

Road Safety Audit Stage 1

Junction Improvements

Brighton Hill Roundabout

Basingstoke

April 2019

Document reference: 01/308

Client reference: R.J507329.01

Road User Audit Team
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1 Introduction

- 1.1 This report results from a Stage 1 Road Safety Audit carried out on the proposed improvements to Brighton Hill roundabout in Basingstoke. This includes capacity improvements through the provision of additional lanes and traffic signal control to replace the existing give way arrangement. The provision for pedestrians and cyclists will also be upgraded. The audit has been carried out in accordance with the requirements specified in Hampshire County Council's Technical Guidance Note 18.
- 1.2 The Road Safety Audit Team membership was as follows: -
- | | |
|--------------------|-----------------------------------------------------------|
| Audit Team Leader: | Steve Willoughby MCIHT MSoRSA
Hampshire County Council |
| Audit Team Member: | Ross Rawlings MCIHT MSoRSA
Hampshire County Council |
- 1.3 The Road Safety Audit comprised an examination of the documents provided, as listed in the Road Safety Audit Brief. The Audit Team visited the site together, on 10th April 2019 at 10:15am. During the visit the weather was fine and dry. Traffic conditions were free flowing.
- 1.4 The Road safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.
- 1.5 All problems described in this report are considered by the Audit Team to require action in order to improve the safety of the scheme.
- 1.6 All references to diagram numbers refer to the Traffic Signs Regulations and General Directions 2016 (TSRGD).
- 1.7 The location of the problems identified are shown on the annotated plan.

2 Departure from Standard

- 2.1 All Departures from Standard are listed in the Road Safety Audit Brief.

3 Items raised at previous Road Safety Audits

- 3.1 The Audit Team has not been made aware of any previous road safety audits on this scheme.

4 Items raised at this Stage 1 Audit

4.1 Problem

Location: Throughout the scheme.

Summary: A lack of cycle infrastructure will increase the risk of collisions between cyclists and pedestrians/vehicles.

The proposed at-grade crossings will be toucans, but there is no cycle infrastructure to connect these crossings with any existing off-road cycle routes or provide a link to the existing road network. As a result, cyclists may carry out undesirable manoeuvres which could lead to collisions with vehicles or pedestrians.

Recommendation: Provide a coherent network of off-carriageway cycle links that connect the proposed toucan crossings to the strategic cycle network.

4.2 Problem

Location: The proposed segregated cycleway/footway on the A30 Winchester Road (east) and Brighton Way.

Summary: An incomplete cycle network will result in cyclists carrying out undesirable manoeuvres that may lead to collisions with vehicles or pedestrians.

There are proposed sections of segregated footway/cycleway on both sides of Winchester Road (east) and on the east side of Brighton Way, but these do not connect with any existing off- road cycle routes and there are no transitions to and from the carriageway. As a result, cyclists may continue along the footway or rejoin the carriageway at undesirable locations. This could lead to collisions with pedestrian or vehicles.

Recommendation: Provide a coherent cycle network.

4.3 Problem

Location: The existing safety fencing around the outside of Brighton Hill roundabout.

Summary: Sections of safety fencing will have to be removed to facilitate the at-grade crossings.

There is existing safety fencing around the outside of the roundabout to prevent vehicles from entering the steep drops to the subway ramps. If the safety fencing is removed to facilitate the at-grade crossings, there is a risk of errant vehicles entering these areas which could increase the severity of a collision.

Recommendation: Provide appropriate measure to protect vehicles from the steep drops.

4.4 Problem

Location: The proposed ramp to the crossing on A30 Winchester Road (west)

Summary: The proposed ramp will be too steep for mobility impaired pedestrians to negotiate.

From a visual assessment, it looks as though the proposed ramp to the crossing on A30 Winchester Road (west) will be much steeper than the maximum recommended gradient for mobility impaired pedestrians. Wheelchair users may be unable to negotiate the ramp and there is a risk of tipping accidents.

Recommendation: The absolute maximum gradient of the ramp should be 1 in 12, but preferably no greater than 1 in 20. If this cannot be achieved, an alternative arrangement should be considered.

4.5 Problem

Location: The proposed ramp to the south side of the crossing on old Winchester Road.

Summary: The proposed ramp may be too steep for mobility impaired pedestrians to negotiate.

From a visual assessment, it looks as though the proposed ramp to the crossing on old Winchester Road will be steeper than the maximum recommended gradient for mobility impaired pedestrians. Wheelchair users may be unable to negotiate the ramp and there is a risk of tipping accidents.

Recommendation: The absolute maximum gradient of the ramp should be 1 in 12, but preferably no greater than 1 in 20. If this cannot be achieved, an alternative arrangement should be considered.

4.6 Problem

Location: The section of Western Way south of the new Camrose Link Road.

Summary: Difficult or inappropriate turning manoeuvres onto the new link road.

Traffic heading towards the A30 Winchester Road from the southern end of Western Way are prevented from turning right onto the new Camrose Link Road by an extended splitter island, and instead will have to turn left and then U-turn at the mini roundabout. It is unclear if vehicles, particularly Pizza Express delivery vehicles, are able to make this manoeuvre without being unduly restricted. There is also a risk of drivers attempting to turn right directly onto the link road to avoid the roundabout which may result in collisions with other vehicles.

Recommendation: Review the access arrangement for the southern end of Western Way onto the new Camrose Link Road.

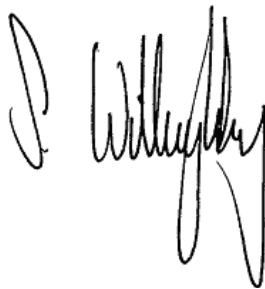
5 Audit Team Statement

We certify that the terms of reference of the audit are as described in HD 19/15.

Audit Team Leader

Steve Willoughby MICHT, MSoRSA, HE RSA Cert. Comp.
Principle Engineer
Road User Audit Team
Hampshire County Council

Signed:

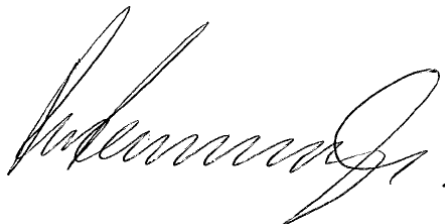


Date: 26/04/2018

Audit Team Member

Ross Rawlings MICHT, MSoRSA, HE RSA Cert. Comp.
Senior Engineer
Road User Audit Team
Hampshire County Council

Signed:



Date: 02/05/2019

Road Safety Audit Brief

Document Reference:

(For audit team use only)

01/308

Scheme Name:

Brighton Hill Roundabout, Basingstoke

Job Number:

R.J507329.01

**Road Safety Audit
Stage:**

(X as appropriate)

Feasibility (F)

Preliminary (1)

X

Detailed (2)

Combined (1/2)

As Built (3)

Site & Scheme Description

Brief Description of Scheme:

Brighton Hill Roundabout is a large six arm roundabout located on the A30 SW Corridor in Basingstoke. The junction not only suffers from congestion during traditional AM and PM weekday peak periods, but is also busy on Saturdays. Pedestrian facilities at the roundabout are generally grade separated with subways under the circulatory carriageway, linking into the centre of the roundabout. Ramps link into the subways although these are not DDA compliant. Some quieter arms (e.g. Western Way) have at grade crossing facilities. There is no specific provision for cyclists at the roundabout, either on or off carriageway.

The scheme currently comprises of an intention to increase the capacity of the Brighton Hill roundabout through provision of additional lanes and traffic signal controls to replace the existing Give Way arrangements. It is also intended that the provision for pedestrians and cyclists will be upgraded.

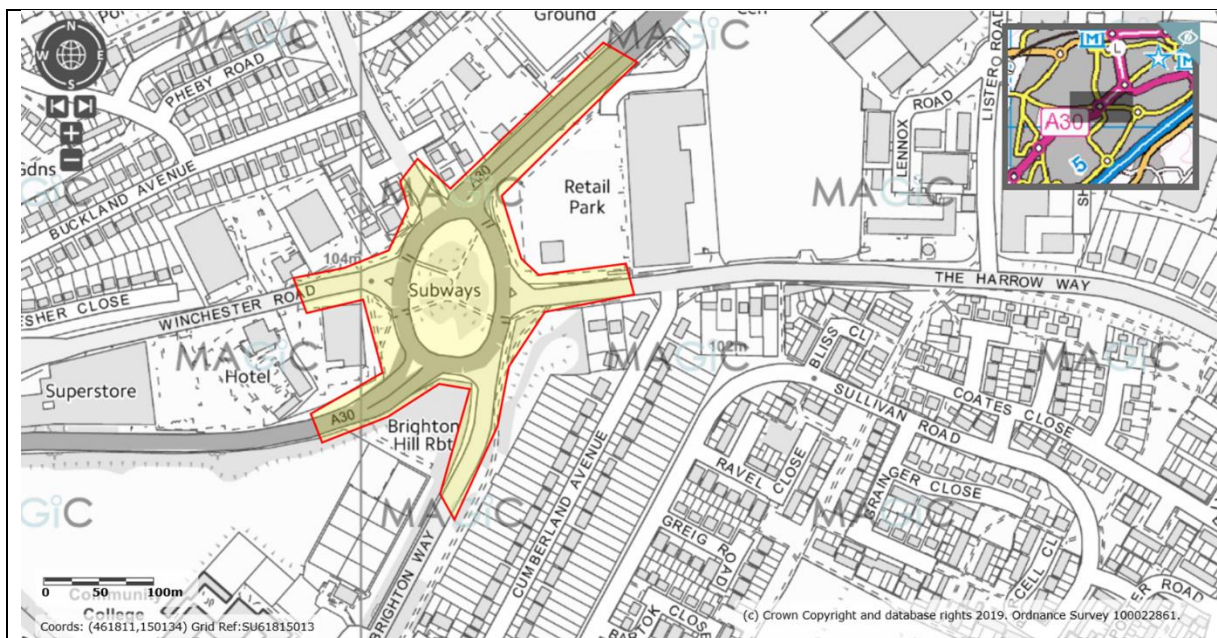


Fig 1: Scheme Extents

Design Speed:

Table 1: Design speed of various arms of Brighton Hill Roundabout

A30 Winchester Road (North)	40 mph
The Harrow Way	30 mph
Brighton Way	30 mph
A30 Winchester Way (South)	30 mph
Winchester Road (West)	30 mph
Western Way	30 mph

Speed Limit:

Table 2: Speed Limit of various arms of Brighton Hill Roundabout

A30 Winchester Road (North)	40 mph
The Harrow Way	30 mph
Brighton Way	30 mph
A30 Winchester Way (South)	30 mph
Winchester Road (West)	30 mph
Western Way	30 mph

Existing Traffic Flows:

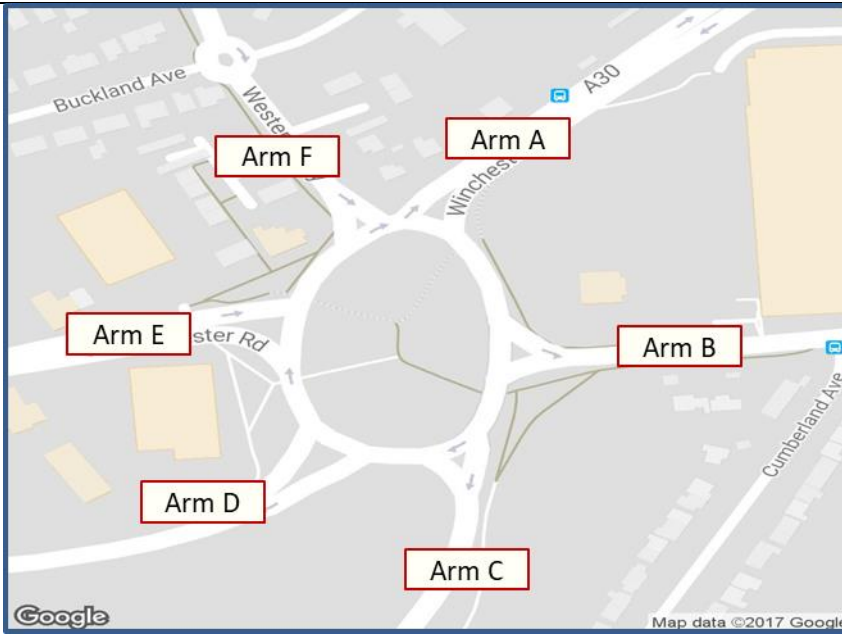


Fig 2: Figure showing various arms of Roundabout

		Arm Destination						
Arm Origin		A	B	C	D	E	F	Total
	A	2	78	1244	2256	559	364	4503
	B	8	0	135	520	288	172	1123
	C	902	194	0	287	453	199	2035
	D	1870	263	180	0	246	194	2753
	E	554	278	521	125	0	117	1595
	F	158	144	412	200	14	0	928
Total		3494	957	2492	3388	1560	1046	

Fig 3: Traffic data for time 16:00 to 19:00

Existing NMU Flows:

Junction Improvements – Brighton Hill Roundabout, Basingstoke
 Stage 1 Road Safety Audit

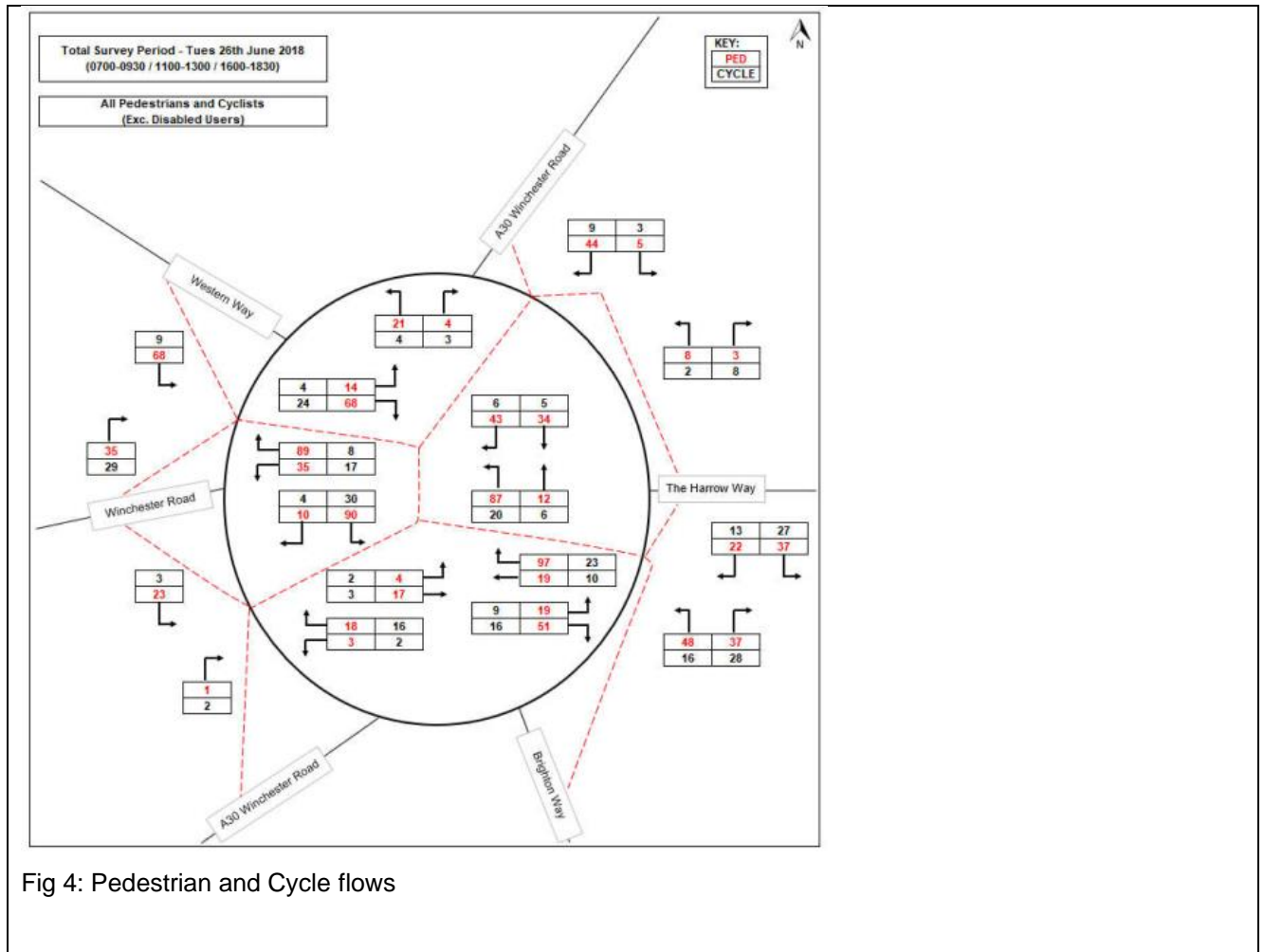


Fig 4: Pedestrian and Cycle flows

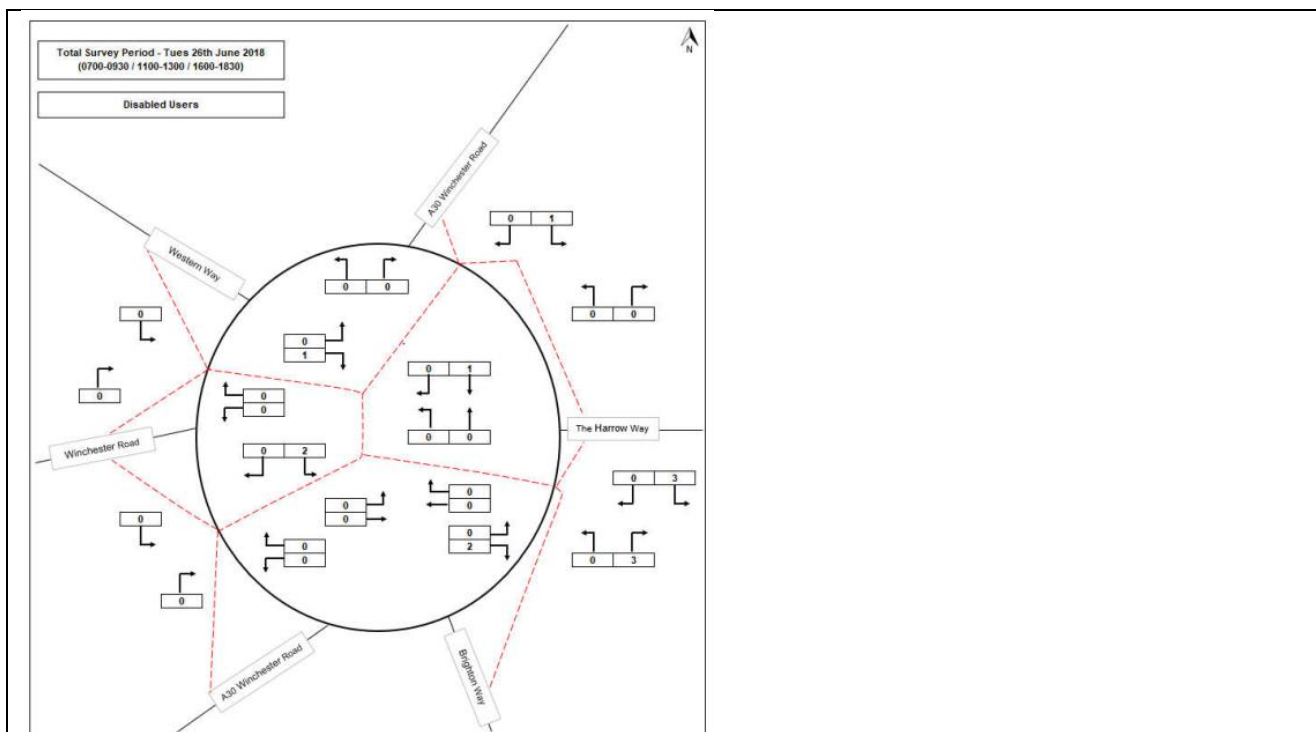


Fig 5: Disabled Users Flow

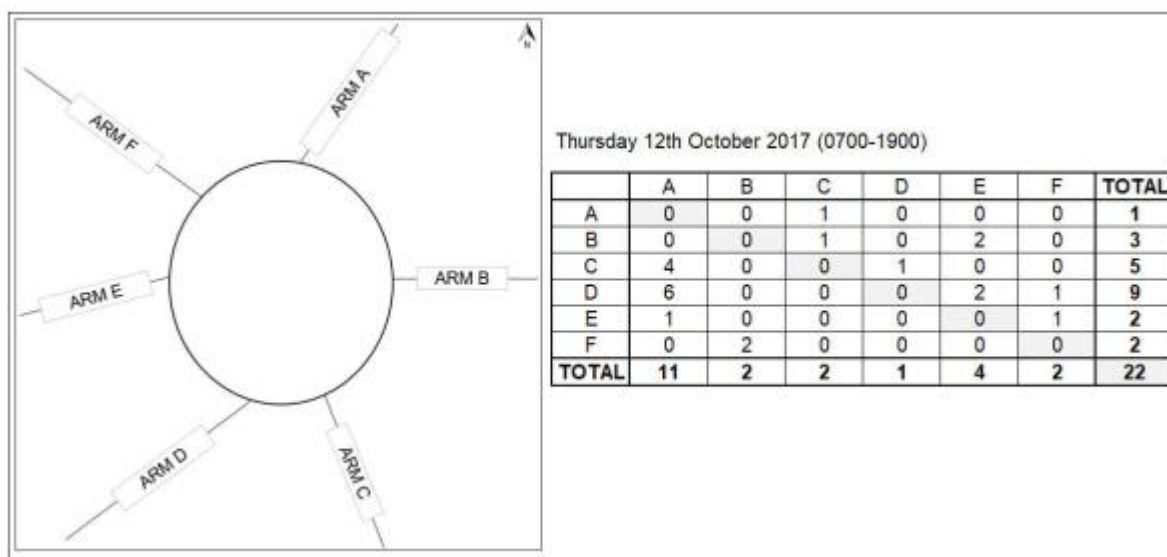


Fig 6: On-Carriageway Cyclists flow

Collision Data:

Collision data has been provided and covers the five-year period between 08/02/2013 – 17/05/2018. A broad analysis of the data is shown in Figure 7 below, to identify any issues or trends that may affect pedestrians, cyclists and equestrians.

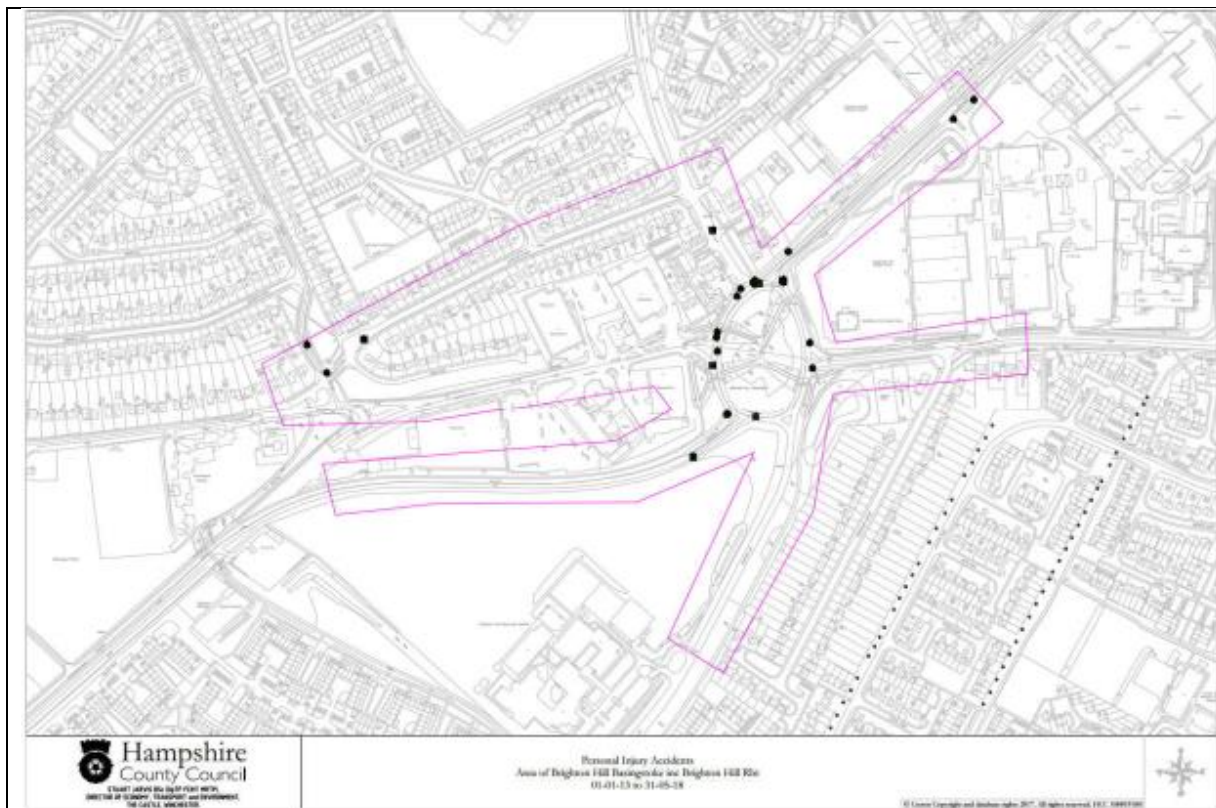


Fig 7: Collision Analysis

Table 3: Collision data

Collision Severity				Casualty Severity		
Year	Serious	Slight	Total	Serious	Slight	Total
2013	3	2	5	3	3	6
2014	4	6	10	4	8	12
2015	0	5	5	0	7	7
2016	0	3	3	0	3	3
2017	0	5	5	0	5	5
2018	0	2	2	0	3	3
Total	7	23	30	7	29	36

A total of 30 collisions have been reported in the vicinity of the Brighton Hill roundabout, comprising of:

- 7 serious; and
- 23 slights.

A total of 36 casualties were reported, 25 within motor vehicles (20 as a vehicle driver and five as a passenger), nine reported as motorcycle riders, with two pedal cyclist casualties reported (one serious and one slight). None of the collisions reported involved pedestrians or equestrians.

In terms of the collisions reported involving pedal cyclists, the serious collision involved a car travelling south along Western Way colliding with a pedal cyclist travelling around the roundabout. The slight collision reported that a car travelling eastbound on Winchester Road, pulled out onto the roundabout, colliding with a pedal cyclist travelling around the roundabout. Both collisions reported contributory factors of the car driver failing to look properly. The remaining vehicular collisions were reported as either rear shunts, driver losing control or collisions.

None of the collisions reported were fatal, however, the congestion and the incidences of collisions concentrated in the vicinity of the roundabout, may be deterring use of the area by on-carriageway cyclists. There are however shared use paths and subways available to negotiate the roundabout by pedal cyclists and pedestrians alike.

Environmental Constraints:

There are protected trees which border Brighton Hill Retail Park adjacent to the north eastern subway as well as three protected trees in the centre of the island; the two small southern-most trees (London Planes) and one at the top of the south-western subway footpath.

Nearby Schools:

The nearest school is Brighton Hill Community School situated on Brighton Way, approximately 400m from the roundabout. There are also a number of retail outlets including Brighton Hill Retail Park, Pizza Express and Halfords.

Bus Stops:

There are bus stops located close to Brighton Hill roundabout on Winchester Road and the Harrow Way (as shown in Figure 8). They all have footway access and flag signs.

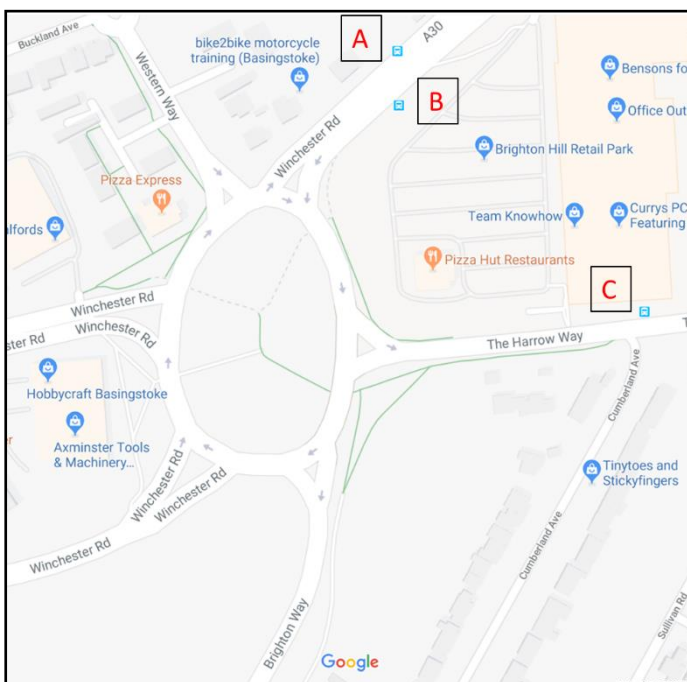


Fig 8: Location of Existing Bus Stops

The bus lay-by on S-W bound carriageway on A30 Winchester Road (B in picture above) has been changed to on-street bus stop.

Other bus-stops have been kept in their existing conditions.

Railway Stations:

N/A - Basingstoke Railway Station, is the nearest railway station, located approximately 2 miles away.

Traffic Signals:

There are currently no signals within the junction. All the arms of the roundabout are un-signalised along with the two existing NMU crossings.

Departures & Relaxations from Standards

Please see attached Compliance/ Non-Compliance Report.

List of included documents and drawings

1. General Arrangement: HCCSPCO-ATK-HGN-C357-DR-CH-000001_P02.pdf
2. Compliance/ Non-Compliance Report: HCCSPCO-ATK-HGN-C357-RP-CH-000001
3. Camrose Link Road: HCCPCO-ATK-HGN-C357-DR-CH-000005

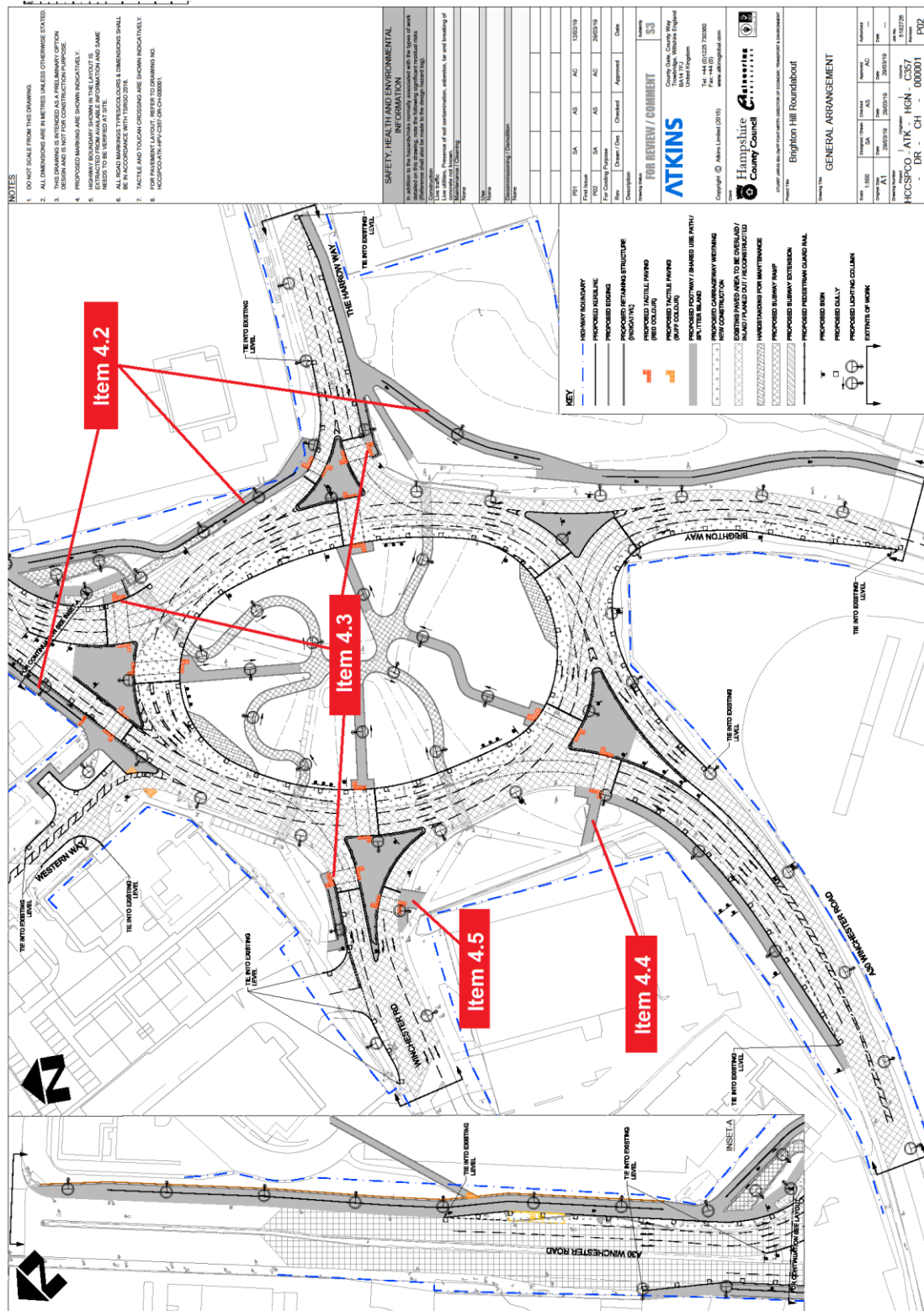
Name: Abhishek Kumar Singh

Position: Senior Assistant Engineer

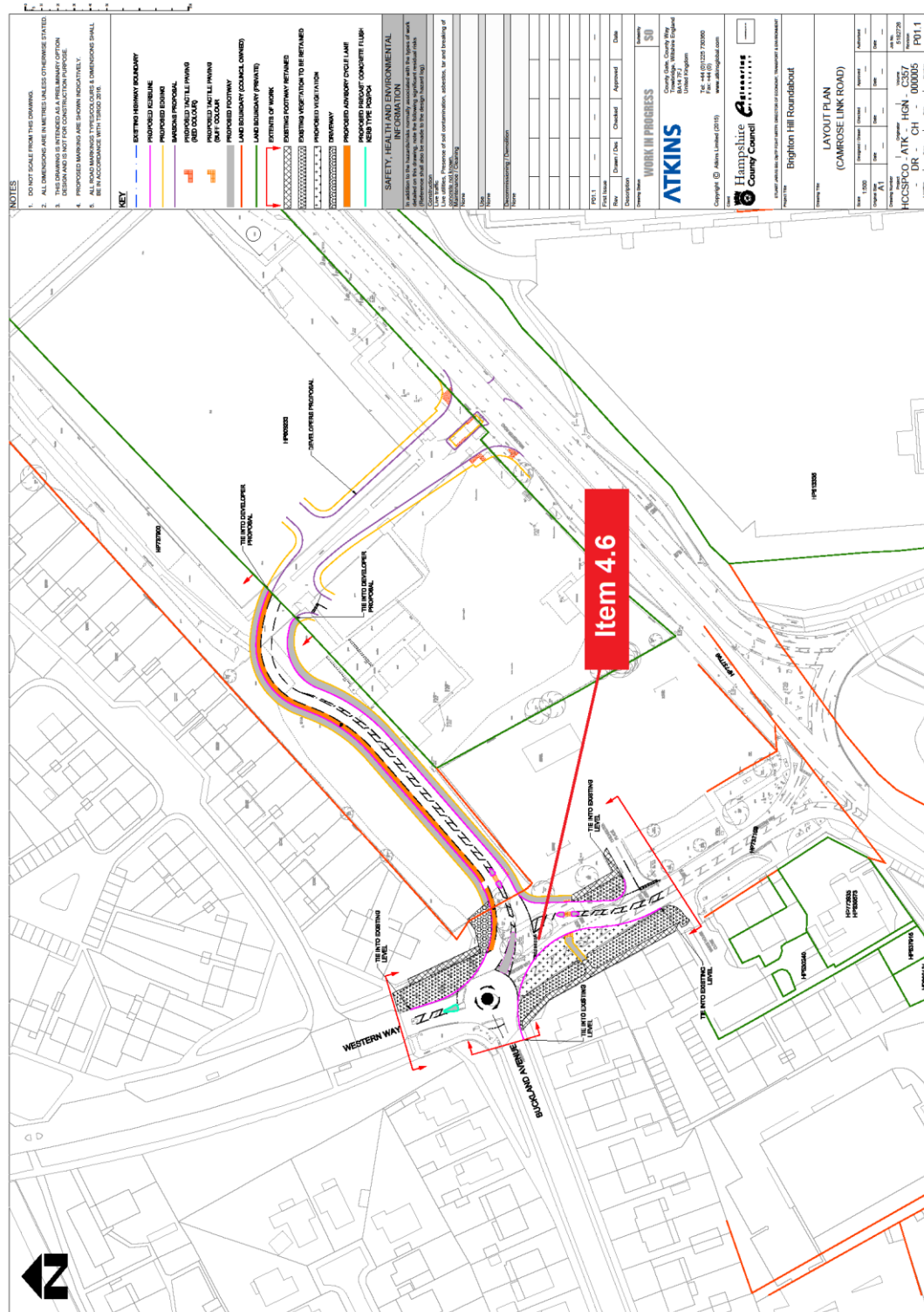
Signed 

Date: 05/04/2019 Email address: abhishek.singh@atkinsglobal.com

Annotated Plan



Junction Improvements – Brighton Hill Roundabout, Basingstoke Stage 1 Road Safety Audit



Road Safety Audit Response Report

All the problems raised by the Road Safety Audit Team should be given due consideration.

Item No.	Problem Accepted (yes/no)	Recommendation Accepted (yes/no)	Designers Response
4.1			
4.2			
4.3			
4.4			
4.5			
4.6			

In accordance with Technical Guidance Note 18, should any of the problems and/or recommendations not be accepted, an Exception Report will be required. If there is more than one exception, then each must be considered and approved separately.

Prepared by:

Signed:..... (Design Team Leader)

Date:.....

Approved by:

Signed:.....(Project Sponsor)

Date:.....