	6	114	0.029	3.524	6	114	0.050	5.991
15:00 - 16:00	6	114	0.056	6.696	6	114	0.048	5.815	6	114	0.104	12.511
16:00 - 17:00	6	114	0.084	10.044	6	114	0.095	11.454	6	114	0.179	21.498
17:00 - 18:00	6	114	0.132	15.859	6	114	0.169	20.264	6	114	0.301	36.123
18:00 - 19:00	6	114	0.007	0.881	6	114	0.032	3.877	6	114	0.039	4.758
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.804	96.564			0.804	96.564			1.608	193.128

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

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

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:
 Survey date date range:
 Number of weekdays (Monday-Friday):
 Number of Saturdays:
 Number of Sundays:
 Surveys automatically removed from selection:
 Surveys manually removed from selection:

90 - 138 (units:)
 01/01/06 - 07/06/22
 6
 0
 0
 0
 0

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL TAXIS
Calculation factor: 1
Estimated TRIP rate value per 120 shown in shaded columns
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.001	0.176	6	114	0.001	0.176	6	114	0.002	0.352
08:00 - 09:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
09:00 - 10:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
10:00 - 11:00	6	114	0.001	0.176	6	114	0.001	0.176	6	114	0.002	0.352
11:00 - 12:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
12:00 - 13:00	6	114	0.004	0.529	6	114	0.004	0.529	6	114	0.008	1.058
13:00 - 14:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
14:00 - 15:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
15:00 - 16:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
16:00 - 17:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
17:00 - 18:00	6	114	0.001	0.176	6	114	0.001	0.176	6	114	0.002	0.352
18:00 - 19:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.007	1.057			0.007	1.057			0.014	2.114

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL CYCLISTS
 Calculation factor: 1
 Estimated TRIP rate value per 120 shown in shaded columns
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.006	0.705	6	114	0.000	0.000	6	114	0.006	0.705
08:00 - 09:00	6	114	0.003	0.352	6	114	0.000	0.000	6	114	0.003	0.352
09:00 - 10:00	6	114	0.001	0.176	6	114	0.001	0.176	6	114	0.002	0.352
10:00 - 11:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
11:00 - 12:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
12:00 - 13:00	6	114	0.003	0.352	6	114	0.001	0.176	6	114	0.004	0.528
13:00 - 14:00	6	114	0.003	0.352	6	114	0.006	0.705	6	114	0.009	1.057
14:00 - 15:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
15:00 - 16:00	6	114	0.000	0.000	6	114	0.003	0.352	6	114	0.003	0.352
16:00 - 17:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
17:00 - 18:00	6	114	0.000	0.000	6	114	0.003	0.352	6	114	0.003	0.352
18:00 - 19:00	6	114	0.000	0.000	6	114	0.000	0.000	6	114	0.000	0.000
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.016	1.937			0.014	1.761			0.030	3.698

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
 MULTI-MODAL VEHICLE OCCUPANTS
 Calculation factor: 1
 Estimated TRIP rate value per 120 shown in shaded columns
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.157	18.855	6	114	0.041	4.934	6	114	0.198	23.789
08:00 - 09:00	6	114	0.310	37.181	6	114	0.140	16.740	6	114	0.450	53.921
09:00 - 10:00	6	114	0.087	10.396	6	114	0.046	5.463	6	114	0.133	15.859
10:00 - 11:00	6	114	0.018	2.115	6	114	0.009	1.057	6	114	0.027	3.172
11:00 - 12:00	6	114	0.023	2.819	6	114	0.029	3.524	6	114	0.052	6.343
12:00 - 13:00	6	114	0.068	8.106	6	114	0.076	9.163	6	114	0.144	17.269
13:00 - 14:00	6	114	0.084	10.044	6	114	0.113	13.568	6	114	0.197	23.612
14:00 - 15:00	6	114	0.031	3.700	6	114	0.043	5.110	6	114	0.074	8.810
15:00 - 16:00	6	114	0.073	8.811	6	114	0.066	7.930	6	114	0.139	16.741
16:00 - 17:00	6	114	0.068	8.106	6	114	0.148	17.797	6	114	0.216	25.903
17:00 - 18:00	6	114	0.098	11.806	6	114	0.275	32.952	6	114	0.373	44.758
18:00 - 19:00	6	114	0.009	1.057	6	114	0.046	5.463	6	114	0.055	6.520
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			1.026	122.996			1.032	123.701			2.058	246.697

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL PEDESTRIANS
 Calculation factor: 1
 Estimated TRIP rate value per 120 shown in shaded columns
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.085	10.220	6	114	0.026	3.172	6	114	0.111	13.392
08:00 - 09:00	6	114	0.066	7.930	6	114	0.023	2.819	6	114	0.089	10.749
09:00 - 10:00	6	114	0.015	1.762	6	114	0.004	0.529	6	114	0.019	2.291
10:00 - 11:00	6	114	0.010	1.233	6	114	0.007	0.881	6	114	0.017	2.114
11:00 - 12:00	6	114	0.031	3.700	6	114	0.041	4.934	6	114	0.072	8.634
12:00 - 13:00	6	114	0.069	8.282	6	114	0.079	9.515	6	114	0.148	17.797
13:00 - 14:00	6	114	0.051	6.167	6	114	0.048	5.815	6	114	0.099	11.982
14:00 - 15:00	6	114	0.015	1.762	6	114	0.016	1.938	6	114	0.031	3.700
15:00 - 16:00	6	114	0.028	3.348	6	114	0.034	4.053	6	114	0.062	7.401
16:00 - 17:00	6	114	0.048	5.815	6	114	0.066	7.930	6	114	0.114	13.745
17:00 - 18:00	6	114	0.053	6.344	6	114	0.093	11.101	6	114	0.146	17.445
18:00 - 19:00	6	114	0.003	0.352	6	114	0.043	5.110	6	114	0.046	5.462
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.474	56.915			0.480	57.797			0.954	114.712

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

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

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield

Licence No: 109307

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1

Estimated TRIP rate value per 120 shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.025	2.996	6	114	0.001	0.176	6	114	0.026	3.172
08:00 - 09:00	6	114	0.012	1.410	6	114	0.003	0.352	6	114	0.015	1.762
09:00 - 10:00	6	114	0.010	1.233	6	114	0.001	0.176	6	114	0.011	1.409
10:00 - 11:00	6	114	0.001	0.176	6	114	0.000	0.000	6	114	0.001	0.176
11:00 - 12:00	6	114	0.000	0.000	6	114	0.009	1.057	6	114	0.009	1.057
12:00 - 13:00	6	114	0.012	1.410	6	114	0.016	1.938	6	114	0.028	3.348
13:00 - 14:00	6	114	0.001	0.176	6	114	0.006	0.705	6	114	0.007	0.881
14:00 - 15:00	6	114	0.003	0.352	6	114	0.001	0.176	6	114	0.004	0.528
15:00 - 16:00	6	114	0.001	0.176	6	114	0.009	1.057	6	114	0.010	1.233
16:00 - 17:00	6	114	0.001	0.176	6	114	0.003	0.352	6	114	0.004	0.528
17:00 - 18:00	6	114	0.004	0.529	6	114	0.003	0.352	6	114	0.007	0.881
18:00 - 19:00	6	114	0.000	0.000	6	114	0.013	1.586	6	114	0.013	1.586
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.070	8.634			0.065	7.927			0.135	16.561

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL TOTAL PEOPLE
 Calculation factor: 1
 Estimated TRIP rate value per 120 shown in shaded columns
 BOLD print indicates peak (busiest) period
 Total People to Total Vehicles ratio (all time periods and directions): 1.98

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate	No. Days	Ave. PUPILS	Trip Rate	Estimated Trip Rate
00:00 - 01:00												
01:00 - 02:00												
02:00 - 03:00												
03:00 - 04:00												
04:00 - 05:00												
05:00 - 06:00												
06:00 - 07:00												
07:00 - 08:00	6	114	0.273	32.775	6	114	0.069	8.282	6	114	0.342	41.057
08:00 - 09:00	6	114	0.391	46.872	6	114	0.166	19.912	6	114	0.557	66.784
09:00 - 10:00	6	114	0.113	13.568	6	114	0.053	6.344	6	114	0.166	19.912
10:00 - 11:00	6	114	0.029	3.524	6	114	0.016	1.938	6	114	0.045	5.462
11:00 - 12:00	6	114	0.054	6.520	6	114	0.079	9.515	6	114	0.133	16.035
12:00 - 13:00	6	114	0.151	18.150	6	114	0.173	20.793	6	114	0.324	38.943
13:00 - 14:00	6	114	0.140	16.740	6	114	0.173	20.793	6	114	0.313	37.533
14:00 - 15:00	6	114	0.048	5.815	6	114	0.060	7.225	6	114	0.108	13.040
15:00 - 16:00	6	114	0.103	12.335	6	114	0.112	13.392	6	114	0.215	25.727
16:00 - 17:00	6	114	0.117	14.097	6	114	0.217	26.079	6	114	0.334	40.176
17:00 - 18:00	6	114	0.156	18.678	6	114	0.373	44.758	6	114	0.529	63.436
18:00 - 19:00	6	114	0.012	1.410	6	114	0.101	12.159	6	114	0.113	13.569
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			1.587	190.484			1.592	191.190			3.179	381.674

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

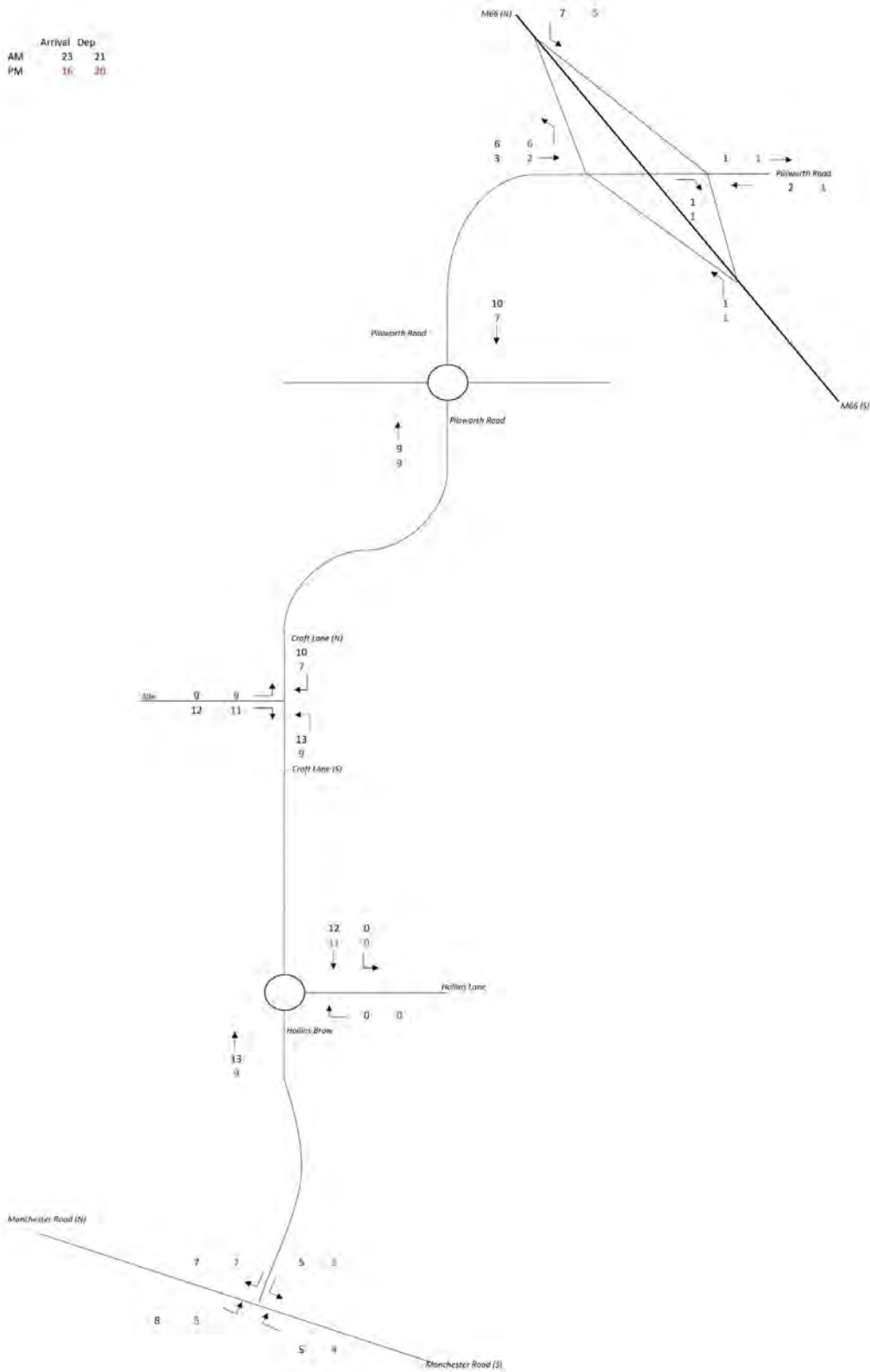
*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



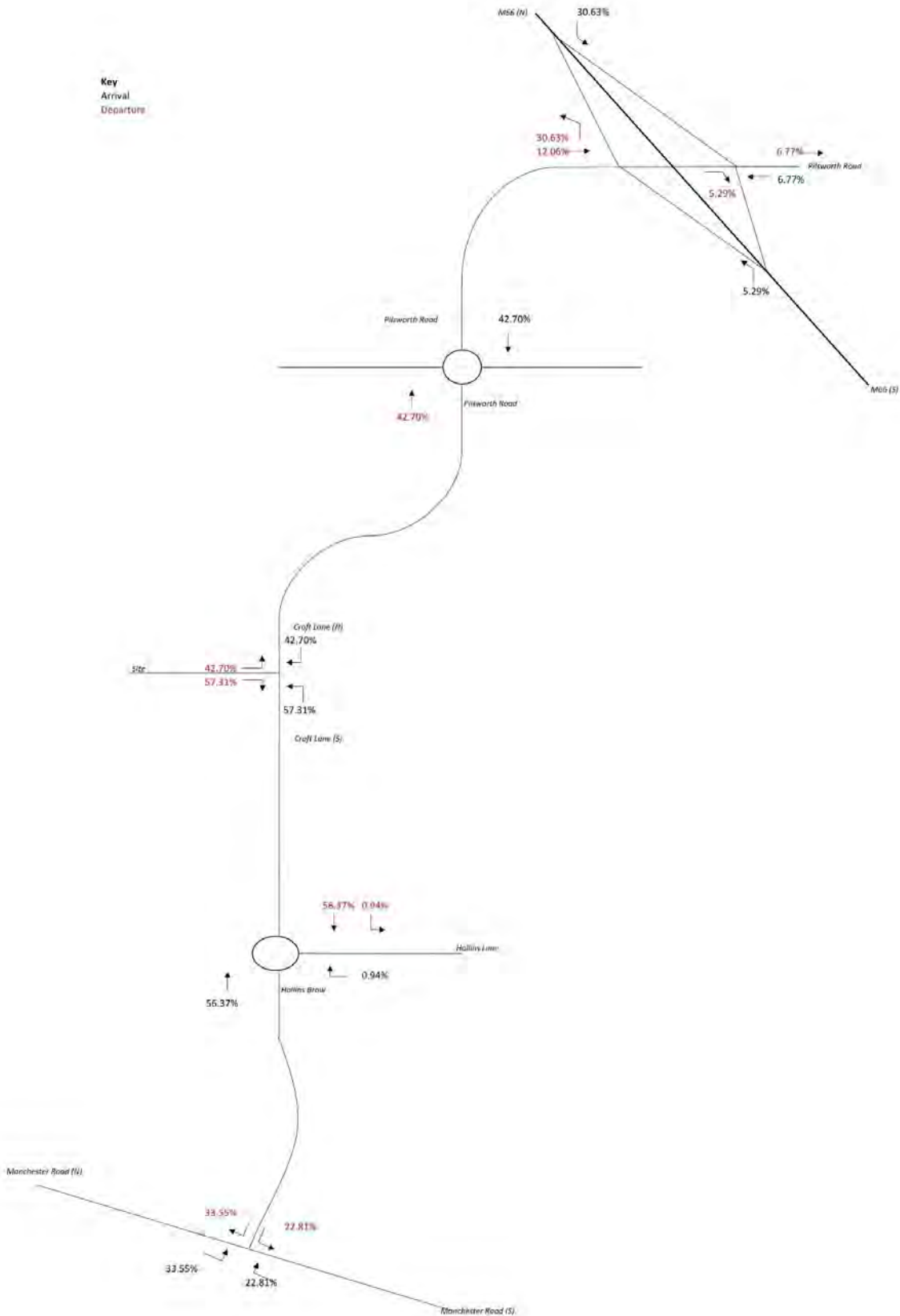
Appendix J

Development Flows

	Arrival	Dep.
AM	23	21
PM	16	20



Key
Arrival
Departure





Appendix K

'Junctions 9' Modelling Output Report

Junctions 9			
PICADY 9 - Priority Intersection Module			
Version: 9.5.1.7462			
© Copyright TRL Limited, 2019			
For sales and distribution information, program advice and maintenance, contact TRL:			
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk			
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution			

Filename: Croft Lane - Site Access.j9

Path: V:\152000\152508F_Croft_Lane_Unsworth\07 Design and other outputs\Traffic programs\Junctions

Report generation date: 16/06/2023 15:01:06

»Croft Lane - Site Access - 2023 Base + Dev, AM

»Croft Lane - Site Access - 2028 Base + Dev, AM

Summary of junction performance

	AM			
	Set ID	Queue (Veh)	Delay (s)	RFC
	Croft Lane - Site Access - 2023 Base + Dev			
Stream B-AC	D4	0.1	15.73	0.09
Stream C-AB		0.1	4.90	0.04
	Croft Lane - Site Access - 2028 Base + Dev			
Stream B-AC	D5	0.1	16.55	0.10
Stream C-AB		0.1	4.85	0.05

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

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

File summary

File Description

Title	Croft Lane - Site Access
Location	Unsworth, Bury
Site number	
Date	16/06/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	FAIRHURST\ashley.armitage
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2023 Base	AM	ONE HOUR	07:45	09:15	15			
D2	2028 Base	AM	ONE HOUR	07:45	09:15	15		Simple	D1*1.0377
D3	Development	AM	ONE HOUR	07:45	09:15	15			
D4	2023 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1+D3
D5	2028 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D2+D3

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Croft Lane - Site Access	✓	100.000	100.000

Croft Lane - Site Access - 2023 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2028 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Croft Lane (South)		Major
B	Site Access		Minor
C	Croft Lane (North)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.10			0.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	22	15

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	480	0.087	0.220	0.138	0.314
B-C	618	0.094	0.238	-	-
C-B	574	0.221	0.221	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2023 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1+D3

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	810	100.000
B		ONE HOUR	✓	21	100.000
C		ONE HOUR	✓	563	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	13	797
	B	12	0	9
	C	553	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A	B	C
	A	0	0	1
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.09	15.73	0.1	C	19	29
C-AB	0.04	4.90	0.1	A	26	40
C-A					490	735
A-B					12	18
A-C					731	1097

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	16	4	344	0.046	16	0.0	0.0	10.951	B
C-AB	17	4	752	0.022	17	0.0	0.0	4.894	A
C-A	407	102			407				
A-B	10	2			10				
A-C	600	150			600				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	19	5	306	0.062	19	0.0	0.1	12.523	B
C-AB	24	6	794	0.030	24	0.0	0.0	4.672	A
C-A	482	121			482				
A-B	12	3			12				
A-C	716	179			716				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	23	6	252	0.092	23	0.1	0.1	15.714	C
C-AB	38	10	856	0.045	38	0.0	0.1	4.399	A
C-A	582	145			582				
A-B	14	4			14				
A-C	878	219			878				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	23	6	252	0.092	23	0.1	0.1	15.733	C
C-AB	38	10	856	0.045	38	0.1	0.1	4.402	A
C-A	582	145			582				
A-B	14	4			14				
A-C	878	219			878				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	19	5	306	0.062	19	0.1	0.1	12.543	B
C-AB	24	6	794	0.030	24	0.1	0.0	4.679	A
C-A	482	120			482				
A-B	12	3			12				
A-C	716	179			716				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	16	4	344	0.046	16	0.1	0.0	10.967	B
C-AB	17	4	752	0.023	17	0.0	0.0	4.899	A
C-A	407	102			407				
A-B	10	2			10				
A-C	600	150			600				

Croft Lane - Site Access - 2028 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2028 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2028 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D2+D3

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	840	100.000
B		ONE HOUR	✓	21	100.000
C		ONE HOUR	✓	584	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	13	827
	B	12	0	9
	C	574	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	0
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	16.55	0.1	C	19	29
C-AB	0.05	4.85	0.1	A	28	42
C-A					508	762
A-B					12	18
A-C					759	1138

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	16	4	337	0.047	16	0.0	0.0	11.194	B
C-AB	17	4	760	0.023	17	0.0	0.0	4.845	A
C-A	422	106			422				
A-B	10	2			10				
A-C	623	156			623				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	19	5	297	0.063	19	0.0	0.1	12.920	B
C-AB	25	6	804	0.031	25	0.0	0.0	4.617	A
C-A	500	125			500				
A-B	12	3			12				
A-C	743	186			743				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	23	6	241	0.096	23	0.1	0.1	16.525	C
C-AB	40	10	870	0.046	40	0.0	0.1	4.339	A
C-A	602	151			602				
A-B	14	4			14				
A-C	911	228			911				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	23	6	241	0.096	23	0.1	0.1	16.549	C
C-AB	40	10	870	0.047	40	0.1	0.1	4.343	A
C-A	602	151			602				
A-B	14	4			14				
A-C	911	228			911				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	19	5	297	0.063	19	0.1	0.1	12.939	B
C-AB	25	6	805	0.031	25	0.1	0.0	4.624	A
C-A	500	125			500				
A-B	12	3			12				
A-C	743	186			743				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	16	4	337	0.047	16	0.1	0.0	11.216	B
C-AB	18	4	760	0.023	18	0.0	0.0	4.850	A
C-A	422	106			422				
A-B	10	2			10				
A-C	623	156			623				



FAIRHURST



Sanderson House, Jubilee Way, Grange Moor,
Huddersfield, WF4 4TD



01924 844080



mail@sandersonassociates.co.uk



www.sandersonassociates.co.uk

CIVIL ENGINEERING • STRUCTURAL ENGINEERING • TRANSPORTATION • ROADS & BRIDGES
PORTS & HARBOURS • GEOTECHNICAL & ENVIRONMENTAL ENGINEERING • PLANNING &
DEVELOPMENT • WATER SERVICES • HEALTH & SAFETY / CDM SERVICES



Sanderson Associates Consulting Engineers is a trading name of Fairhurst Group LLP, a limited liability partnership.
Registered Office: 43 George Street, Edinburgh, EH2 2HT | Registered No: SO307306 | VAT No. 259 9411 23