TOWN & COUNTRY PLANNING ACT 1990: SECTION 78

APPEAL BY ROBERT HITCHINS LTD

LAND AT OAKLEY FARM, CHELTENHAM

APPENDICES

PINS Ref: APP/B1605/W/21/3273053
LPA Ref: O20/01069/OUT

PROOF OF EVIDENCE OF
G EVES BSc CEng MICE MCIHT

AUGUST 2021

PFA Consulting
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engineering the future

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DOCUMENT CONTROL

Job No	H628		
File Reference	G:\workfiles\H628 OAKLEY FARM\REPORTS\H628-DOC05 PoE\H628-DOC05 PoE - APPENDICES.docx		
	Name	Date	Initials
Prepared By	G EVES	10 August 2021	
Checked By	G EVES	10 August 2021	

Issue	Date	Comments	Approved
Exchange		10 August 2021	
			G EVES

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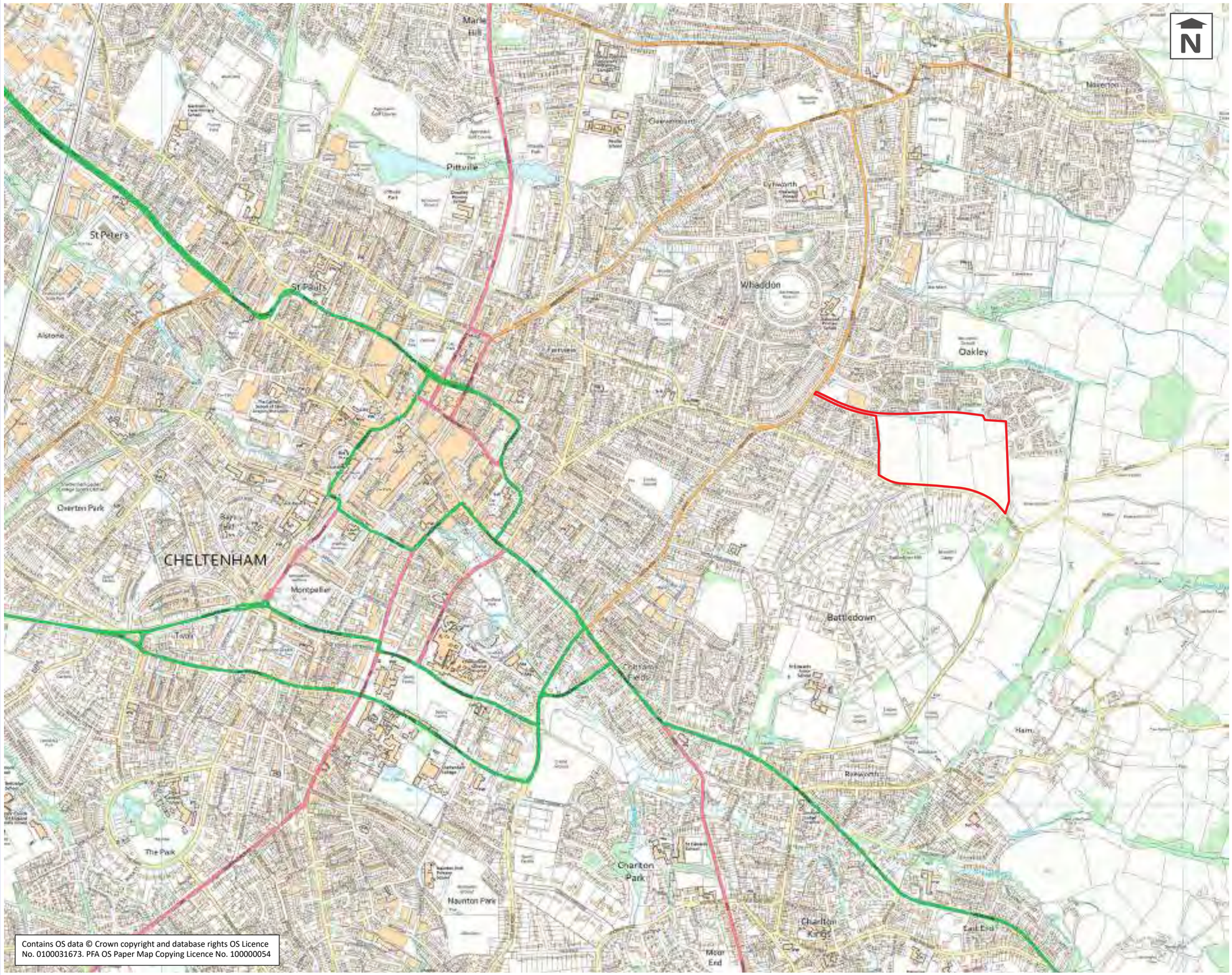
CONTENTS

APPENDICES

Appendices

Appendix 1



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Site Boundary (indicative only)

0 500m

Client

Robert Hitchins Ltd

Project

Land at Oakley Farm, Battledown, Cheltenham

Figure Title

Site Location

Figure No

Date	June 2021
Drawn By	GT
Checked By	JA
Scale	See Scale Bar
File Ref	P628/Figures/Appeal/SLP.ai
Doc Ref	P628 Appeal

Appendix 2

Connection to Prior's Road
see inset below

Open Space/Play Area

Open Space/Play Area

Open Space

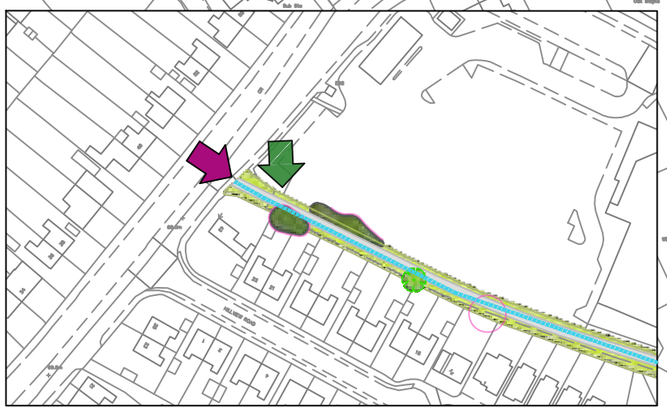
HARP HILL

Greenway House

The Oaks

N

Inset



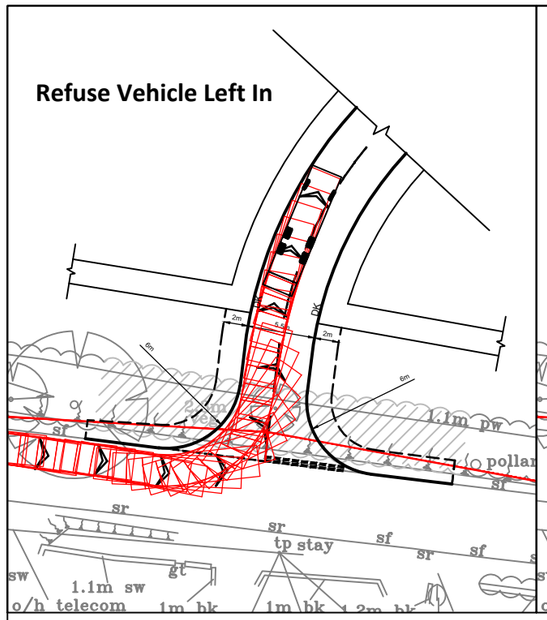
Key:

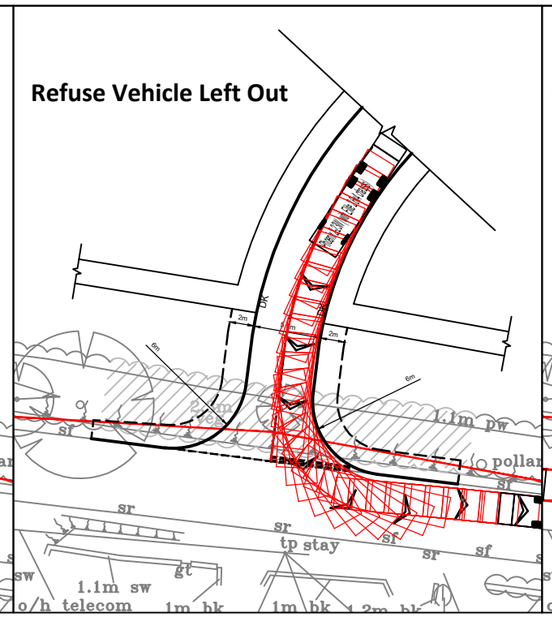
- Existing Public Right of Way
- Principal Access
- Pedestrian Access
- Possible Emergency Access
- Existing Trees Retained
- Existing Hedgerow Retained
- Proposed Trees
- Proposed New Native Hedgerows
- Residential
- Garages
- Proposed Indicative Landscaped Drainage Pond
- Primary Street (with road narrowing to avoid Root protection Zones)
- Re-graded land with new tree planting
- Proposed Bound Gravel footpaths should be designed to minimise the section of hedgerow to be removed.
- Proposed 3m cycle link to Prior's Road
- Root Protection Areas

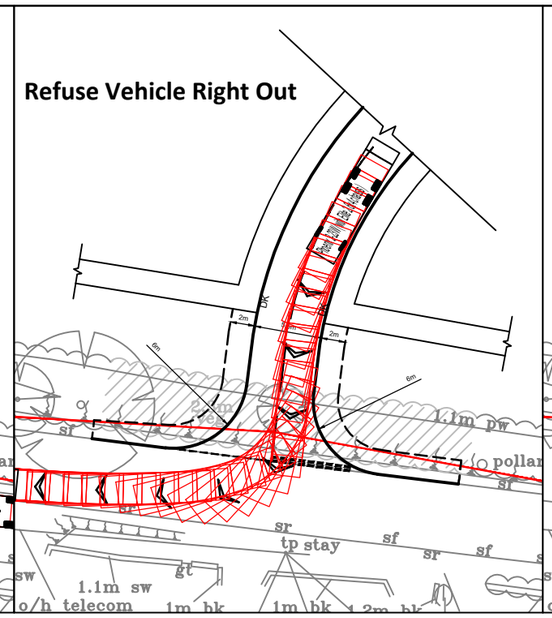
Site Name: Land at Oakley Farm	Drawing Number: 333.P.3.9		Revision: E
Drawing Title: Illustrative Masterplan	Drawn By: POK	Date: 01.08.2019	Scale: 1:2000@A3

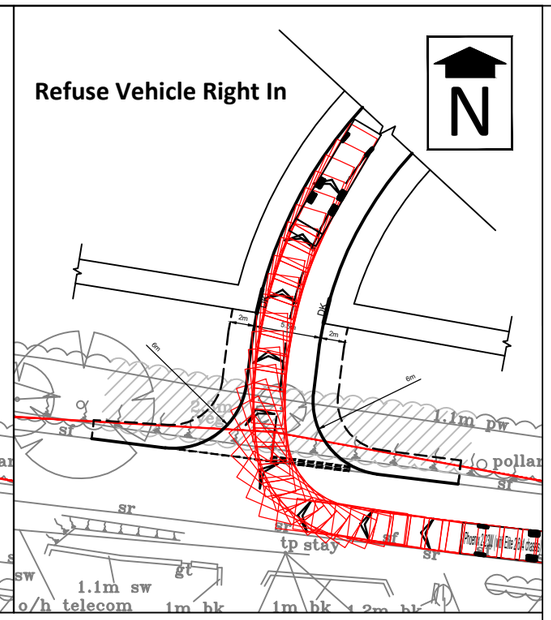
Robert Hitchins
The Complete Development Solution
The Manor, Boddington, Cheltenham, Gloucestershire, GL51 0TJ
Tel: 01242 680694
www.robert-hitchins.co.uk

Appendix 3

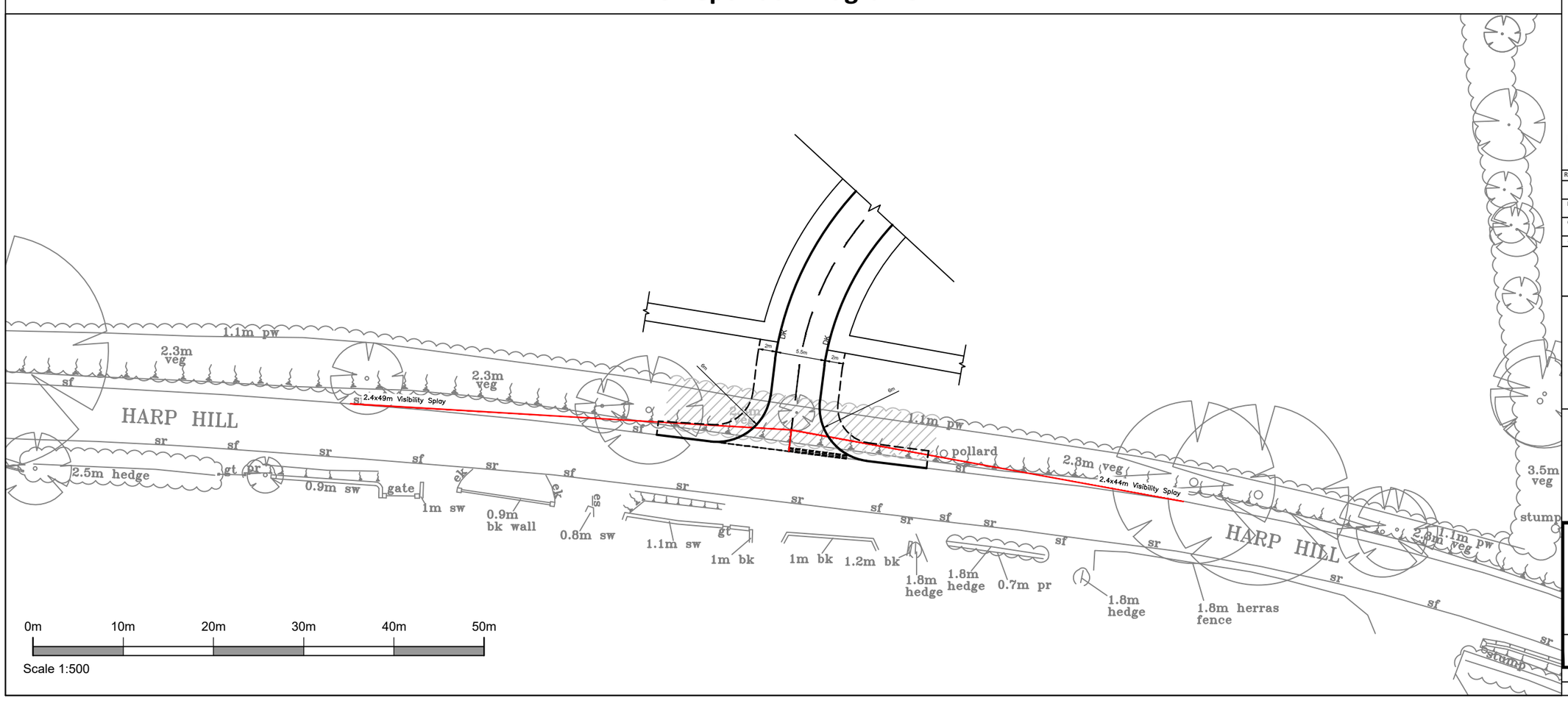








Swept Path Diagrams



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Preliminary
This drawing is produced for initial discussion and illustrative purposes only, and should not be relied upon for tender or pricing purposes.

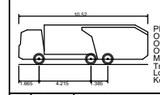
NOTES

1. Based on Topographical Survey undertaken by Ruxton Surveys shown in Drawings 18169/01–03 dated November 2018 and the Illustrative Masterplan produced by Robert Hitchins Ltd shown in drawing 333.P.3.9 dated August 2019.

2. Visibility Splays based on 85th %ile speeds recorded in September 2019.

KEY

- 2.4x49m/2.4x44m Visibility Splays
- Proposed Carriageway
- Proposed Footway/Footpath
- DK Dropped Kerb
- Proposed Service Margin



Phoenix 2-23W (with Elite 2 6x4 chassis)	
Overall Length	10.520m
Overall Width	2.530m
Overall Body Height	3.211m
Min Body Ground Clearance	0.416m
Track Width	2.530m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.950m

Rev	Date	Description	Drawn	Check
E	15/06/21	Access width reduced to 5.5m	TLH	JA
D	21/11/20	Access widened to 6.5m	TLH	JA
C	04/11/20	Junction dimensions and vehicle tracking added	TLH	JA
#	18/10/19	First Issue.	THP	ECS

Status
PRELIMINARY

Client
Robert Hitchins — The Complete Development Solution

Project
Land at Oakley Farm, Battledown, Cheltenham

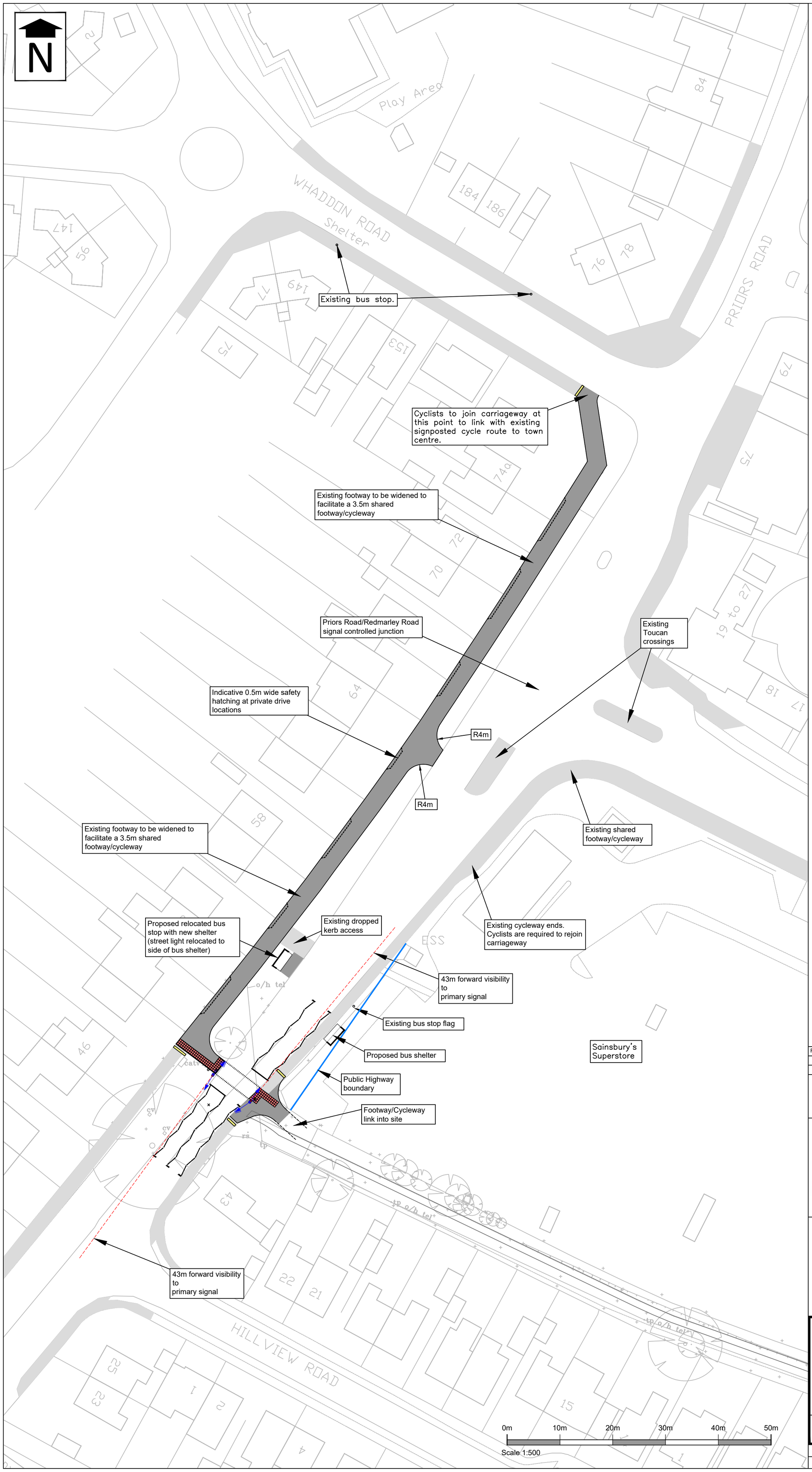
Drawing Title
Preliminary Access Arrangements

Drawing No.
H628/02 Rev E

Date: June 2021 | Scale: 1:500 @ A3

E-Mail: thillier@pfaplc.com

Appendix 4



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NOTES

1. Based on Topographical Survey undertaken by Ruxton Surveys shown in Drawings 18169/01–03 dated November 2018, supplemented by Detail OS Mapping.

2. Site Layout based on Drawing Number 333.P.3.9 Rev E, by Robert Hitchins, dated 01/08/2019.

3. Footway/cycleway link to be constructed in accordance with the latest version of LTN 1/20.

4. Toucan Crossing to be designed in accordance with Traffic Signs Manual Chapter 6.

KEY

- Existing Footway / Cycleway
- Proposed Footway / Cycleway
- Corduroy Paving
- Tactile Paving
- Traffic Signal

Rev	Date	Description	Drawn	Check
#	24/06/21	First Issue.	TLH	JA
A	13/07/21	Bus shelters added and further amendments	TLH	PK

Status

FOR INFORMATION

Client

RobertHitchins
The Complete Development Solution

Project

Land at Oakley Farm, Battledown, Cheltenham

Drawing Title

B4075 Priors Road Pedestrian/Cycle Linkages

Drawing No. **H628/08** Rev A

Date: Month Year | Scale: 1:500 @ A2

E-Mail: thillier@pfaplc.com

Appendix 5

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Preliminary
This drawing is produced for initial discussion and illustrative purposes only, and should not be relied upon for tender or pricing purposes.

NOTES

1. Based on Topographical Survey undertaken by Ruxton Surveys shown in Drawings 18169/01–03 dated November 2018 and the Illustrative Masterplan produced by Robert Hitchins Ltd shown in drawing 333.P.3.9 dated August 2019.

2. Visibility Splays based on 85th %ile speeds recorded in September 2019.

KEY

- Visibility Splays
- DK — Dropped Kerb
- Extent of Public Highway
- Existing Footway
- Proposed Footway

Rev	Date	Description	Drawn	Check
A	26.02.20	Illustrative Masterplan Base Updated, Drawing Status and Project Title Changed.	RH	ECS
#	18.02.20	First Issue.	RH	ECS

Status

PRELIMINARY

Client

Robert Hitchins
The Complete Development Solution

Project

Land at Oakley Farm, Battledown, Cheltenham

Drawing Title

Harp Hill Pedestrian Linkages

Drawing No. **H628/05** Rev A

Date: February 2020 | Scale: 1:500 @ A2

E-Mail: espencer@pfaplc.com

Appendix 6

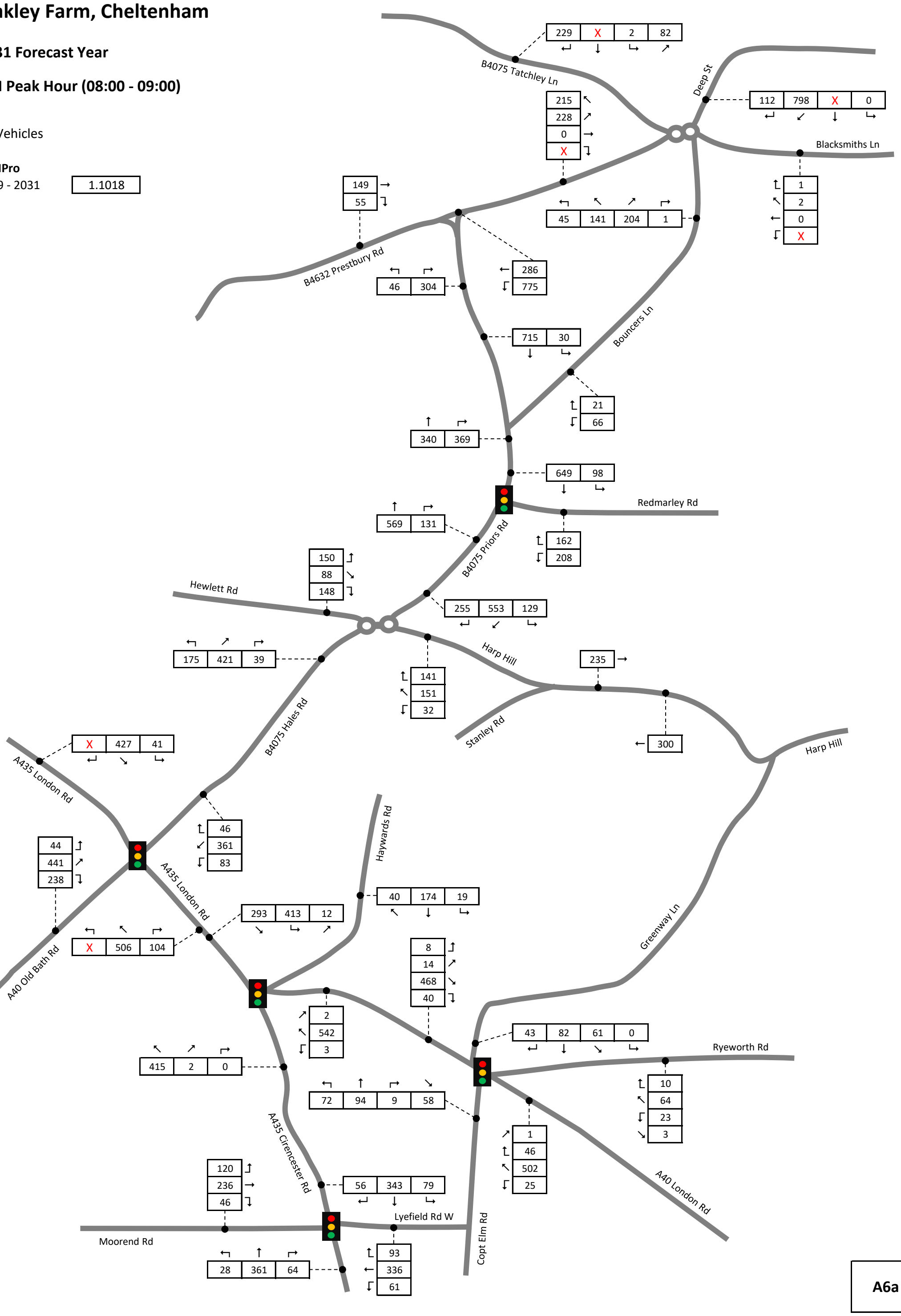
Oakley Farm, Cheltenham

2031 Forecast Year

AM Peak Hour (08:00 - 09:00)

All Vehicles

TEMPro
2019 - 2031 | 1.1018



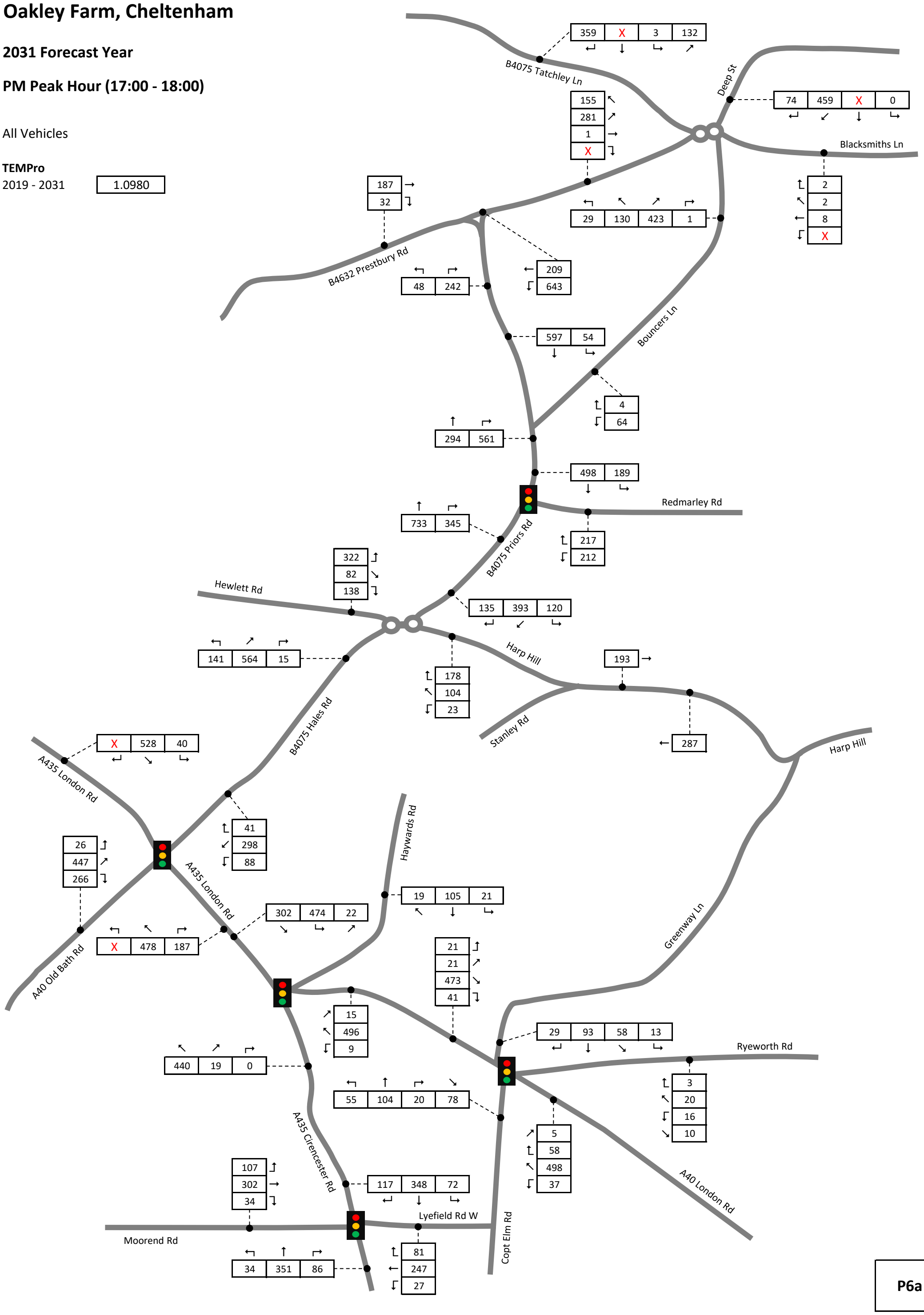
Oakley Farm, Cheltenham

2031 Forecast Year

PM Peak Hour (17:00 - 18:00)

All Vehicles

TEMPro
2019 - 2031 | 1.0980



P6a

Oakley Farm, Cheltenham

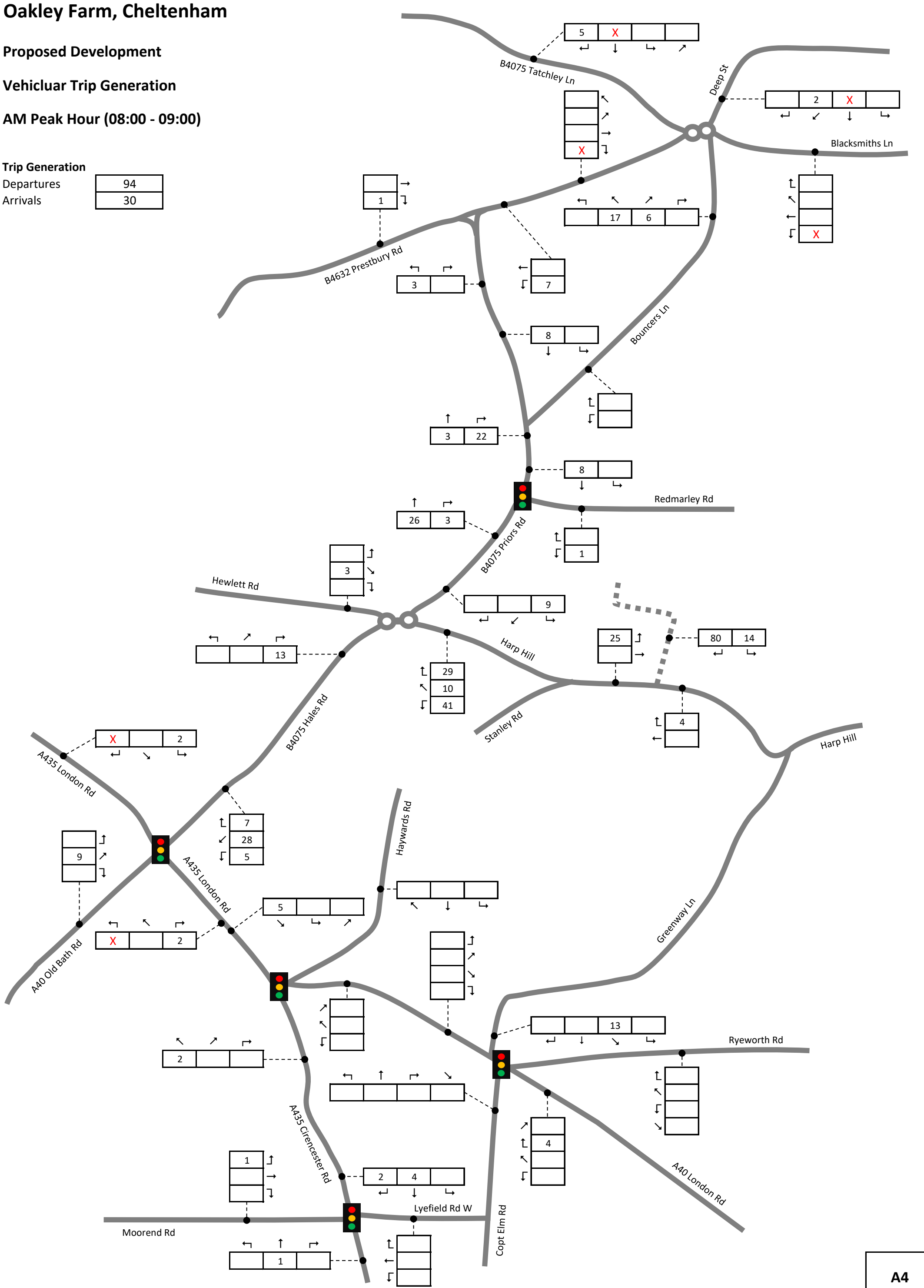
Proposed Development

Vehicluar Trip Generation

AM Peak Hour (08:00 - 09:00)

Trip Generation

Departures	94
Arrivals	30



A4

Oakley Farm, Cheltenham

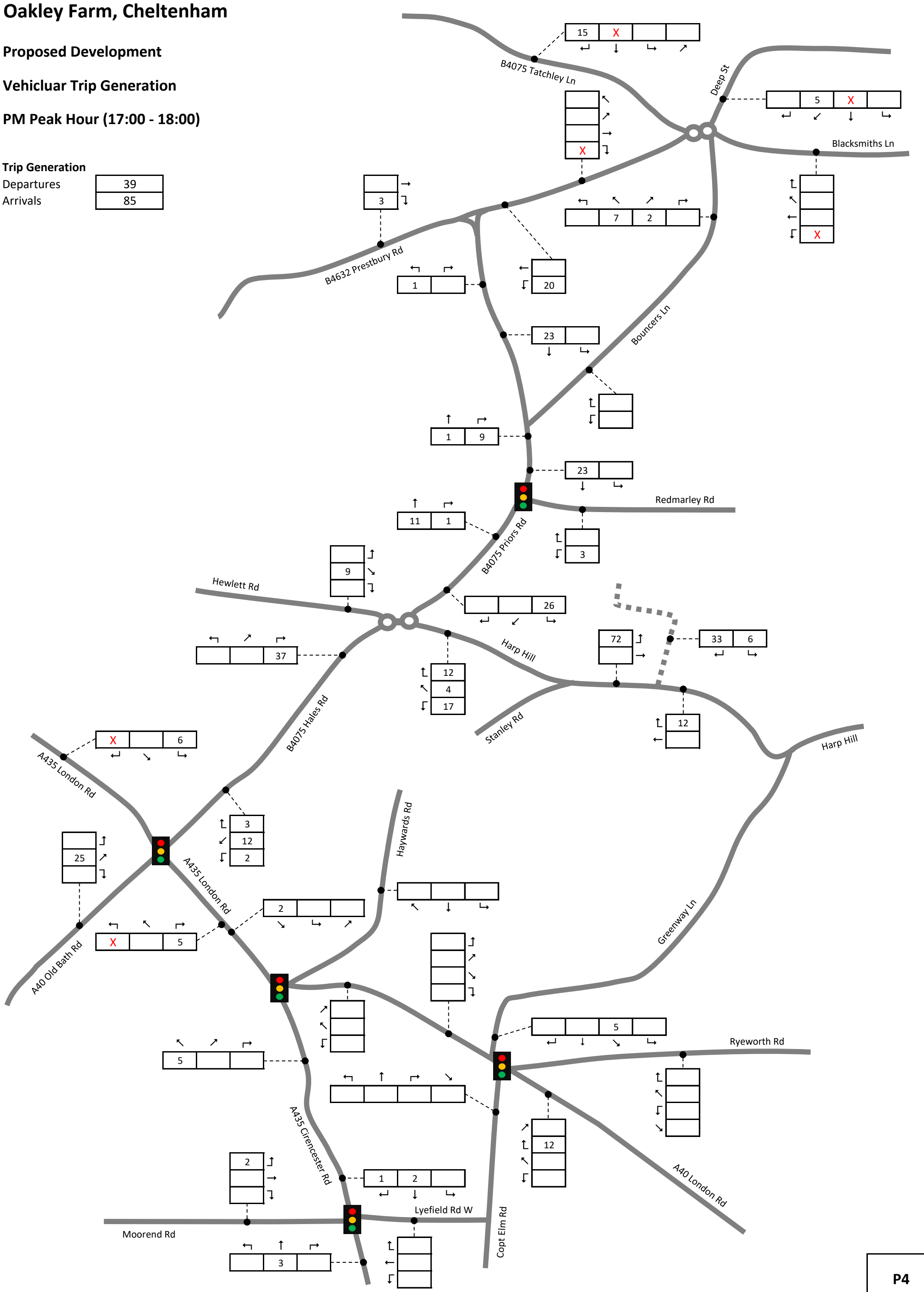
Proposed Development

Vehicluar Trip Generation

PM Peak Hour (17:00 - 18:00)

Trip Generation

Departures	39
Arrivals	85



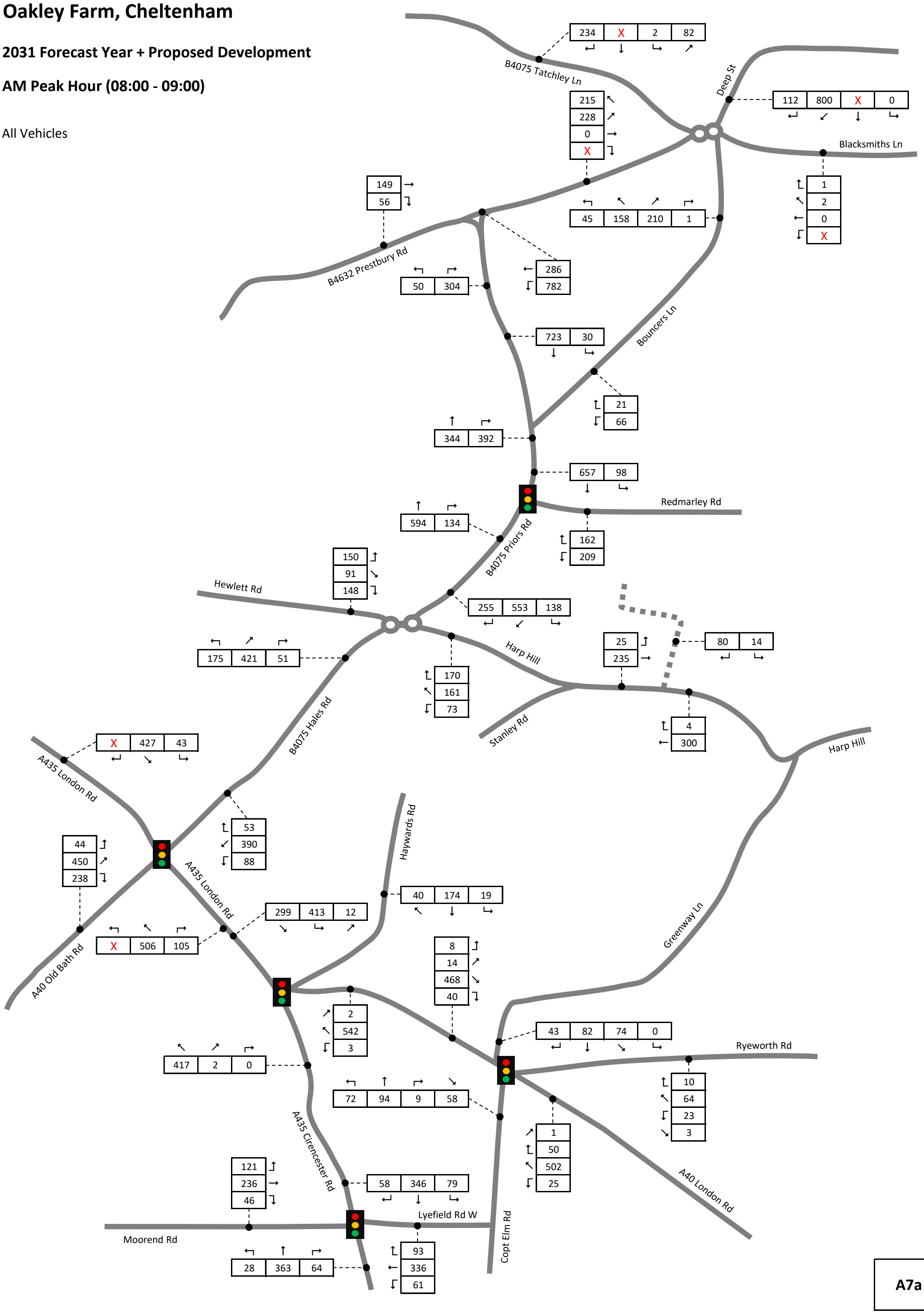
P4

Oakley Farm, Cheltenham

2031 Forecast Year + Proposed Development

AM Peak Hour (08:00 - 09:00)

All Vehicles

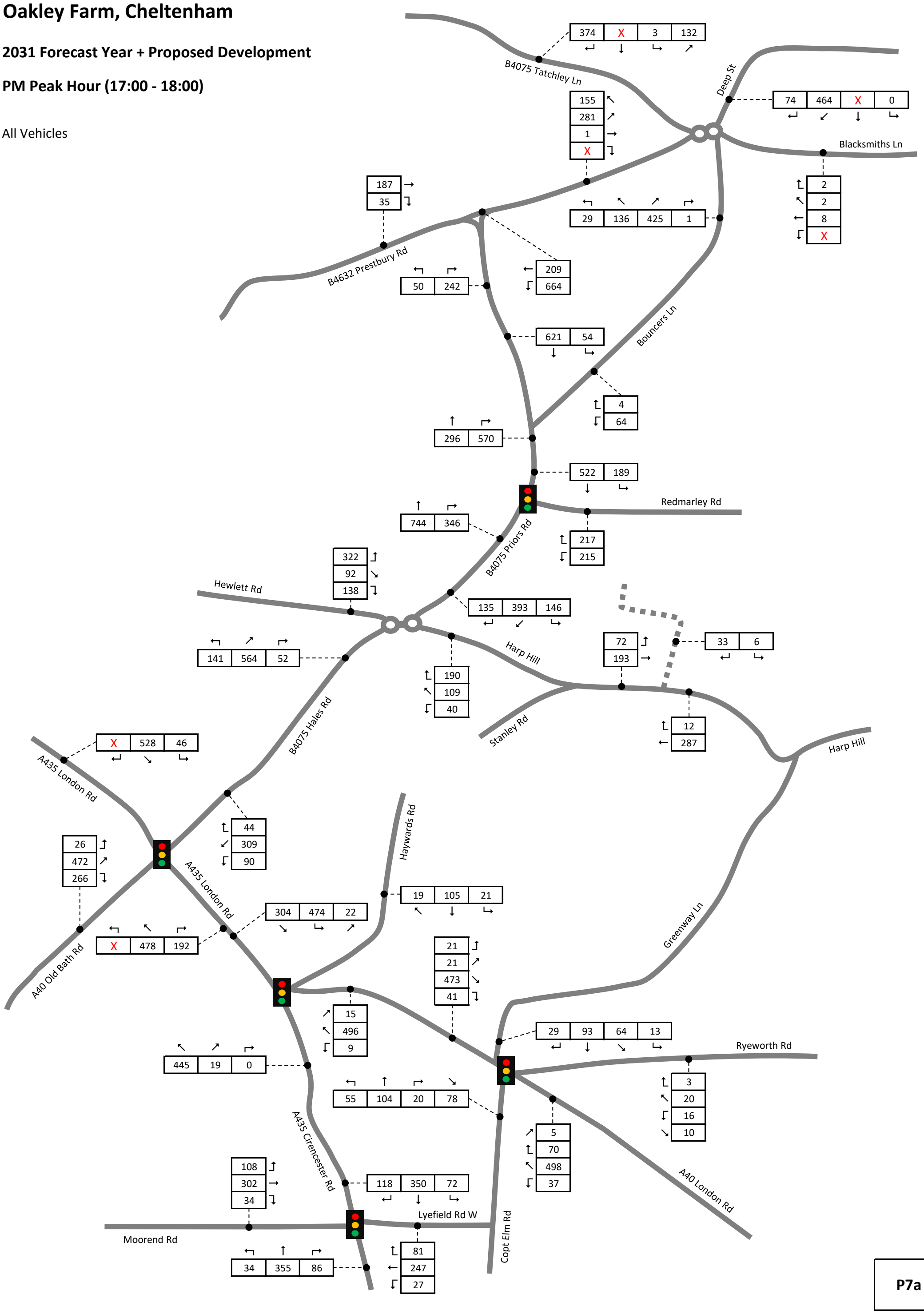


Oakley Farm, Cheltenham

2031 Forecast Year + Proposed Development

PM Peak Hour (17:00 - 18:00)

All Vehicles



P7a

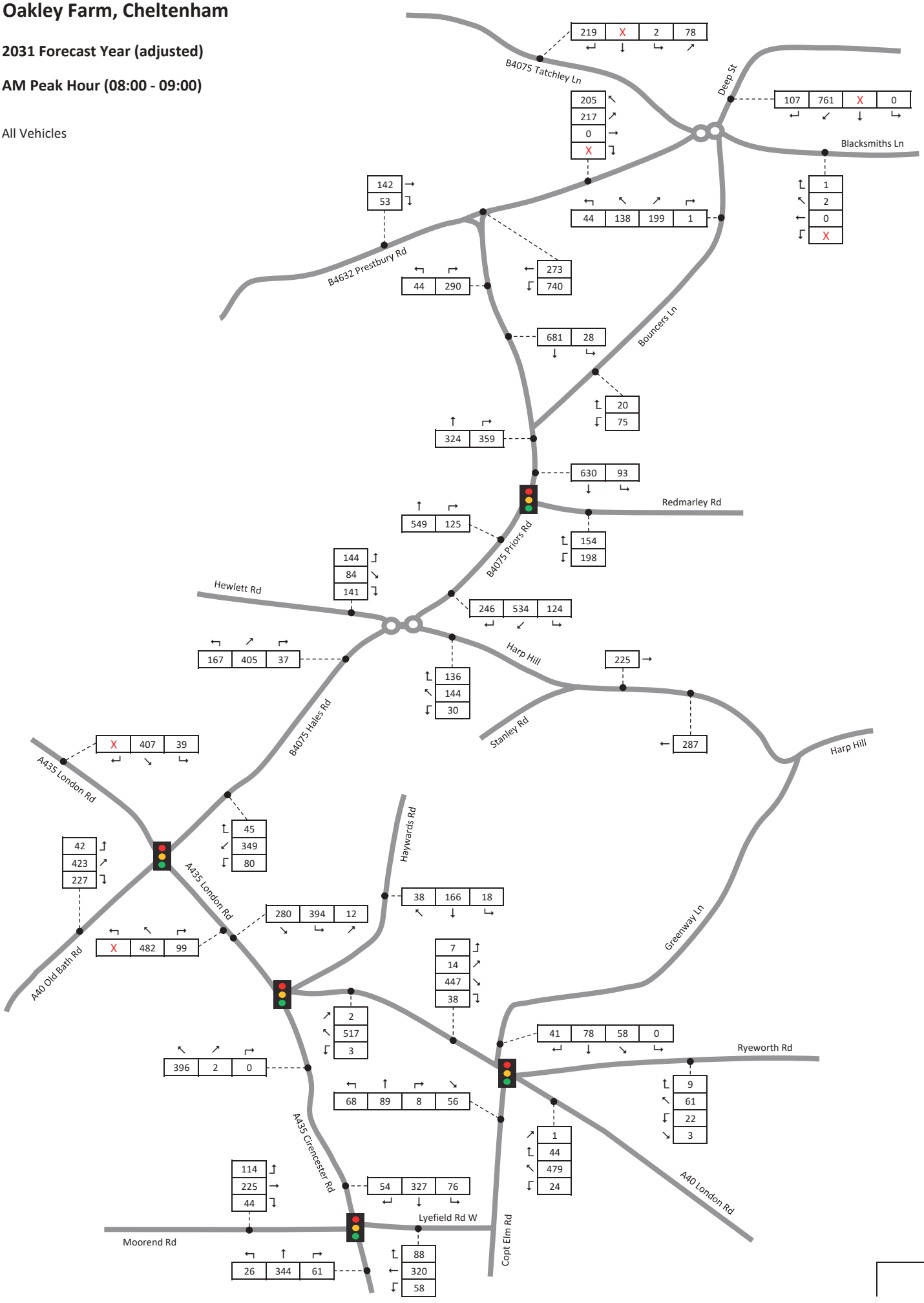
Appendix 7

Oakley Farm, Cheltenham

2031 Forecast Year (adjusted)

AM Peak Hour (08:00 - 09:00)

All Vehicles

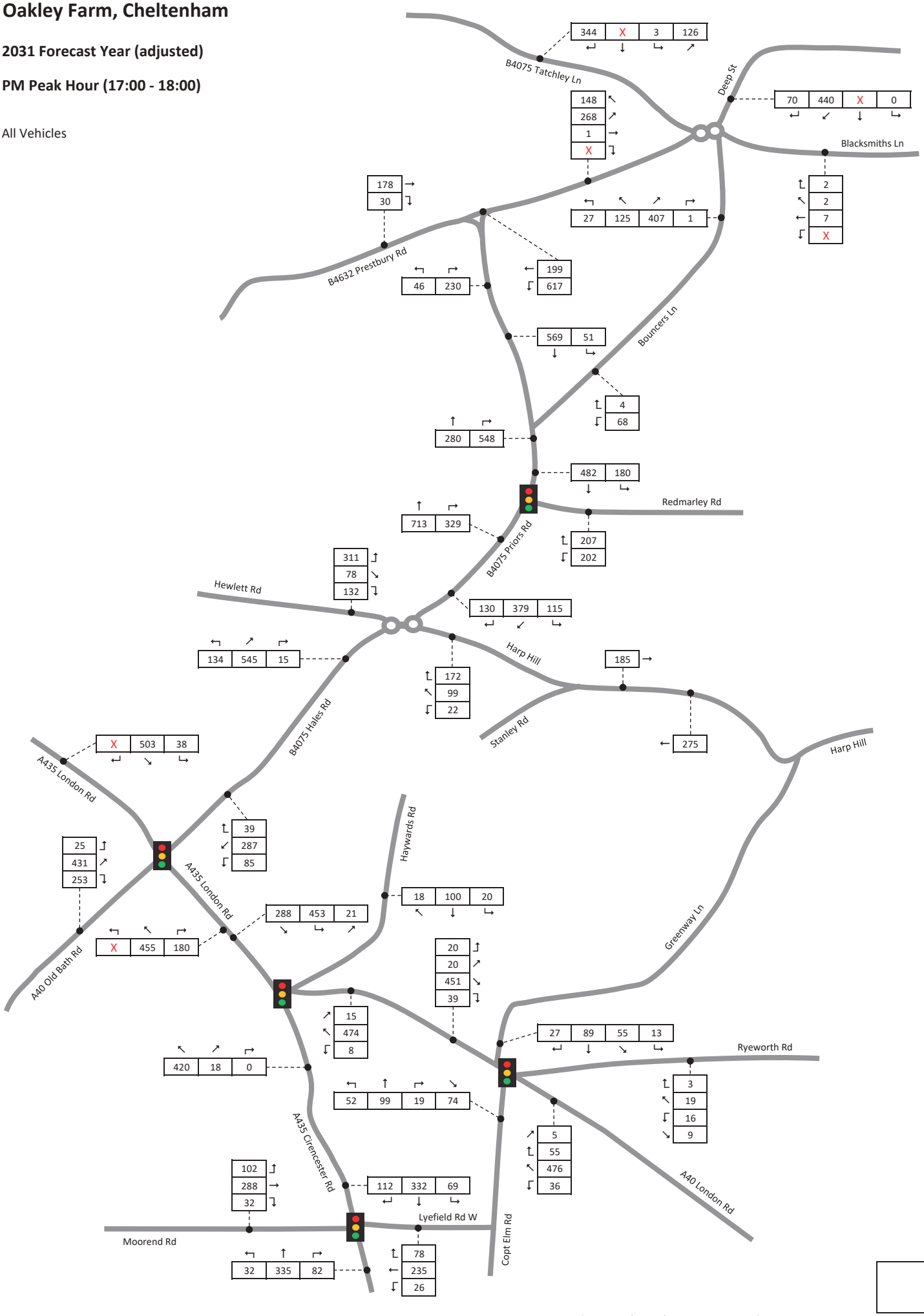


Oakley Farm, Cheltenham

2031 Forecast Year (adjusted)

PM Peak Hour (17:00 - 18:00)

All Vehicles



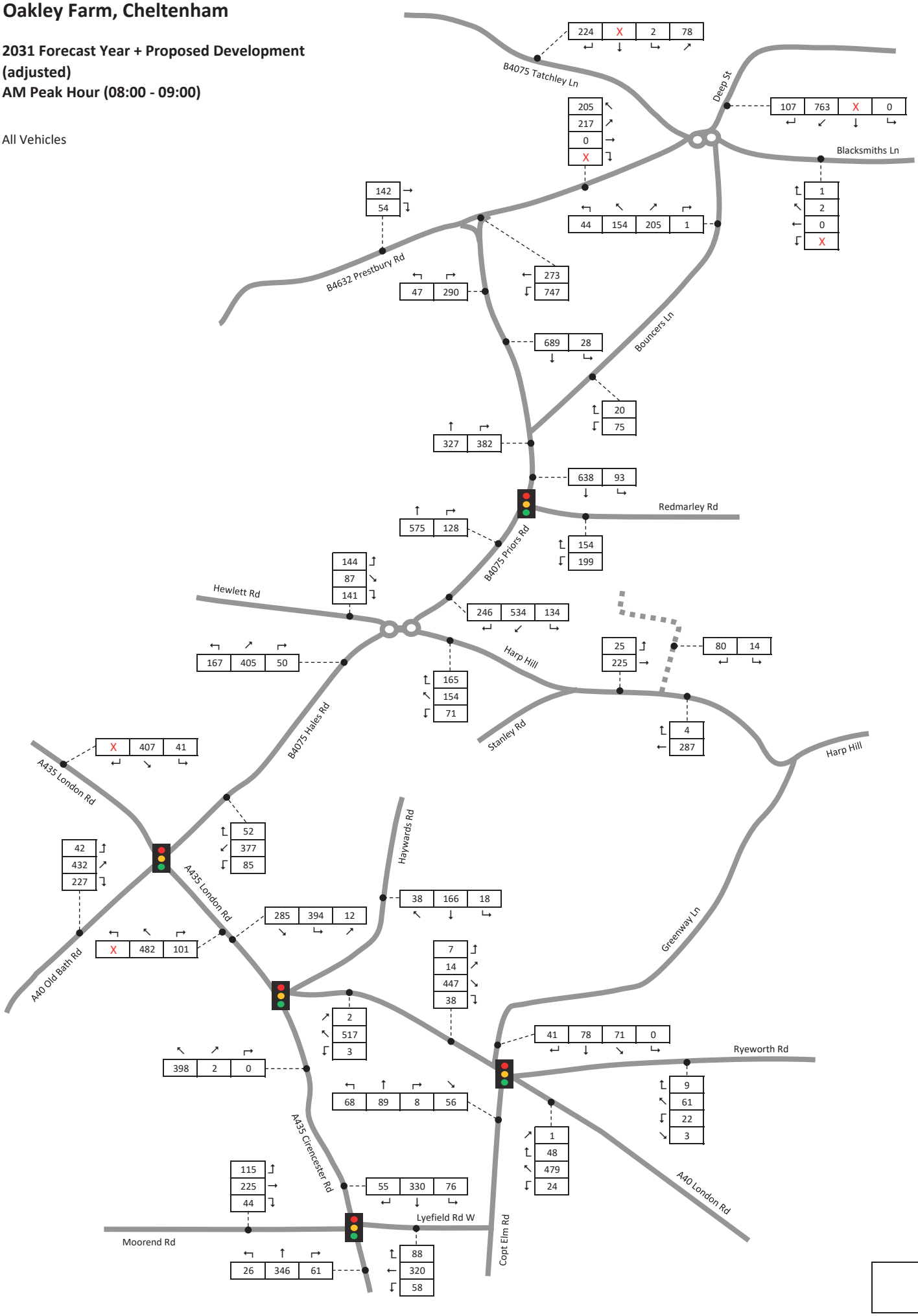
F:\Workfile\H628\Traffic Modelling\H628 Traffic Spreadsheet_Rev A

August 2021

Oakley Farm, Cheltenham

2031 Forecast Year + Proposed Development (adjusted)
AM Peak Hour (08:00 - 09:00)

All Vehicles

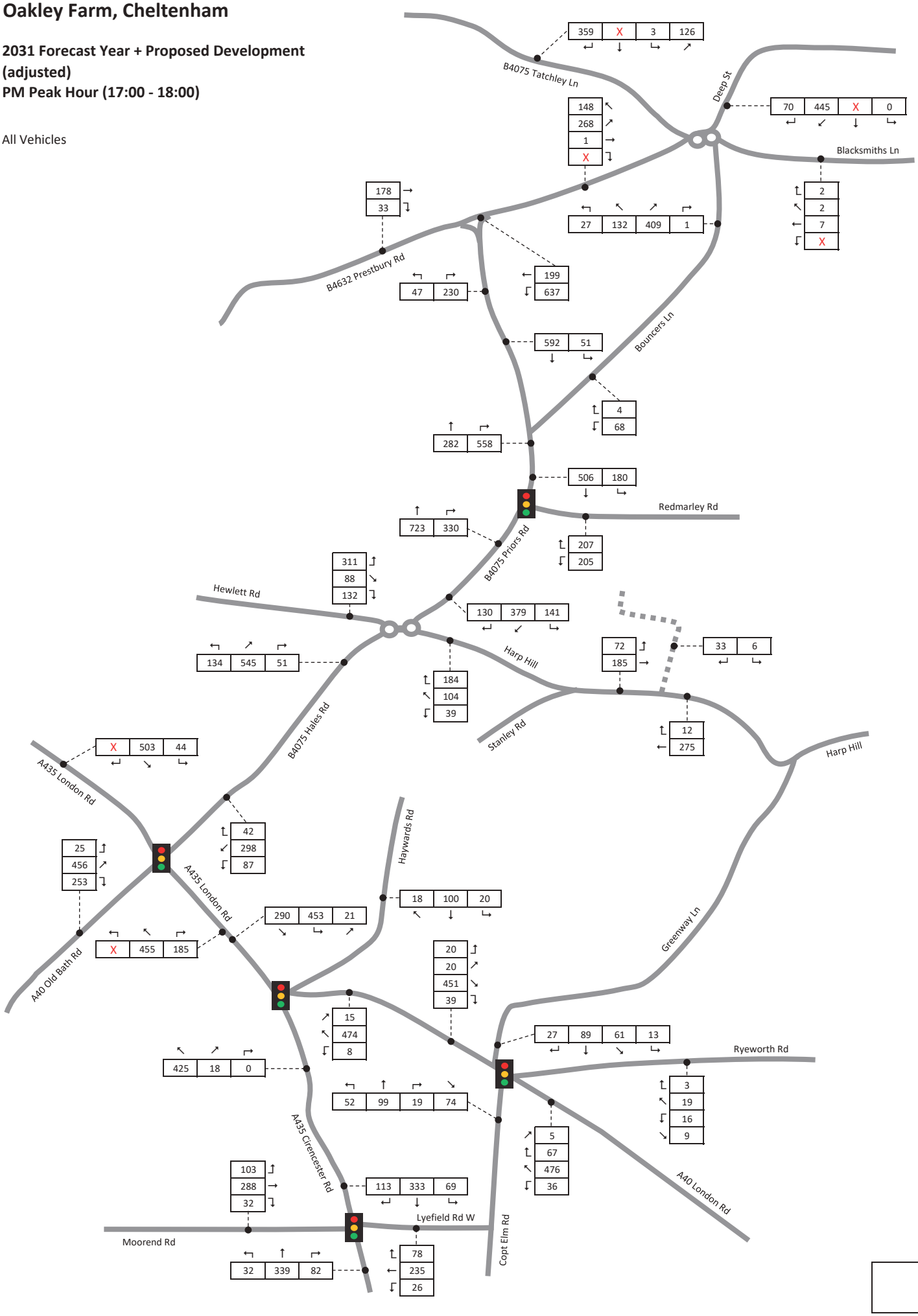


F:\Workfile\H628\Traffic Modelling\H628 Traffic Spreadsheet_Rev A
August 2021

Oakley Farm, Cheltenham

2031 Forecast Year + Proposed Development (adjusted)
PM Peak Hour (17:00 - 18:00)

All Vehicles



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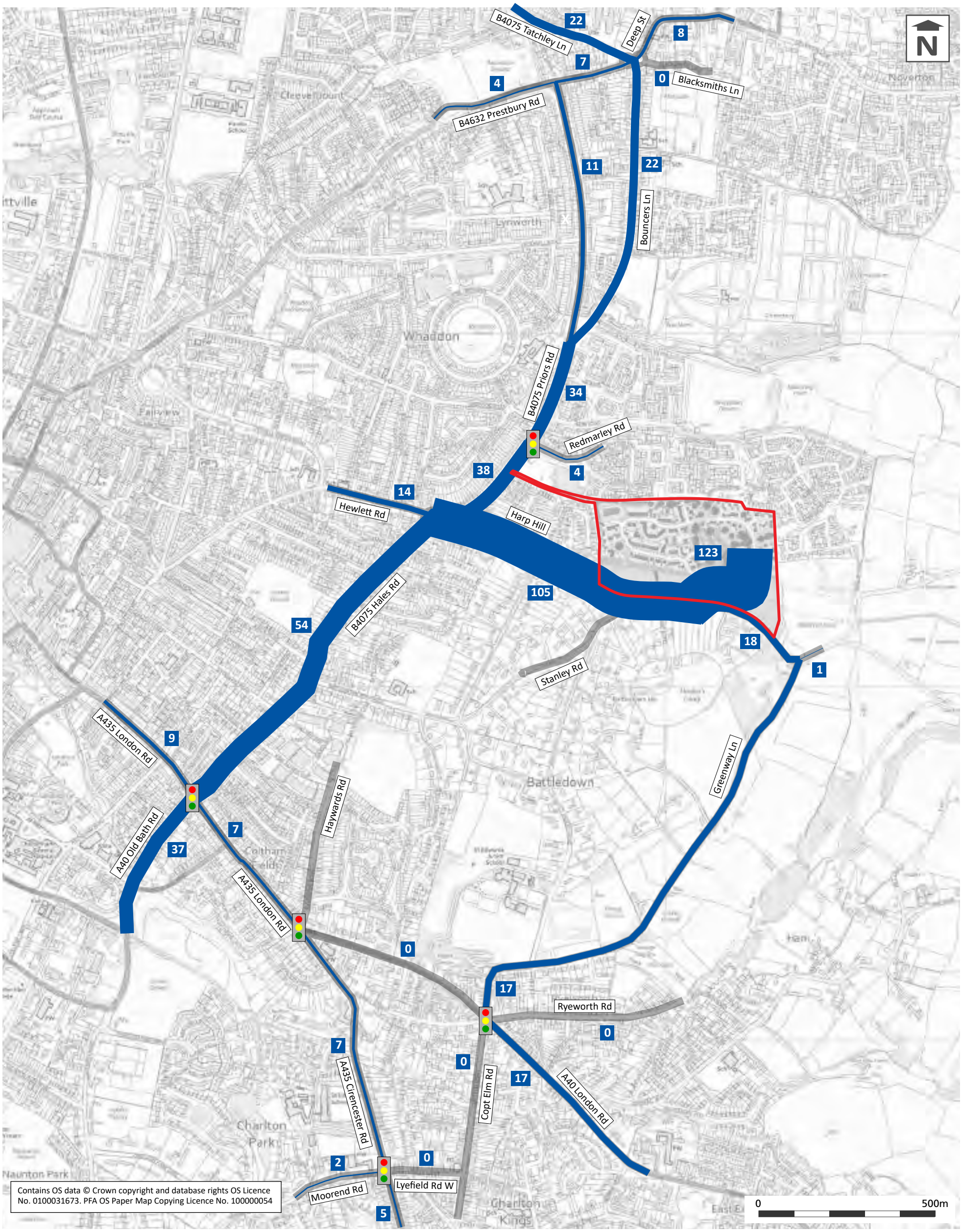
August 2021

Appendix 8



Site Boundary (indicative only)

Development Traffic (2-Way) Bandwidth 50 vehicles

NOTES:
1. Distribution based on 2011 Census Journey to Work Data by Car Driver
2. Robert Hitchins Illustrative Masterplan Dwg. No. 333.P.3.9 Rev E

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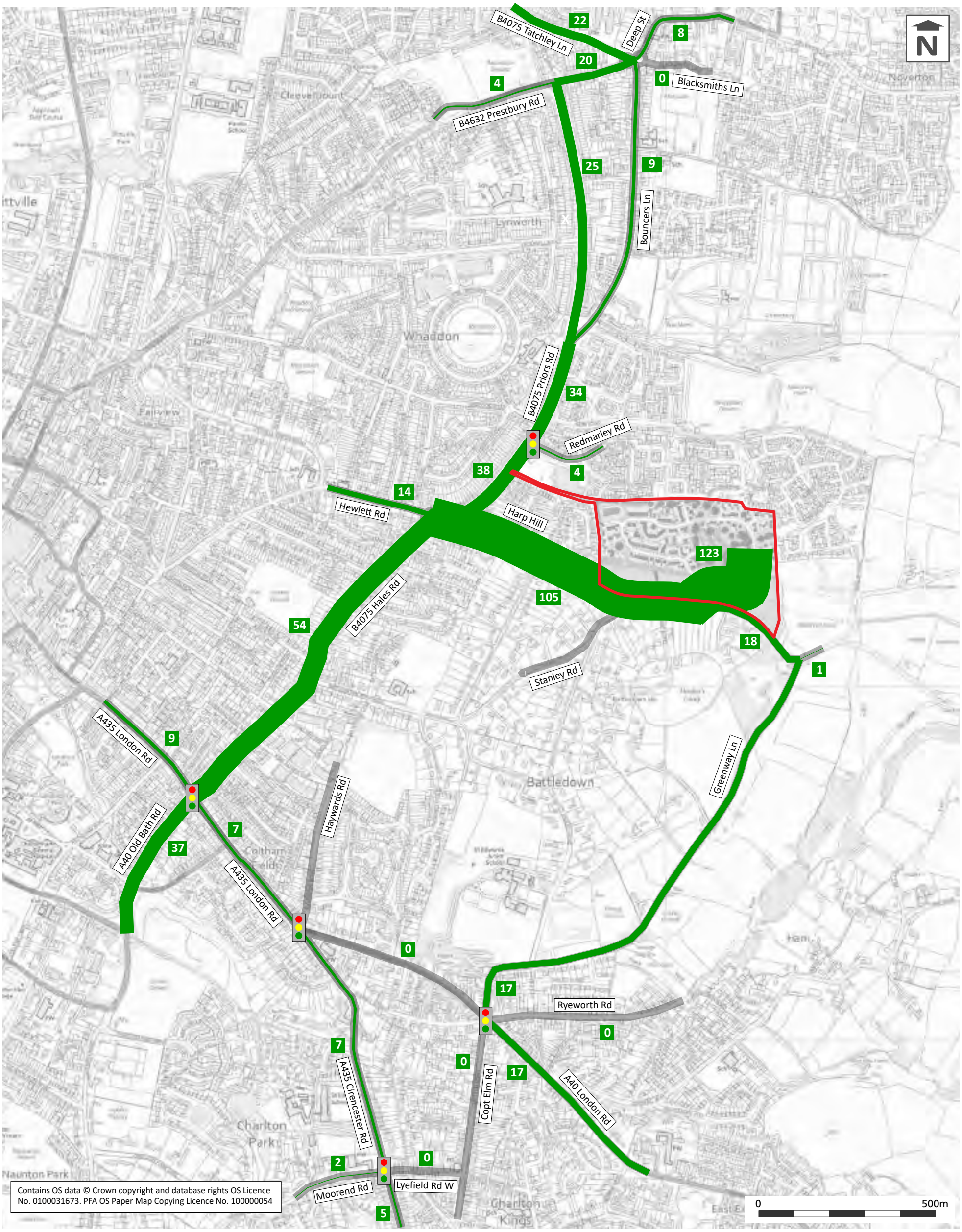
Client: **Robert Hitchins Ltd**

Project: **Land at Oakley Farm, Battledown, Cheltenham**

Figure Title: **Development Traffic - AM Peak Hour (2-way Flows)**

Figure No: **Figure 1**

Date	June 2021
Drawn By	GT
Checked By	JA
Scale	See scale bar
File Ref	H628/Figs/Appeal/Fig 1.ai
Doc Ref	H628/Appeal



Site Boundary (indicative only)

Development Traffic (2-Way) Bandwidth 50 vehicles

NOTES:
1. Distribution based on 2011 Census Journey to Work Data by Car Driver
2. Robert Hitchins Illustrative Masterplan Dwg. No. 333.P.3.9 Rev E

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Client: **Robert Hitchins Ltd**

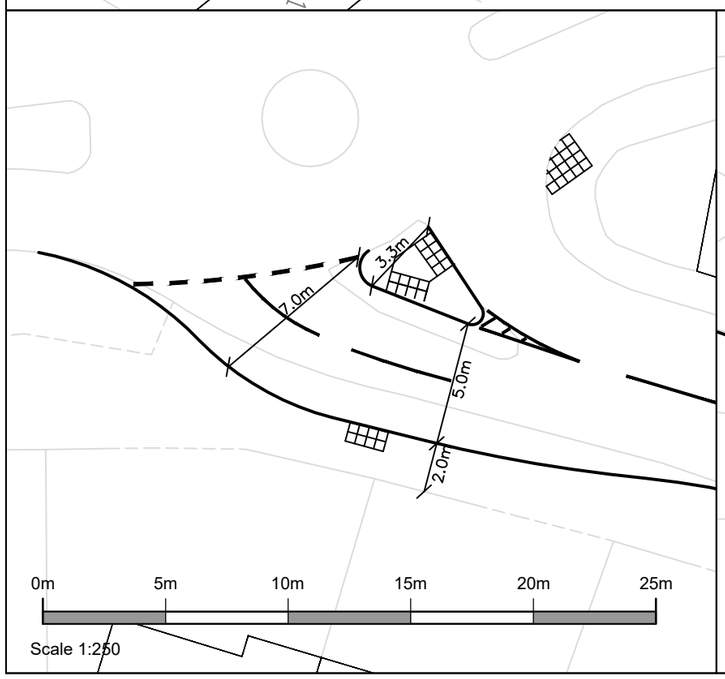
Project: **Land at Oakley Farm, Battledown, Cheltenham**

Figure Title: **Development Traffic - PM Peak Hour (2-way Flows)**

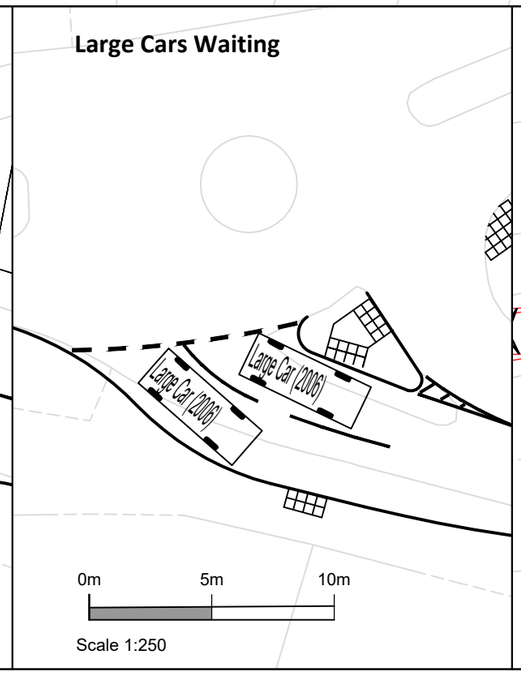
Figure No: **Figure 2**

Date	May 2021
Drawn By	GT
Checked By	JA
Scale	See scale bar
File Ref	H628/Figs/Appeal/Fig 2.ai
Doc Ref	H628/Appeal

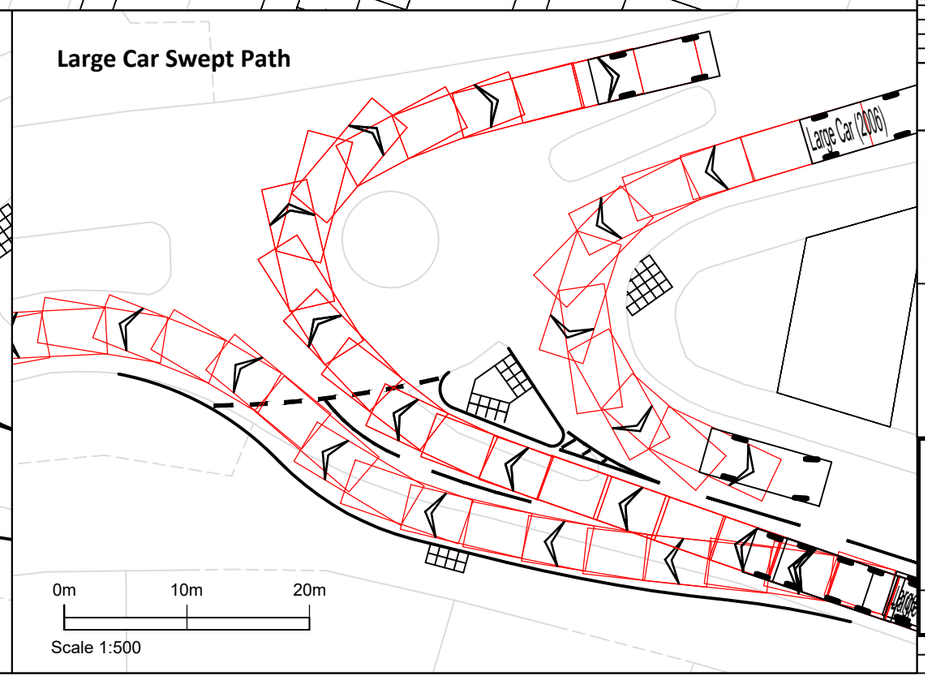
Appendix 9



Large Cars Waiting



Large Car Swept Path



PFA consulting

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Website
www.pfaplc.com

Preliminary
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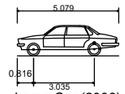
NOTES

1. Road markings are approximate.



Large Car (2006)	
Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

Rev	Date	Description	Drawn	Check
C	12/07/21	Island amended	TLH	PK
B	25/06/21	kerbline amended	TLH	PK
A	26/02/20	Drawing Status and Project Title Changed.	RH	ECS
#	13/02/20	First Issue.	THP	ECS

Status
PRELIMINARY

Client
Robert Hitchins
The Complete Development Solution

Project
Land at Oakley Farm, Battledown, Cheltenham

Drawing Title
Potential widening to Harp Hill approach to B4075 Priors Road / Harp Hill Roundabout

Drawing No.
H628/04 Rev C

Date: February 2020 | Scale: As shown @ A3

E-Mail: jalexander@pfaplc.com

Appendix 10

Road Safety Audit Report

Incorporating
Stage 1 Completion of Preliminary Design;
Risk Assessment of items raised; and
Design Organisation Response to items raised.

Proposed highway works at the Harp Hill entry to the mini-roundabout junction with the B4075 Priors Road
Cheltenham

Client:
PFA Consulting

Client reference:
112702

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Emmer Green
READING
RG4 8PH

E: office@fenley.co.uk
www.fenley.co.uk

Report Status 3

Job no	**RSA-21-055**	Issue no	3	Date	July 2021
Prepared by	JJF	Verified by	ZB	Approved by	JJF
Filename and Path	Fenley/Road Safety Audits/RSA-21/RSA-21-055-3				

1.0 PROJECT DETAILS

Report Title:	Stage 1 Road Safety Audit
Date:	July 2021
Document reference and revision:	RSA-21-055-3
Prepared by:	Fenley Road Safety Limited
On behalf of the Overseeing Organisation:	Gloucestershire County Council
Design Organisation:	PFA Consulting
Project Sponsor:	Robert Hitchins

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
0	Stage 1 Road Safety Audit drafted for Audit Team discussions	JJF			7th July 2021
1	Stage 1 Road Safety Audit finalised and issued to the Design Organisation	JJF	ZB	JJF	9th July 2021
2	Stage 1 Road Safety Audit Report format amended to incorporate a row for inclusion of a Design Organisation Response in order to maintain a concise record of items raised	JJF			9th July 2021
3	Design Organisation Response incorporated	Julian Alexander on behalf of PFA Consulting			12th July 2021

Contents:

Appendices:

2.0 INTRODUCTION

2.1 This report has been prepared by Fenley Road Safety Limited and results from a Stage 1 Road Safety Audit of proposed highway works at the Harp Hill entry to the mini-roundabout junction with the B4075 Priors Hill in Cheltenham. It is understood that the works are to facilitate a residential development consisting of 250 dwellings on land at Oakley Farm.

2.2 The Audit Brief identifies that the proposals do not include any Departures from Standard, whether related to strategic decisions or otherwise.

2.3 The Road Safety Audit was undertaken during July 2021 in accordance with the Road Safety Audit Brief provided, on the 29th June 2021 by the Design Organisation, PFA Consulting, on behalf of the Project Sponsor, Robert Hitchins. The Road Safety Audit comprised of a site visit as well as an examination of the documents provided which are identified in **Appendix A1**. The Audit Team were satisfied that that the Audit Brief was sufficient for the purpose of the Audit instructed.

2.4 The Road Safety Audit has been undertaken by an Audit Team whose qualifications and experience accord with the requirements of GG119. The Audit Team consists of the following members:

Audit Team Leader
Jamie Fenning *BSc(Hons), MIHE, MCIHT, MSoRSA, Highways England RSA Certificate of Competency*
Road Safety / Highway Engineer

Audit Team Member
Zane Beswick *MCIHT*
Road Safety Auditor / Highway Engineer

2.5 The site visit associated with this Road Safety Audit was undertaken by the Audit Team Leader and Audit Team Member, during the early afternoon of Thursday 1st July 2021 between 6:30pm and 7:00pm. The site visit involved walking and driving around the local highway network for a 30-minute period whilst observing local infrastructure and current off-peak traffic conditions. The weather during the site visit was overcast, the road surface was dry and visibility was good. A number of pedestrians and cyclists were observed during the site visit. Vehicular traffic to include motorcycles, cars and light goods vehicles were also observed manoeuvring into and out of Harp Hill as well as along Priors Road. Harp Hill accommodated signage detailing that the 'road ahead closed', 'no through road' and access to frontages only' during the site visit, however traffic was still observed travelling both ways along the carriageway and bypassing the signage.

2.6 The terms of reference of this Road Safety Audit are as described in GG119. The scheme has been examined and this report compiled, only with regard to the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance

with any other standards or criteria. However, in order to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. All comments and recommendations are referenced to the design drawings supplied with the Audit Brief and the location of road safety concerns raised have been illustrated beneath the items along with relevant photographs for clarity, where appropriate, as well as on the Location Plan attached at **Appendix A2**.

2.7 Although all items identified within this Audit Report are considered to be worthy of immediate attention in respect of road safety considerations of the proposals, in accordance with the Road Safety Audit procedures detailed within the Guidance Note for the provision of Road Safety Audits published by Gloucestershire County Council in June 2019, a risk assessment has been undertaken and is included adjacent to each item. The risk assessment ranks each item as either Low, Medium, High or Very High depending on the predicted frequency and severity of incidents. The associated rank is highlighted in red as illustrated in the example table below.

Severity/Frequency	Frequent	Probable	Occasional	Remote
Fatal Injury	Very High	High	High	Medium
Serious Injury	High	High	Medium	Medium
Slight Injury	High	Medium	Medium	Low
Damage Only	Medium	Low	Low	Low

Design Organisation Response

2.8 In accordance with national standards, this Road Safety Audit was finalised and issued to the Design Organisation as per the Road Safety Audit Report Template within Appendix D of GG119, which can be provided upon request from either the Audit Team or Design Organisation. The format of the Audit Report was subsequently revised to incorporate these paragraphs under the sub-heading as well as sufficient space beneath the items and recommendation, within Section 4, for the inclusion of a Design Organisation Response. This is generally contained within a separate Design Organisation Response Report but is included within this document in order to maintain a single record of all problems, recommendations and responses for the benefit of a concise Road Safety Audit trail to be held on file for Quality Assurance purposes.

2.9 The Design Organisation Response has been prepared by:
Name: Julian Alexander
Position / Organisation: Director, PFA consulting

2.10 Any drawings or documents associated with the Design Organisation Response are listed at **Appendix A3,** if applicable.

3.0 ITEMS RAISED IN ANY PREVIOUS ROAD SAFETY AUDITS

3.1 Fenley Road Safety Limited has not been made aware of any previous road safety audits associated with the proposals.

4.0 ITEMS RAISED AT THIS STAGE 1 ROAD SAFETY AUDIT

A.1	LOCAL ALIGNMENT
A.1.1	**PROBLEM**
Location:	Harp Hill
Summary:	Vehicles turning left into Harp Hill will encroach the opposing lane of traffic
Acc Type:	Sideswipes

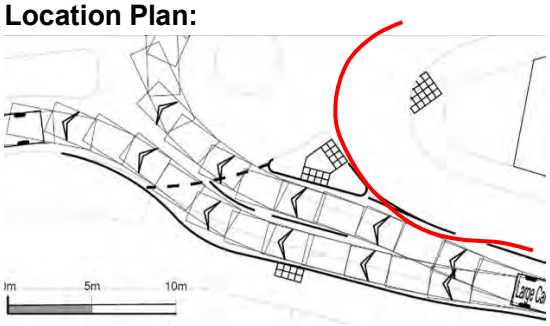
Harp Hill meets the B4075 Priors Road at an angle of circa 45° with a circa 3.5 metre inside radius for traffic turning left into Harp Hill from Priors Road. The Harp Hill arm accommodates a single entry with a road centreline that splits on approach to the over-runnable refuge island that divides the entry and exit lanes with an area of hatching. Vehicles that turn left into Harp Hill were observed to cross the road centreline and encroach the hatching. This does not raise road safety concerns at present as traffic approaching the mini-roundabout along Harp Road should not encroach the hatching. The proposals that are subject to this Stage 1 Road Safety Audit, include the widening of the Harp Hill entry to provide two entry lanes. The proposed widening is to be provided on both sides of the carriageway with the footway on the southern side of Harp Hill reduced to 2.5 metres and the width of the refuge island reduced as well as road centreline realigned removing the area of central hatching on the approach to the island. The realignment of the road centreline and removal of the hatching is likely to result in a vehicle turning left from Priors Road to Harp Hill, encroaching the opposing approach lane on Harp Hill. Whilst this does not always raise road safety concerns, a vehicle travelling along Harp Hill and wishing to turn right along Priors Road is likely to be abutting the road centreline. This, compounded by the restricted visibility between a left turning vehicle on Priors Road and the expected path of a vehicle approaching the roundabout on Harp Hill due removal of the hatching, could lead to sideswipe type collisions.

Severity/Frequency	Frequent	Probable	Occasional	Remote
Fatal Injury	Very High	High	High	Medium
Serious Injury	High	High	Medium	Medium
Slight Injury	High	Medium	Medium	Low
Damage Only	Medium	Low	Low	Low

RECOMMENDATION:

It is recommended that the westbound road centreline of Harp Hill is realigned to ensure sufficient space is provided for traffic to turn left from Priors Road without encroaching the opposing lane.

Location Plan:



DESIGN ORGANISATION RESPONSE provided by PFA Consulting on the 12th July 2021 following formal issue of this Stage 1 Road Safety Audit on the 9th July 2021

As recommended, it is agreed that the centreline on Harp Hill be realigned to ensure traffic turning left from Priors Road will not encroach the opposing lane. PFA drawing H628/04 Rev C at Appendix A3 incudes for the realignment of the centreline and the associated changes to the inside kerb line on the Harp Hill approach.

A.2	GENERAL
	No Road Safety Concerns in GENERAL have been raised at this stage.
A.3	JUNCTIONS
A.3.1	**PROBLEM**
Location:	Harp Hill approach to mini-roundabout
Summary:	The driver of a vehicle waiting at the give-way line of Lane 2 is not ideally aligned
Acc Type:	Vehicle side impact collision

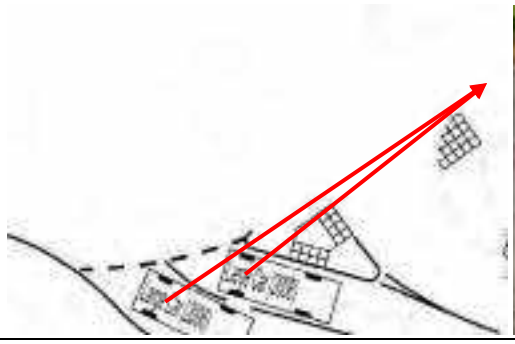
The existing Harp Hill entry to its mini-roundabout with the A4075 Priors Road accommodates a single lane that approaches at approximately 45° before turning to meet the Priors Road carriageway at almost 90° in order to maximise visibility. The proposals that are subject to this Stage 1 Road safety Audit, include the provision of a two entry lane on Harp Hill to be accommodated by reducing the width of the central refuge island as well as widening on the nearside. The widening of the carriageway by reducing the refuge island will result in vehicles approaching and meeting the mini-roundabout junction at 45°. Whilst visibility to the right of a vehicle that meets a major road at 45° does not always raise road safety concerns, the provision of a two lane entry at this angle coupled with the reduction in visibility over the existing situation could lead to a vehicle proceeding when it is not safe to do so.

Severity/Frequency	Frequent	Probable	Occasional	Remote
Fatal Injury	Very High	High	High	Medium
Serious Injury	High	High	Medium	Medium
Slight Injury	High	Medium	Medium	Low
Damage Only	Medium	Low	Low	Low

RECOMMENDATION:

It is recommended that an offside radius is provided on the refuge island and the proposed give-way line is adjusted to maximise visibility whilst not restricting existing movements to the western arm of Priors Road.

Location Plan:



DESIGN ORGANISATION RESPONSE provided by PFA Consulting on the 12th July 2021 following formal issue of this Stage 1 Road Safety Audit on the 9th July 2021

As recommended, it is agreed that the radius of the refuge island and give way line be adjusted to improve visibility, as shown in PFA drawing H628/04 Rev C at Appendix A3.

A.4	WALKING CYCLING AND HORSE RIDING
A.4.1	**PROBLEM**
Location:	Harp Hill southern footway
Summary:	Existing footway accommodates a ramp making for an uneven surface
Acc Type:	Pedestrian trip and fall

The existing footway to the south of the Harp Hill carriageway is wide and accommodates a number of vehicular crossovers linking to the driveways / frontages of properties. The proposals that are subject to this Stage 1 Road safety Audit, include a reduction in the width of the footway to 2.5 metres in proximity to the Harp Hill approach to the mini-roundabout junction with Priors Road and driveway associated with property number 3 Harp Hill. The frontage of property number 3, is set above the level of the footway and falls towards the footway with a section of the adjacent footway to the west, also set at a gradient making for an uneven surface. Whilst this does not raise road safety concerns at present due to the width of the footway and presence of vegetation to the east of the access guiding pedestrians away from the uneven surface (which should not encroach the public highway), the reduction in width could result in pedestrians walking closer to the back edge of footway where the uneven surface could lead to a trip / fall and personal injury.

Severity/Frequency	Frequent	Probable	Occasional	Remote
Fatal Injury	Very High	High	High	Medium
Serious Injury	High	High	Medium	Medium
Slight Injury	High	Medium	Medium	Low
Damage Only	Medium	Low	Low	Low

RECOMMENDATION:

It is recommended that the footway in the immediate vicinity of the vehicular crossover is regraded to ensure a smooth surface.

Location Plan:

DESIGN ORGANISATION RESPONSE provided by PFA Consulting on the 12th July 2021 following formal issue of this Stage 1 Road Safety Audit on the 9th July 2021

As recommended, it is agreed that the footway is regraded to provide a smooth surface. This will be dealt with as part of the detailed design.

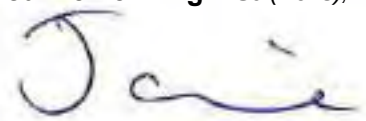
A.5	TRAFFIC SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING
	No Road Safety Concerns in TRAFFIC SIGNS, CARRIAGEWAY MARKINGS AND LIGHTING have been raised at this stage.

5.0 STAGE 1 ROAD SAFETY AUDIT TEAM STATEMENT

5.1 We certify that this Road Safety Audit has been carried out in accordance with GG119.

Audit Team Leader

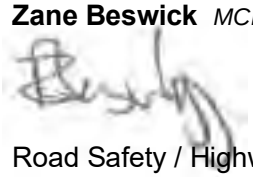
Name: **Jamie Fenning** *BSc (Hons), MIHE, MCIHT, MSoRSA, HE RSA Certificate of Competency*

Signed: 

Position: Road Safety / Highway Engineer
Organisation: Fenley Road Safety Limited
Date: 9th July 2021

Audit Team Member

Name: **Zane Beswick** *MCIHT*

Signed: 

Position: Road Safety / Highway Engineer
Organisation: Fenley Road Safety Limited
Date: 9th July 2021

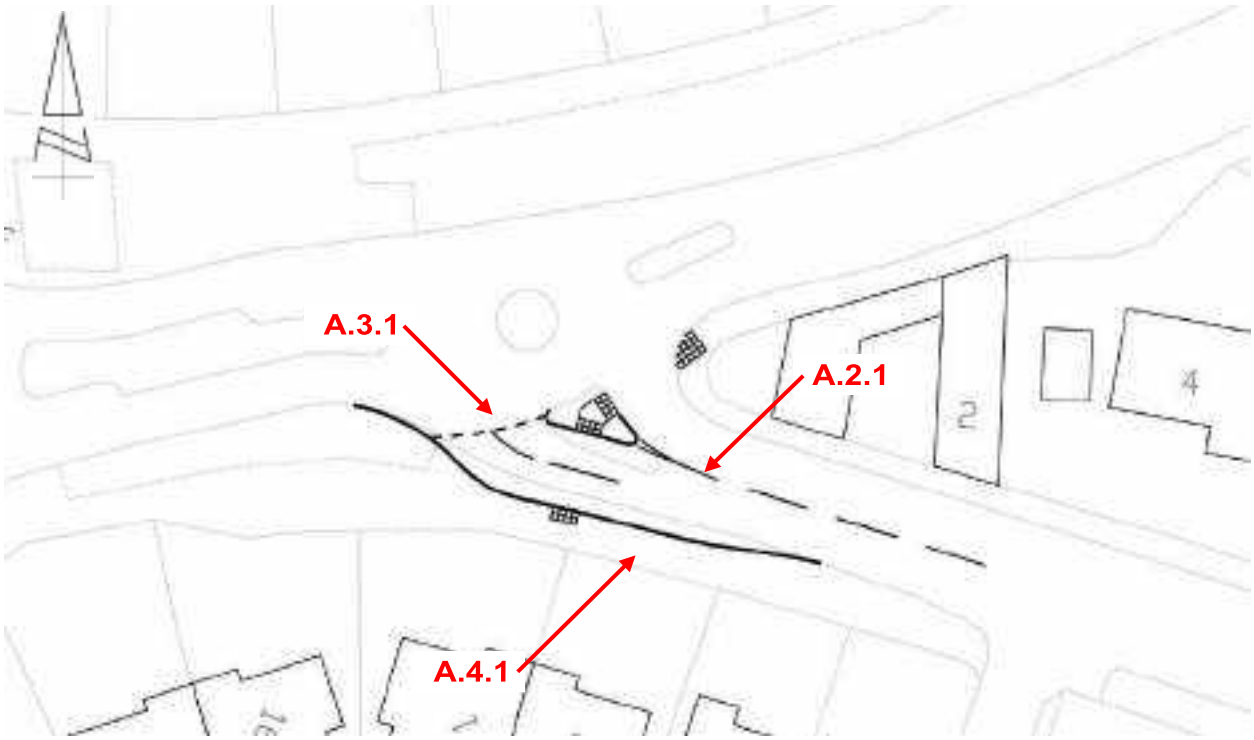
Appendix A1

Documents and Drawings provided for this Stage 1 Road Safety Audit

Audit Stage	Doc. No.	Rev	Title
Stage 1	H628-FN08	-	Road Safety Audit Brief
	Dwg No.	Rev	Title
	H628-04	B	Potential Widening to Harp Hill approach to B4075 Priors Road Harp Hill Roundabout

Appendix A2

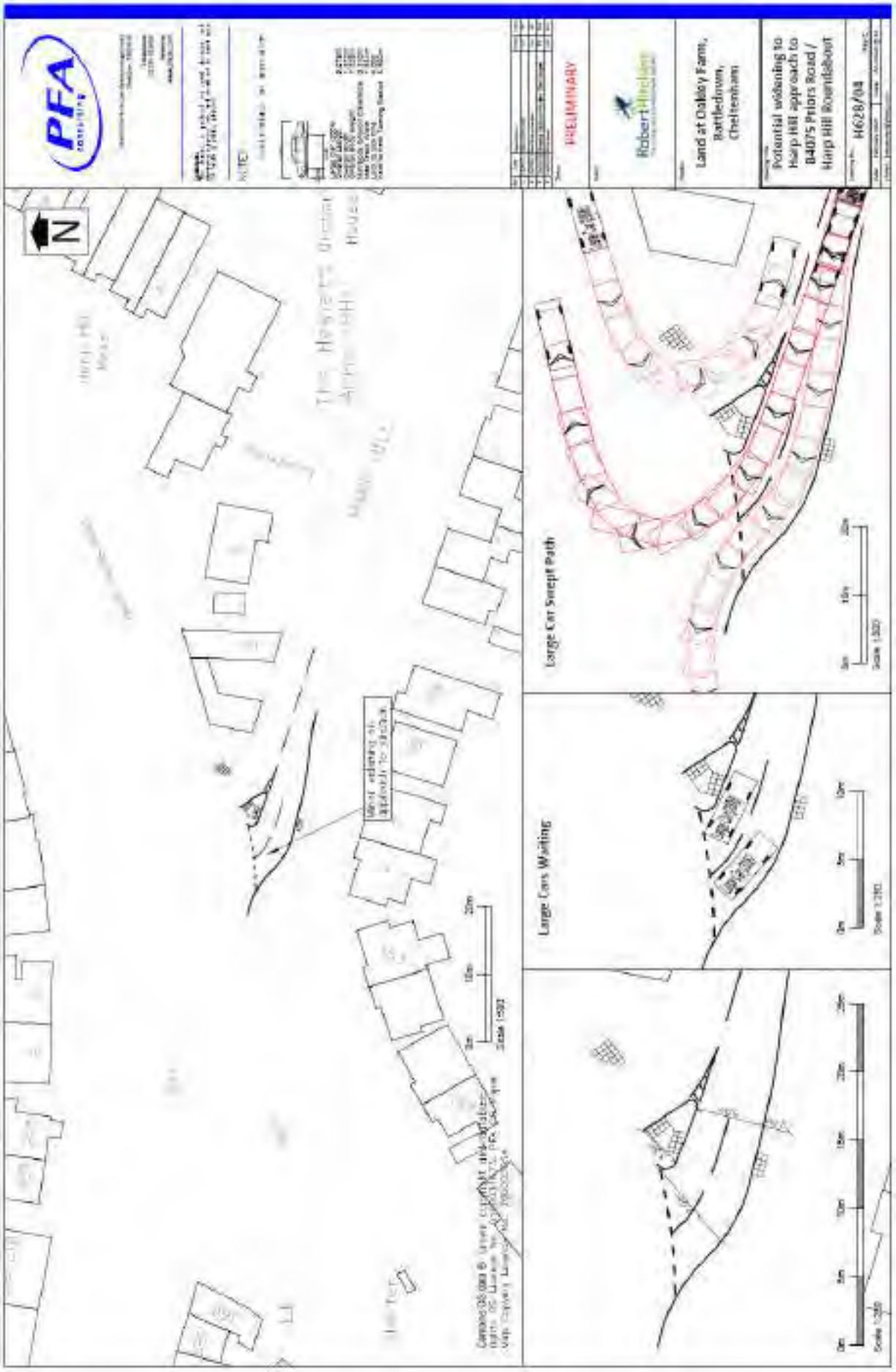
Item Location Plan


A.3.1
A.2.1
A.4.1
2
4

Appendix A3

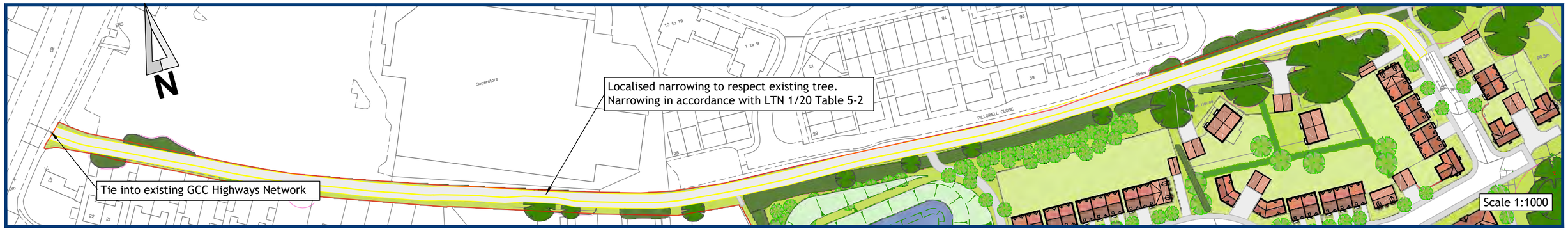
Drawings associated with the Design Organisation Response

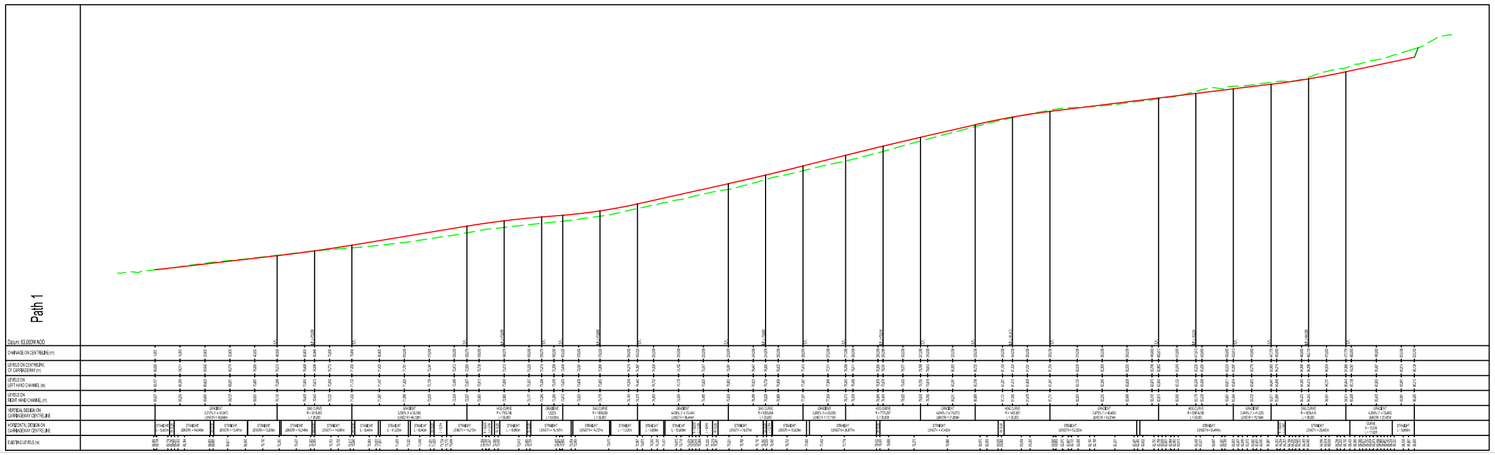
Audit Stage	Dwg No.	Rev	Title
Stage 1	H628-04	C	Potential Widening to Harp Hill approach to B4075 Priors Road Harp Hill Roundabout

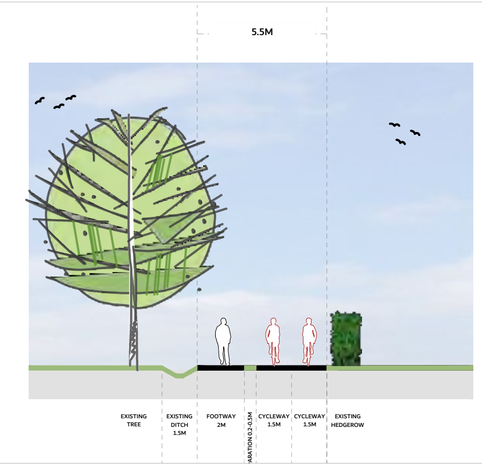

PFA
PRELIMINARY
Robert Hitchins
Land at Oakley Farm, Battledown, Cheltenham
Potential widening to Harp Hill approach to B4075 Priors Road / Harp Hill Roundabout
H628/04
N
Large Car Swept Path
Large Cars Waiting


fenley

Appendix 11

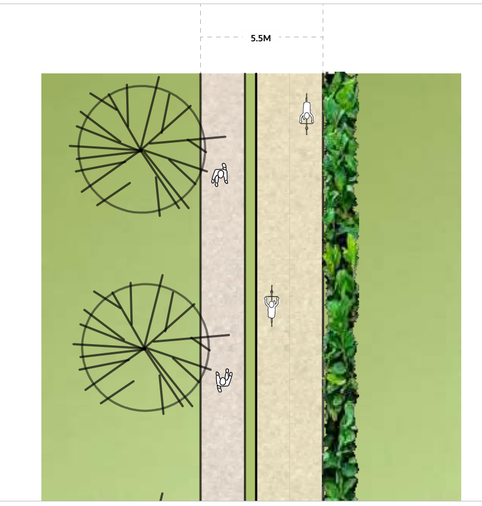






Notes:

1. LTN 1/20 compliant cycleway to be provided between points 'A' and 'B' consisting of a 3m cycleway and 2m footway separated with verge/concrete edging. Localised narrowing where required to mitigate with root zones etc in accordance with Table 5-2 LTN 1/20.



Robert Hitchins
The Complete Development Solution

Site Name: 333 - Land at Oakley Farm			
Drawing Title: Masterplan with Cyclyway Overlay			
Drawing Number: 333.E.33			Revision:
Drawn By:	Checked By:	Date:	Scale: 1:2500 @ A2

The Manor, Boddington, Cheltenham, Gloucestershire, GL51 0TJ
Tel: 01242 680694
www.robert-hitchins.co.uk

CAD Ref:

Appendix 12

NOTE:
12.5
Proposed Gradient
e.g.12.5 = a gradient of 1 in 12.5

Site Name: Land at Oakley Farm, Battledown	Drawing Number: 333.E.36			Revision:
Drawing Title: Indicative Gradients of Roads and Cycleway	Drawn By: SJH	Checked By: EJA	Date: 09.08.2021	Scale: 1:2000 @ A3

RobertHitchins
The Complete Development Solution
The Manor, Boddington, Cheltenham, Gloucestershire, GL51 0TJ
Tel: 01242 680694
www.robert-hitchins.co.uk

Appendix 13

OAKLEY FARM, PRIORS ROAD, CHELTENHAM

CYCLE LEVEL OF SERVICE TOOL ASSESSMENT – PROPOSED PRIORS ROAD CYCLIST IMPROVEMENTS

Introduction

1. This file note provides a Cycle Level of Service Tool (CLoS) Assessment, in line with that set out in LTN 1/20 of the proposed works to provide improvements for cyclists and pedestrians along Priors Road, Cheltenham, as set out on drawing H628/08 Rev A.

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Cohesion	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	1. Ability to join/leave route safely and easily: consider left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey	1	Connections are provided with the existing Toucan crossing at the Priors Rd/ Redmarley Rd junction and to Whaddon Rd, a signed cycle route towards the town centre.
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed – cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	2. Provision for cyclists throughout the whole length of the route		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions	2	Continuous route provides between cycle link to site and Whaddon Rd.
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	3. Density of routes based on mesh width ie distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000m	Route contributes to a network density mesh width 250 – 1000m	Route contributes to a network density mesh width <250m	0	Minimal existing cycle paths in vicinity of proposals, but proposals do connect with what facilities there are nearby.

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as-the-crow-flies' distance as possible.	4. Deviation of route Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2	2	Route to town centre using Whaddon Rd is 1.1 times longer than most direct route along Priors Rd and Hewlett Rd.
	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	5. Stopping and give way frequency		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km	0	Two stops/give ways in 160m
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	6. Delay at junctions		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (eg bypass at signals)	1	This will depend on the call time provided at the proposed toucan crossing.
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	7. Ability to maintain own speed on links		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.	1	Cyclists will need to cycle slower due to pedestrians.
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	8. Gradient		Route includes sections steeper than the gradients recommended in Chapter 5	There are no sections of route steeper than the gradients recommended in Chapter 5	There are no sections of route which steeper than 2%	2	Route is more or less on a level gradient.

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Safety	Reduce/ remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph	2	Cyclist do not share carriageway along route of proposed works.
			10. Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph	2	Cyclist do not share carriageway along route of proposed works.
	Avoid high motor traffic volumes where cyclists are sharing the carriageway	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	11. Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour	>10000 AADT, or >5% HGV	5000-10000 AADT and 2-5%HGV	2500-5000 and <2% HGV	0-2500 AADT	2	Cyclist do not share carriageway along route of proposed works.
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Figure 4.1. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	12. Segregation to reduce risk of collision alongside or from behind	Cyclists sharing carriageway – nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on-carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.	2	Cyclists do not share carriageway with motor vehicles.

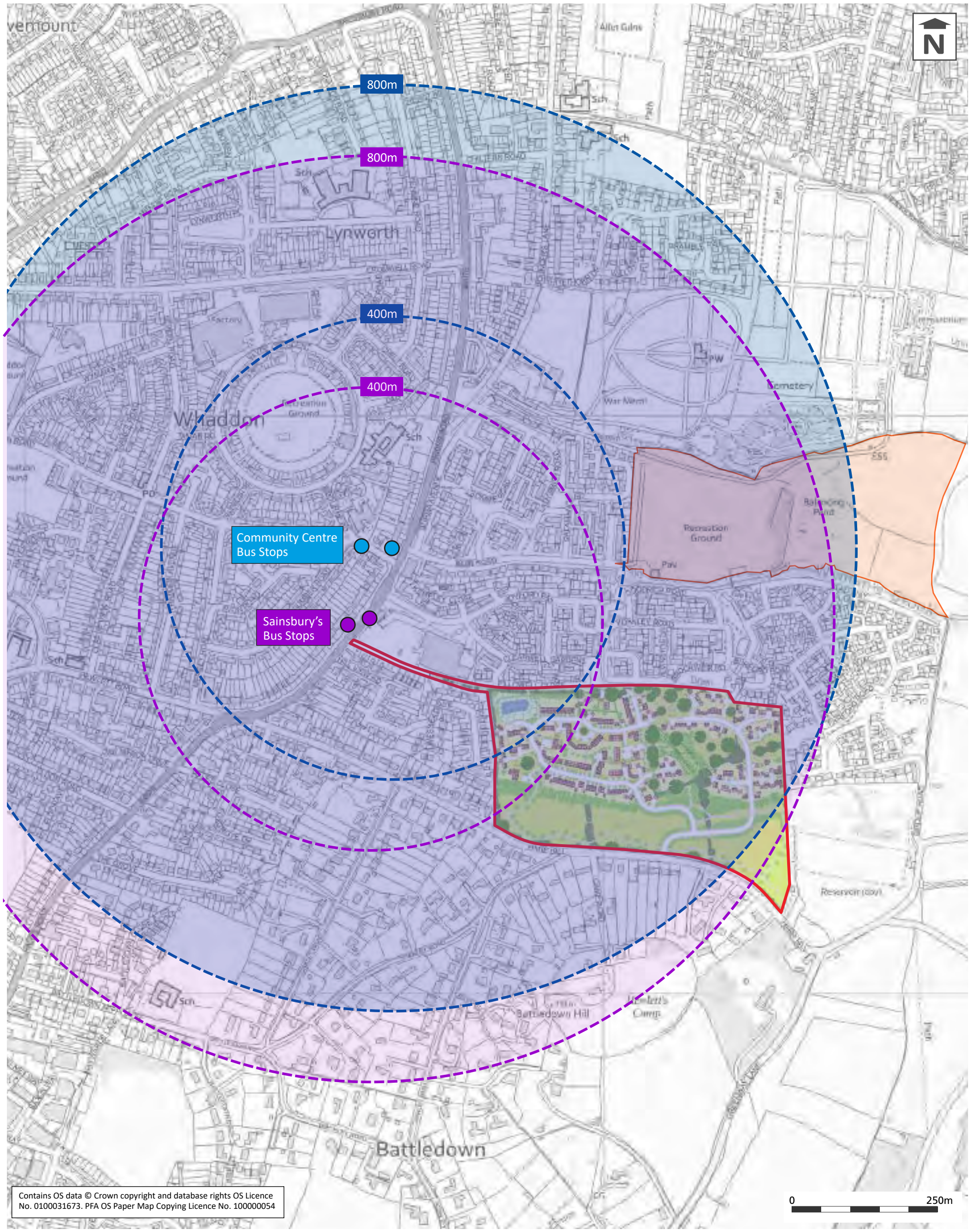
Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Safety		A high proportion of collisions involving cyclists occur at junctions. Junctions therefore need particular attention to reduce the risk of collision. Junction treatments include: Minor/side roads – cyclist priority and/or speed reduction across side roads Major roads – separation of cyclists from motor traffic through junctions.	13. Conflicting movements at junctions		Side road junctions frequent and/ or untreated. Major junctions, conflicting cycle/ motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/ motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.	1	No side roads, though potential conflict at driveways, this has been reduced by off-setting route 0.5m from driveways to improve visibility.
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	14. Legible road markings and road layout		Faded, old, unclear, complex road markings/ unclear or unfamiliar road layout.	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout	2	Route has a simple layout and is straightforward to follow.
	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	15. Conflict with kerbside activity	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (eg nearside cycle lane < 2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity – eg less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.	1	Potential conflict with vehicles accessing driveways, and pedestrians, including those accessing bus stops; though conflict should not be that frequent.
	Reduce severity of collisions where they do occur	Wherever possible routes should include “evasion room” (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	16. Evasion room and unnecessary hazards		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.	1	No physical hazards on route and route is buffered by 0.5m from driveways. Potential conflict when giving way to join/leave route on Whaddon Rd, though this is minimised due to good visibility and give way markings when leaving route.

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Comfort	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/gullies, potholes, poor quality carriageway paint (eg from previous cycle lane)	17. Major and minor defects		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface	2	Whole of route is to be resurfaced.
		Pavement or carriageway construction providing smooth and level surface	18. Surface type		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete paviours with frequent joints.	Machine laid smooth and non-slip surface – eg Thin Surfacing, or firm and closely jointed blocks undisturbed by turning heavy vehicles.	2	Whole of route is to be resurfaced.
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route	2	Minimum width of 3m provided and able to accommodate up to 300 cyclists and pedestrians per hour.
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	20. Signing		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions	2	Signage to be provided at both ends of proposed works.
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	21. Lighting		Most or all of route is unlit	Short and infrequent unlit/ poorly lit sections	Route is lit to highway standards throughout	1	Existing street lighting is focused on road, and not on the deep verge that the proposed shared cycle/footway will be provided in. Consideration to be given to pedestrian/cyclist specific lighting.
			22. Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length	2	Route is adjacent to Priors Road.

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	23. Impact on pedestrians, Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 6.1)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Leve remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A	2	Proposals not anticipated to impact on pedestrian comfort levels, and existing comfort levels are A, with plenty of space for pedestrians.
	Minimise street clutter	Signing required to support scheme layout	24. Signs informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/ or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.	2	Signage provided for wayfinding purposes only at both ends of route.
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on-street	25. Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure non overlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand	0	No cycle parking provided, though trip attractors along area of proposed works.
	Audit Score Total							**37/50**	**74%**

2. The proposed scheme scores 74%, above the minimum score required under CLoS of 70%. It is therefore considered that the proposed scheme is appropriate to be implemented.

Appendix 14



Site Boundary (indicative only)

Bus Stop

400/800m Radius of Bus Stops

Policy H1: Priors Farm Fields (HD7)

NOTE:
Robert Hitchins Illustrative Masterplan
Dwg. No. 333.P.3.9 Rev E

PFA consulting

Stratton Park House
Wanborough Road
Swindon
SN3 4HG

T 01793 828000
F 01793 835500
E admin@pfaplc.com
W www.pfaplc.com

Client: **Robert Hitchins Ltd**

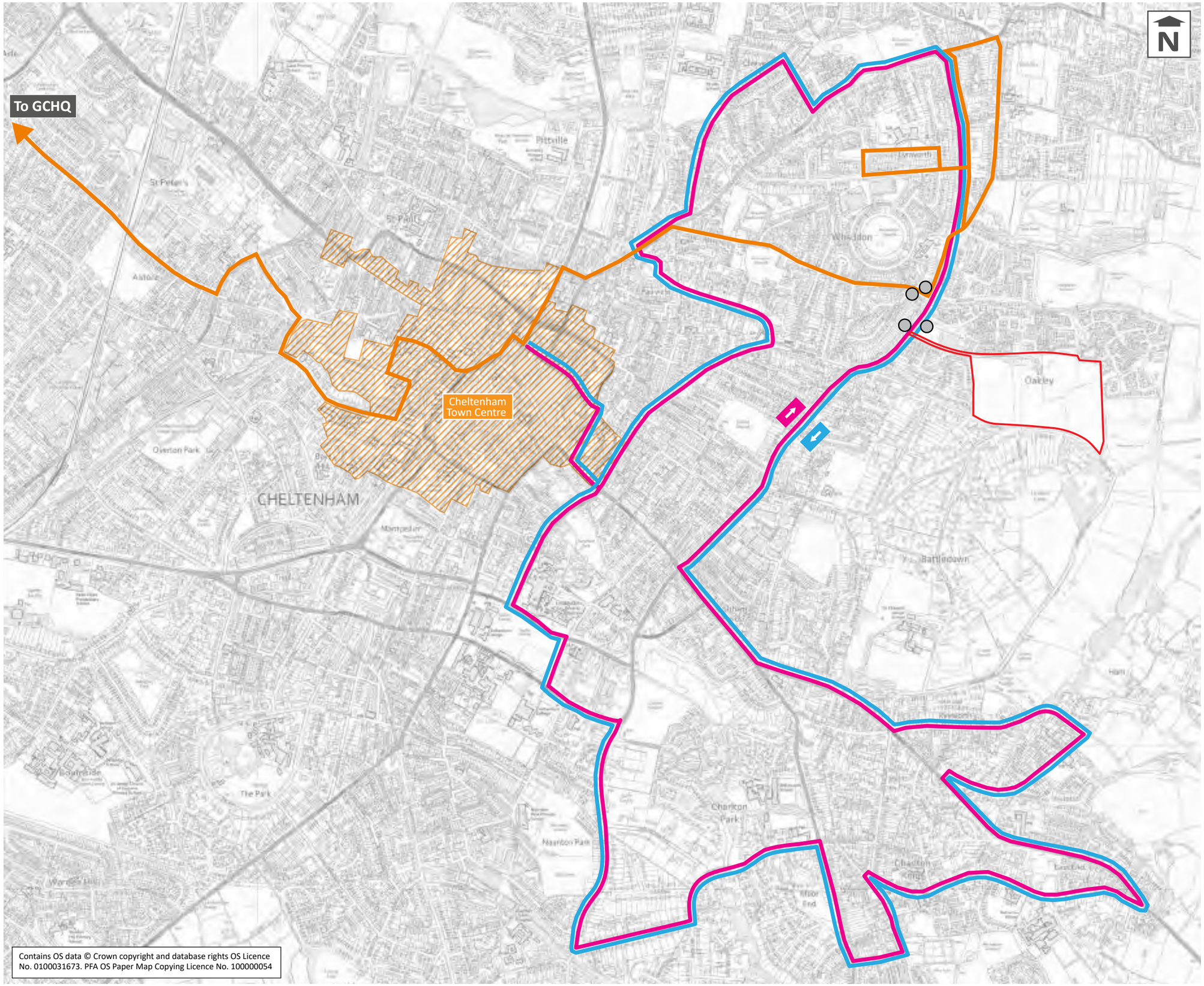
Project: **Land at Oakley Farm, Battledown, Cheltenham**

Figure Title: **400m/800m Catchment Areas**

Figure No: **Figure 3**

Date	June 2021
Drawn By	GT
Checked By	JA
Scale	See scale bar
File Ref	H628/Figs/Appeal/Fig 3.ai
Doc Ref	H628/Appeal

Appendix 15



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Site Boundary (indicative only)

Bus Routes

- Service A
- Service Q Circular
- Service P Circular
- Bus Stops

0 500m

Client

Robert Hitchins Ltd

Project

Land at Oakley Farm, Battledown, Cheltenham

Figure Title

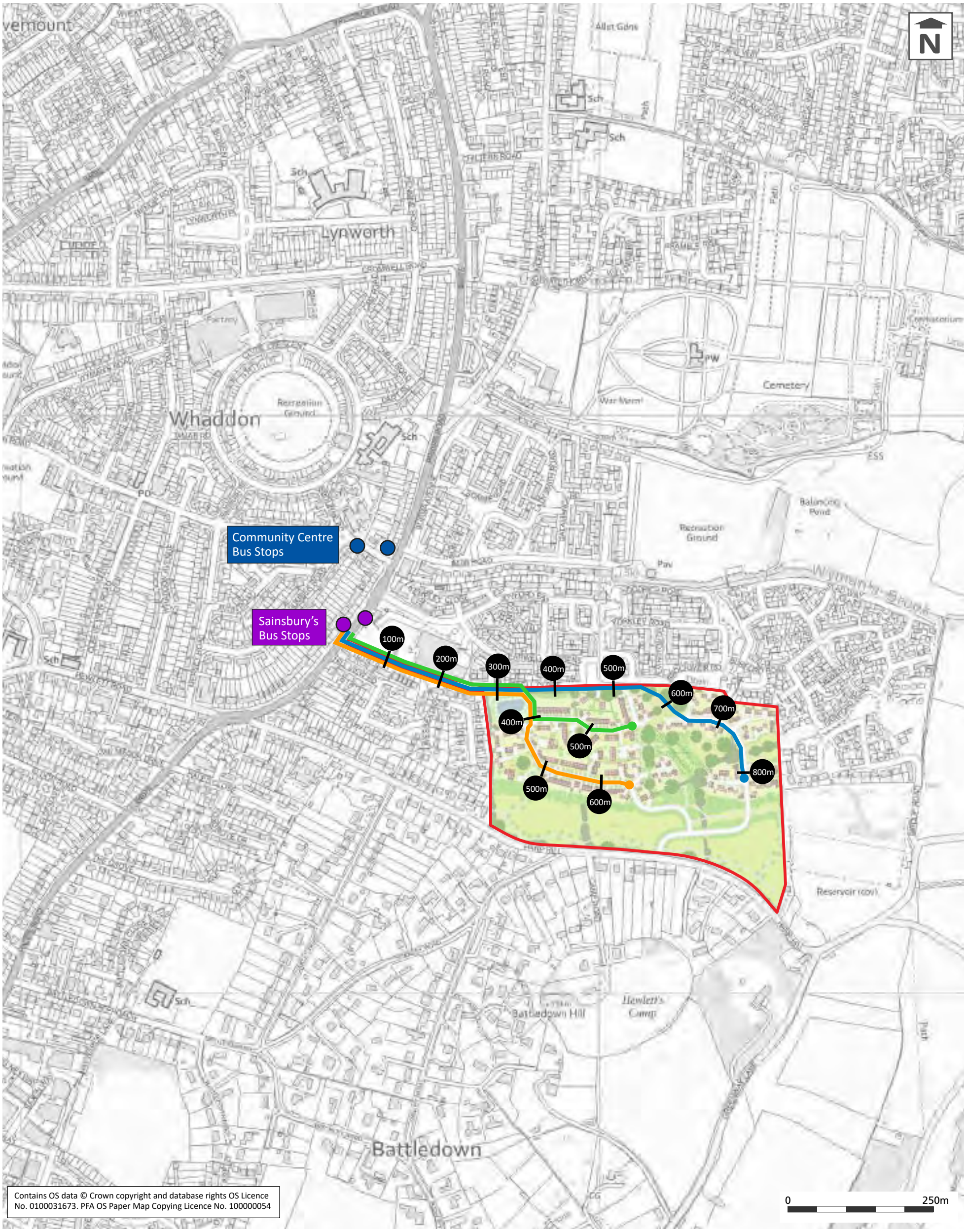
Existing Bus Services

Figure No

Figure 4

Date	June 2021
Drawn By	GT
Checked By	JA
Scale	See Scale Bar
File Ref	P628/Figures/Appeal/Fig4.ai
Doc Ref	P628 Appeal

Appendix 16



Site Boundary (indicative only)

Bus Stops

Indicative walking routes to bus stops

NOTE:
Robert Hitchins Illustrative Masterplan
Dwg. No. 333.P.3.9 Rev E

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Project
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Figure Title
Door to Door Distances to Bus Stops on Priors Road

Figure No
Figure 5

Date	July 2021
Drawn By	GT
Checked By	JA
Scale	See scale bar
File Ref	H628/Figs/Appeal/Fig 5.ai
Doc Ref	H628/Appeal