M3 Junction 9 Improvement

Scheme Number: TR010055

8.17.1 Applicant Response to the Examining Authority's Second Written Questions (ExQ2) - Appendices

APFP Regulations 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Volume 8

22 September 2023

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M3 Junction 9 Improvement
Development Consent Order 202[x]

8.17.1 Applicant Response to the Examining Authority's Second Written Questions (ExQ2) Appendices

Regulation Number:	5(2)(q)
Planning Inspectorate Scheme Reference:	TR010055
Application Document Reference:	8.17.1
BIM Document Reference:	HE551511-VFK-GEN-XXXX_XX-RP-IM-40001
Author:	M3 Junction 9 Improvement Project Team, National Highways

Version	Date	Status of Version
Rev 0	22 September 2023	Deadline 5 Submission

Contents

Appendices

1 Introduction

1.1.1 This document contains the Appendices to the **Applicant Response to the Examining Authority's Second Written Questions (ExQ2) (Document Reference 8.17)** submitted at Deadline 5 which contains the Applicant's response to the Examining Authority (ExA)'s second written questions. The written questions were published on the Planning Inspectorate website on 25 August 2023.

1.1.2 For defined terms and abbreviations, please refer to **Section 12** of the **Introduction to the Application (1.3, Rev 5)**.

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Appendix A ExA WQ2 1.2.2 – Figures

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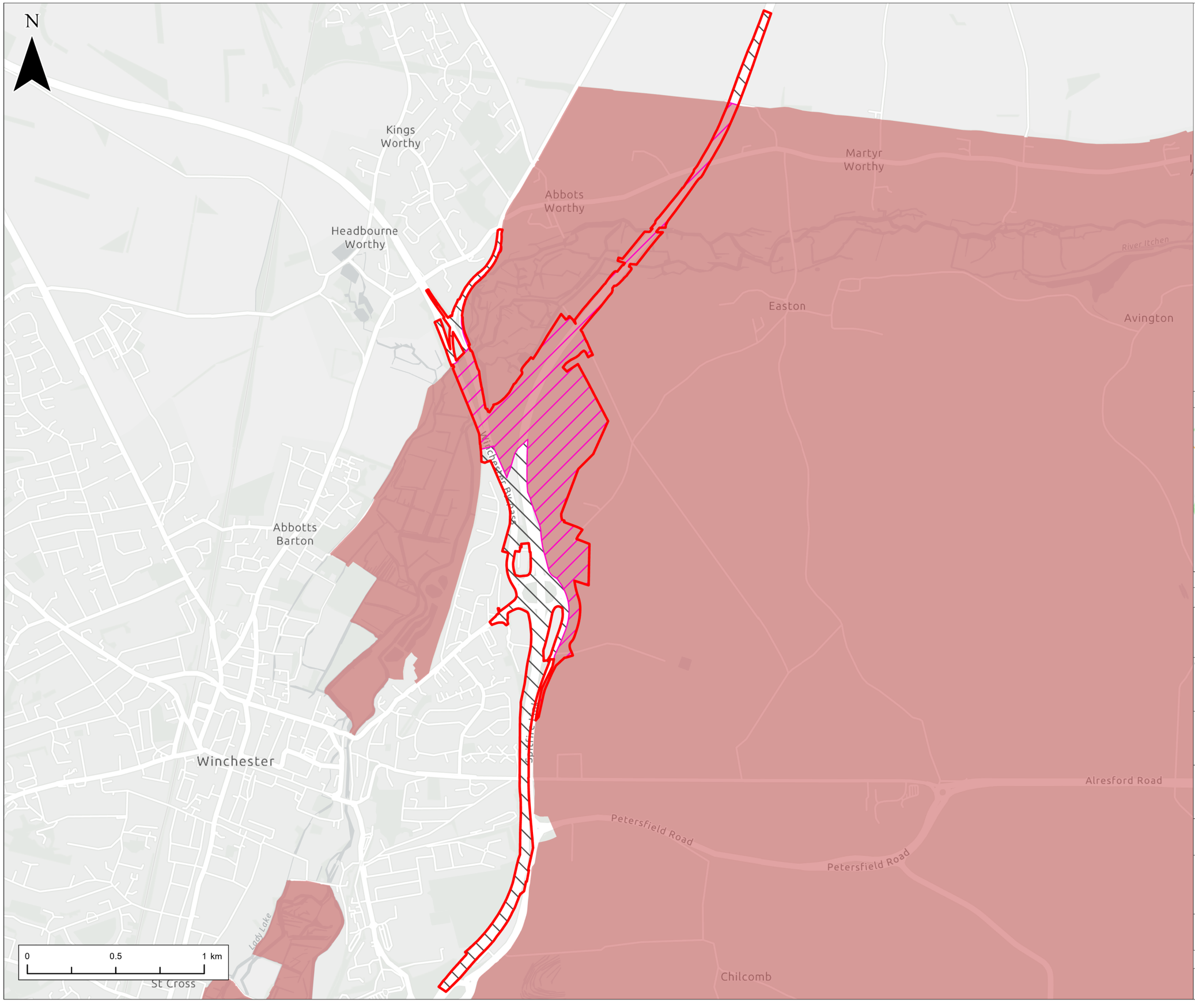
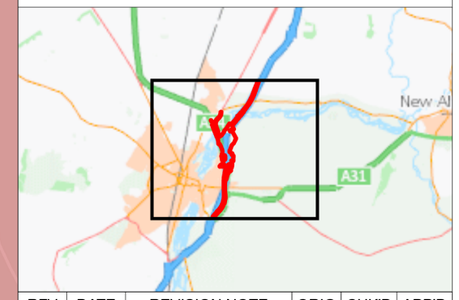


NOTES
1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
2. Quantum (area / length identified in the Legend) is the total across the Scheme

Legend

- South Downs National Park
- Application Boundary
- Application Boundary within South Downs National Park (68.04ha)
- Application Boundary outside South Downs National Park (41.67ha)

REFERENCE MAP



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0	September 2023	DEADLINE 5 SUBMISSION	TL	AC	SB

DESIGNER
Stantec

CONTRACTOR
VolkerFitzpatrick

CLIENT
national highways

PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 1: APPLICATION BOUNDARY RELATIONSHIP TO SOUTH DOWNS NATIONAL PARK

SUITABILITY
DEADLINE 5 SUBMISSION

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DRAWING NUMBER
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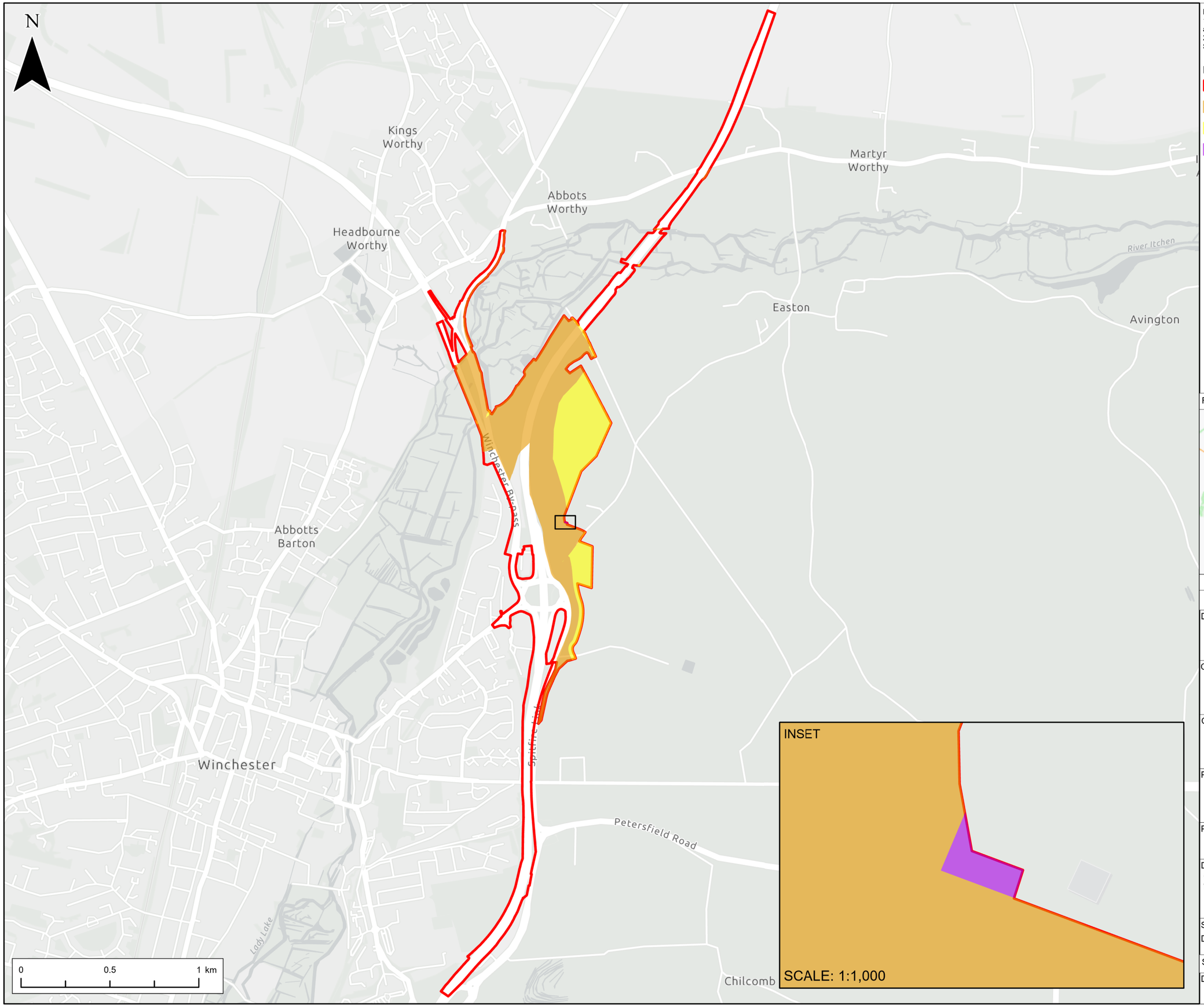
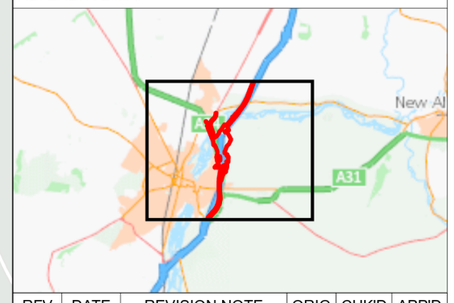


NOTES
1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
2. Quantum (area / length identified in the Legend) is the total across the Scheme

Legend

- Application Boundary
- Land to be acquired permanently (41.95ha)
- Land to be used temporarily (17.15ha)
- Land to be used temporarily and rights to be acquired permanently (0.02ha)

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

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PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 2: LAND ACQUISITION ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK

SUITABILITY
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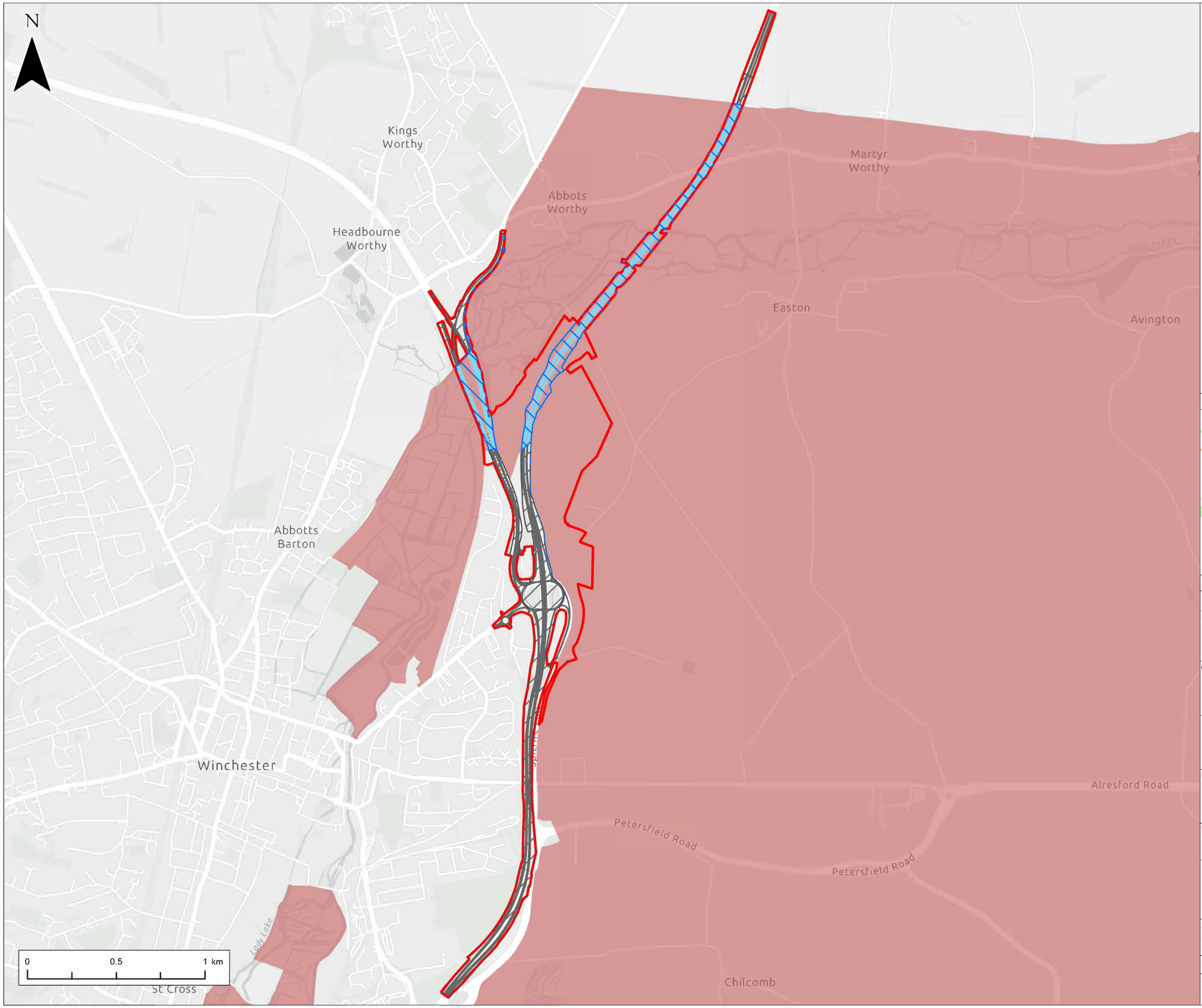

NOTES
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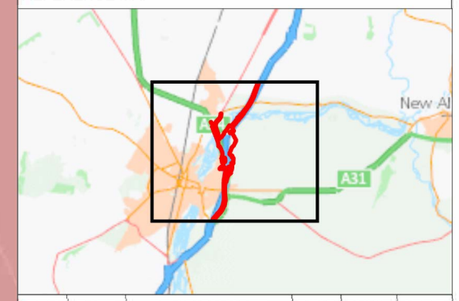
2. Quantum (area / length identified in the Legend) is the total across the Scheme

Legend

- Application Boundary
- South Downs National Park
- Existing Carriageway within South Downs National Park (8.68ha)
- Existing Highway Boundary within South Downs National Park (19.59ha)
- Existing Carriageway outside South Downs National Park (20.51ha)
- Existing Highway Boundary outside South Downs National Park (33.74ha)

Existing carriageway data is taken from the UK Habitat survey of the Scheme.

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 3A: EXISTING HIGHWAY

SUITABILITY
DEADLINE 5 SUBMISSION

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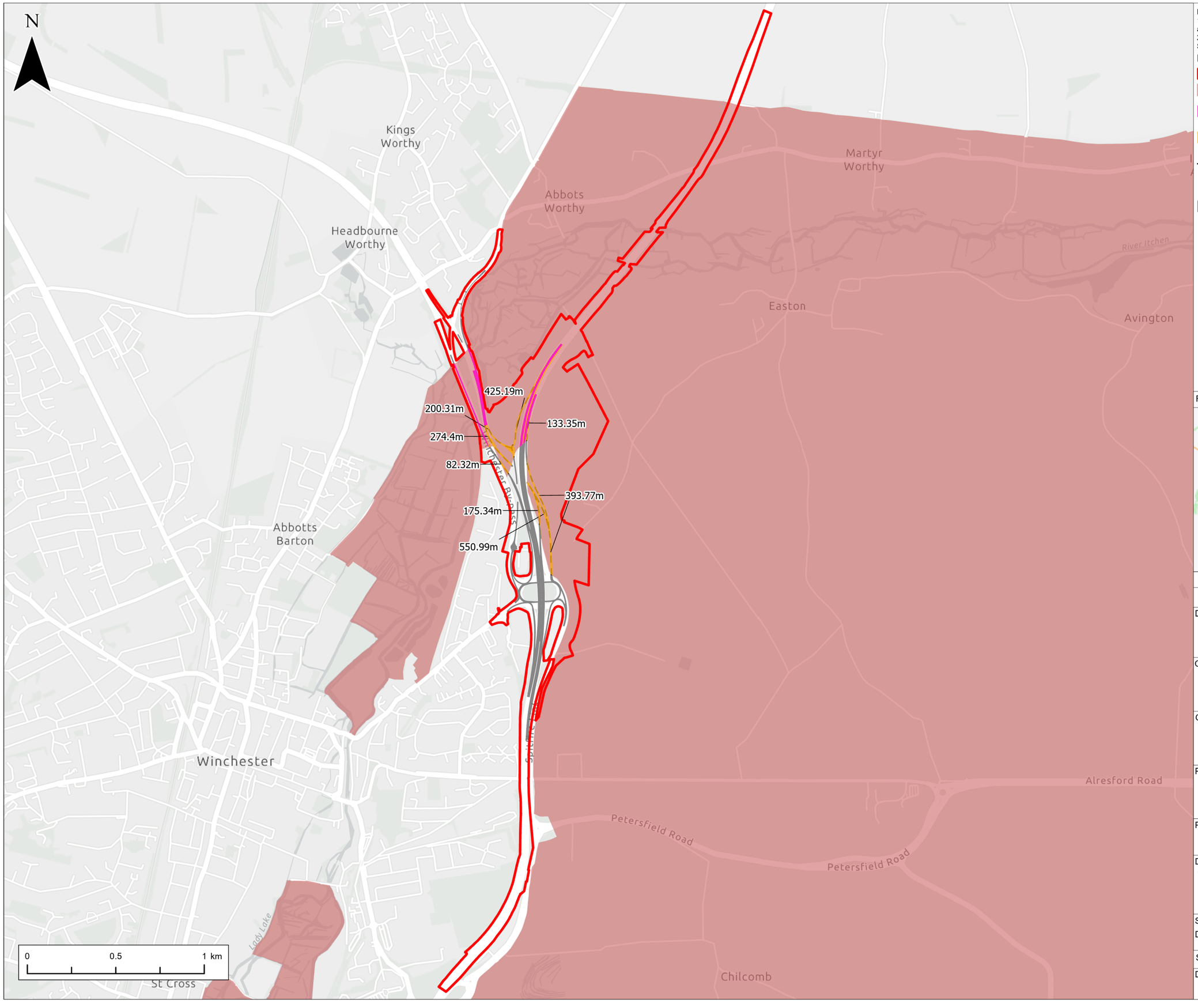

NOTES
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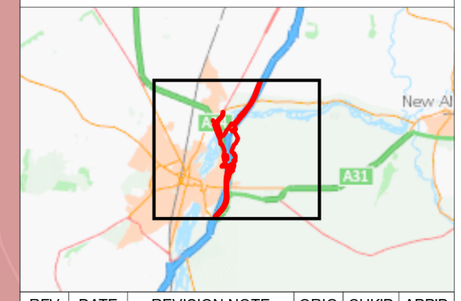
Legend

- Application Boundary
- South Downs National Park
- Modified Existing Carriageway within South Downs National Park (2.25ha)
- Proposed New Carriageway within South Downs National Park (2.46ha)
- Length of Proposed Carriageway within South Downs National Park (2,235.70m)
- Proposed Carriageway outside South Downs National Park (9.13ha)

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 3B: PROPOSED CARRIAGEWAY

SUITABILITY
DEADLINE 5 SUBMISSION

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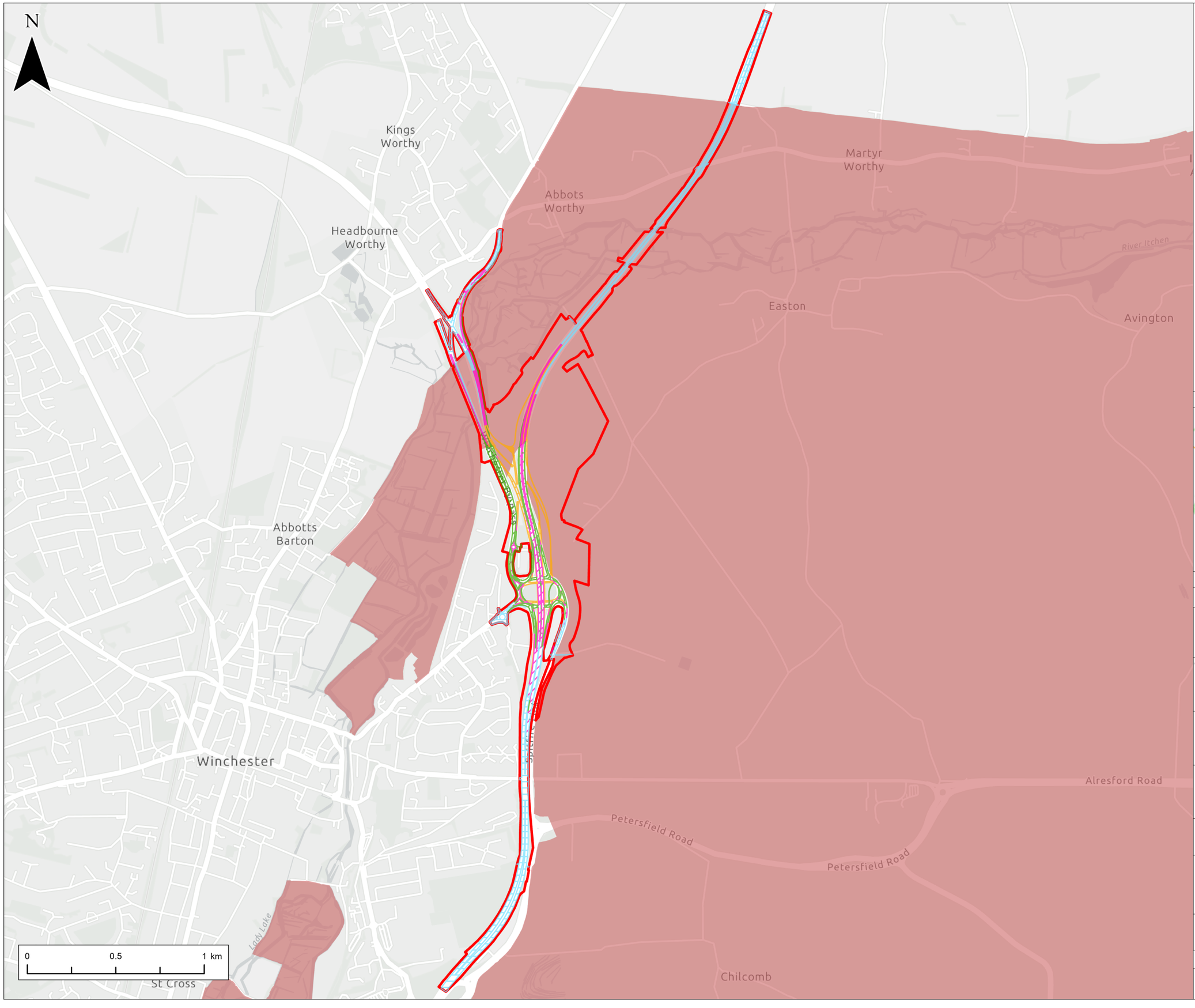
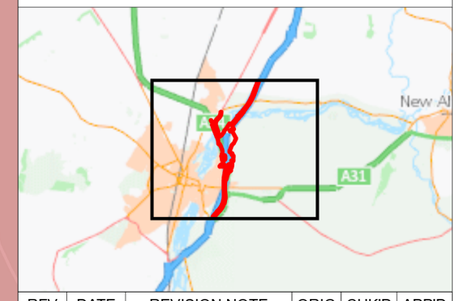


NOTES
1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
2. Quantum (area / length identified in the Legend) is the total across the Scheme

Legend

- Application Boundary
- South Downs National Park
- Existing Carriageway unaffected within South Downs National Park (5.51ha)
- Modified Existing Carriageway within South Downs National Park (2.25ha)
- Proposed New Carriageway within South Downs National Park (2.46ha)
- Existing Carriageway removed within South Downs National Park (0.89ha)
- Existing Highway unaffected outside South Downs National Park (10.39ha)
- Modified Existing Carriageway outside South Downs National Park (6.91ha)
- Proposed Carriageway outside South Downs National Park (2.22ha)
- Existing Carriageway removed outside South Downs National Park (3.28ha)

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 3C: ANALYSIS OF DIFFERENCE BETWEEN EXISTING AND PROPOSED CARRIAGEWAY

SUITABILITY
DEADLINE 5 SUBMISSION

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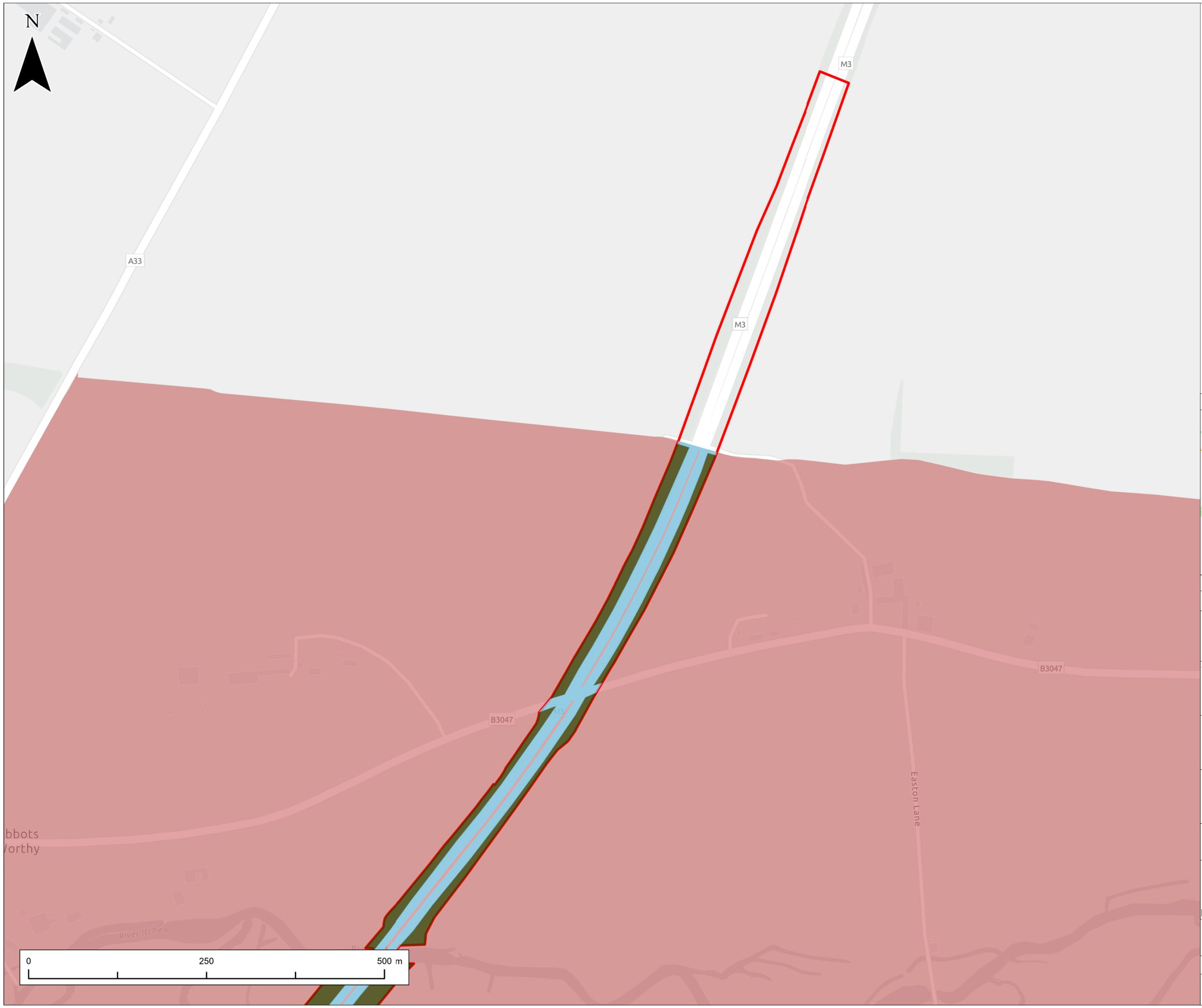

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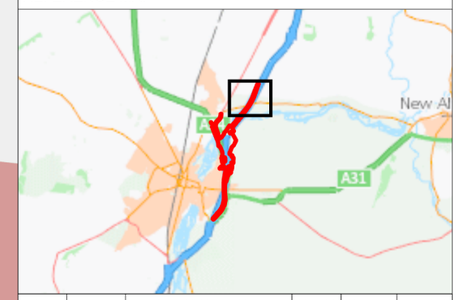
Legend

- Application Boundary
- South Downs National Park
- Existing Carriageway unaffected within South Downs National Park (5.51ha)
- Retained Habitats within South Downs National Park (11.27ha)

REFERENCE MAP



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M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 4: PROPOSED LAND USE ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK
Page 1 of 6

SUITABILITY
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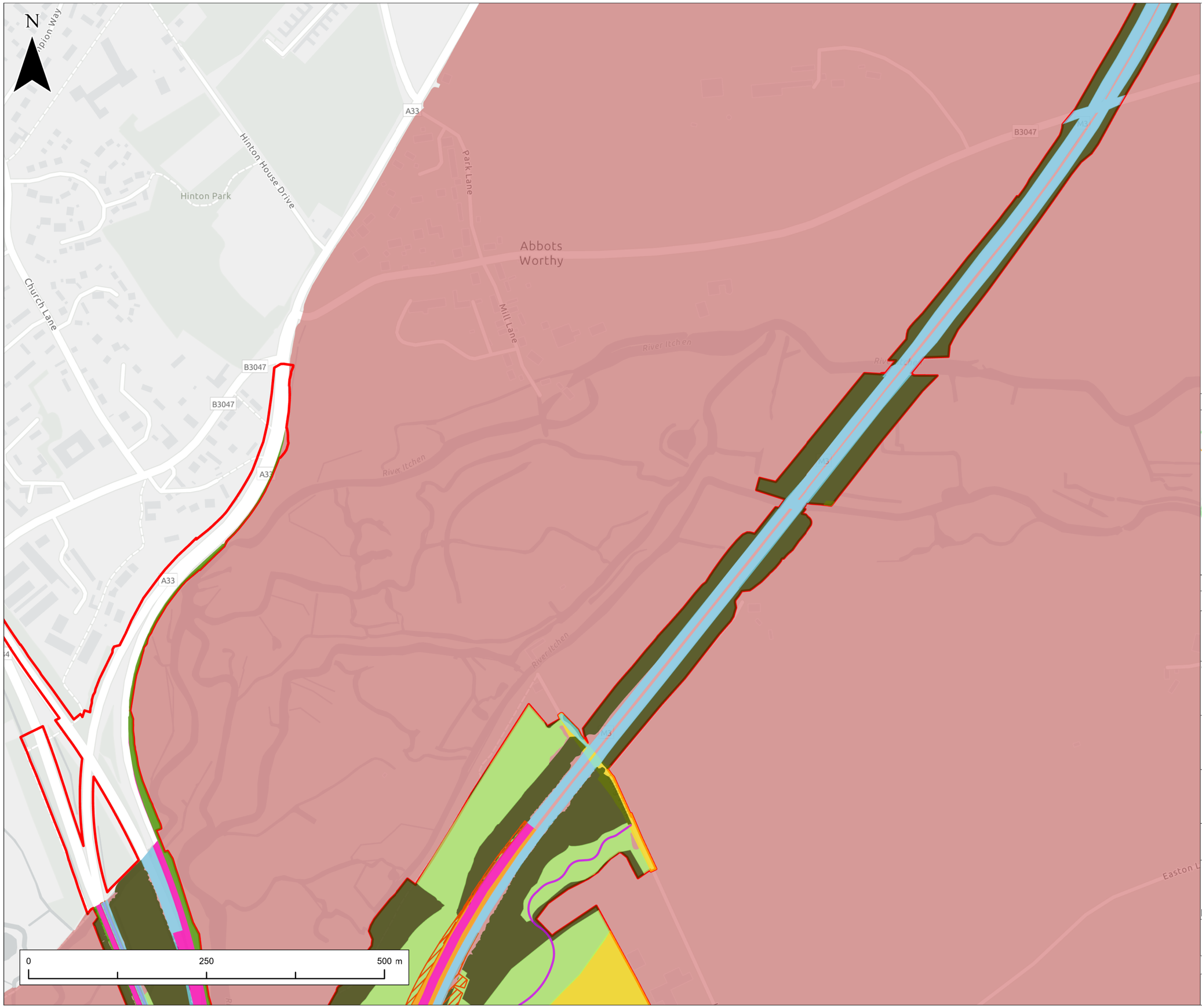

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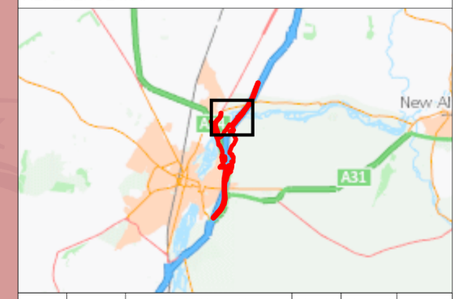
- Existing Carriageway removed within South Downs National Park (0.89ha)
- Land Temporarily Acquired and Returned to Previous Land Use (17.15ha)
- Associated Highway Infrastructure within South Downs National Park (9.18ha)
- Environmental Proposals within South Downs National Park (28.02ha)
- Retained Habitats within South Downs National Park (11.27ha)
- Proposed Footway/Proposed Walking/Cycling/Horse-riding Route within South Downs National Park (0.59ha)

REFERENCE MAP



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DESIGNER
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CONTRACTOR
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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 4: PROPOSED LAND USE ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK
Page 2 of 6

SUITABILITY
DEADLINE 5 SUBMISSION

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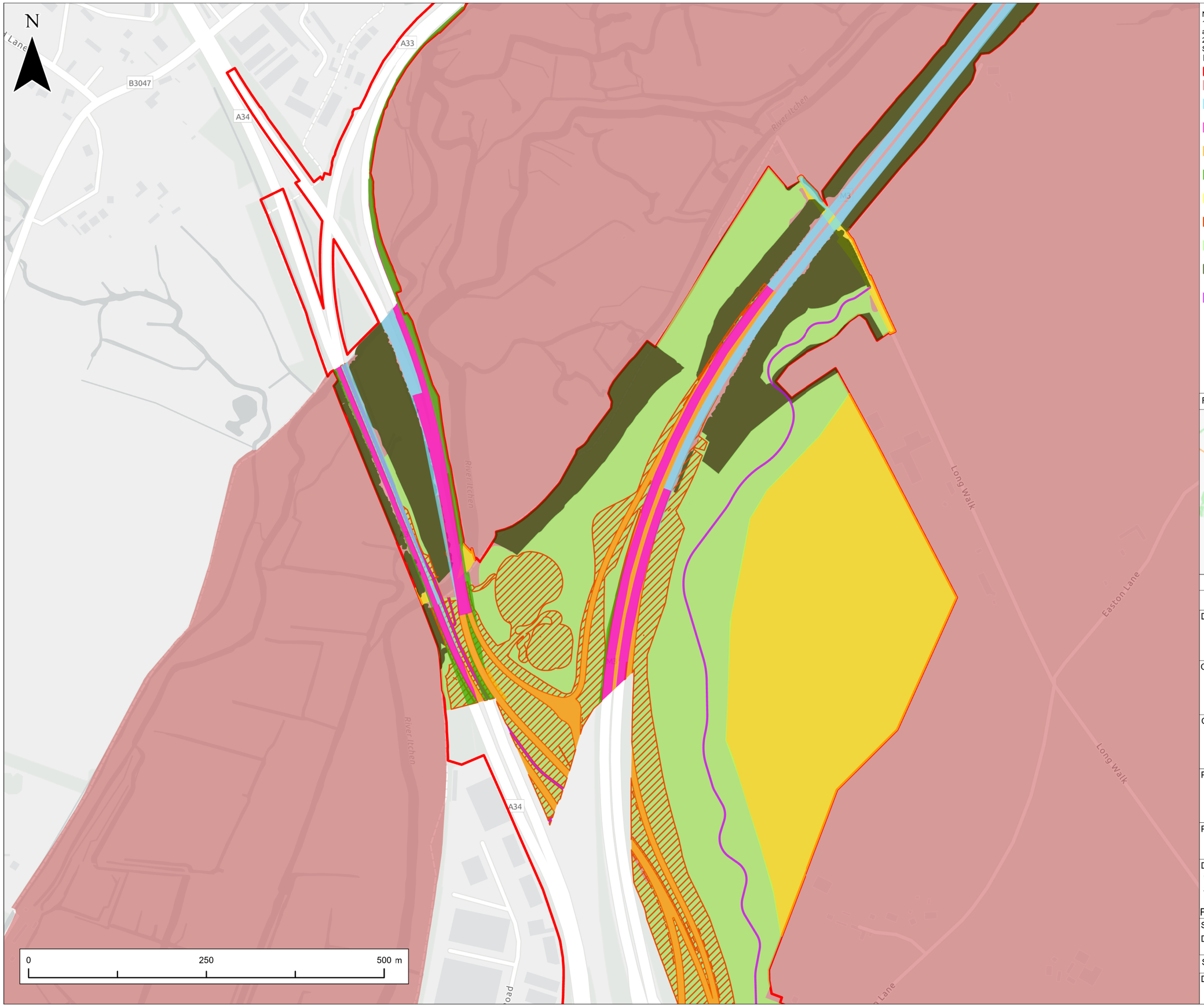

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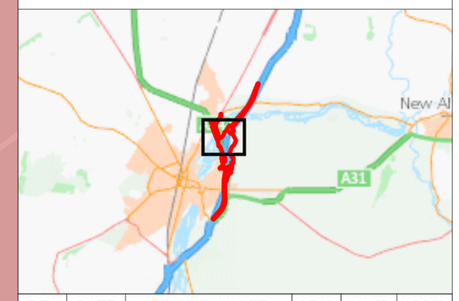
- Retained Habitats within South Downs National Park (11.27ha)
- Proposed Footway/Proposed Walking/Cycling/Horse-riding Route within South Downs National Park (0.59ha)

REFERENCE MAP



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DESIGNER
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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 4: PROPOSED LAND USE ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK
Page 3 of 6

SUITABILITY
DEADLINE 5 SUBMISSION

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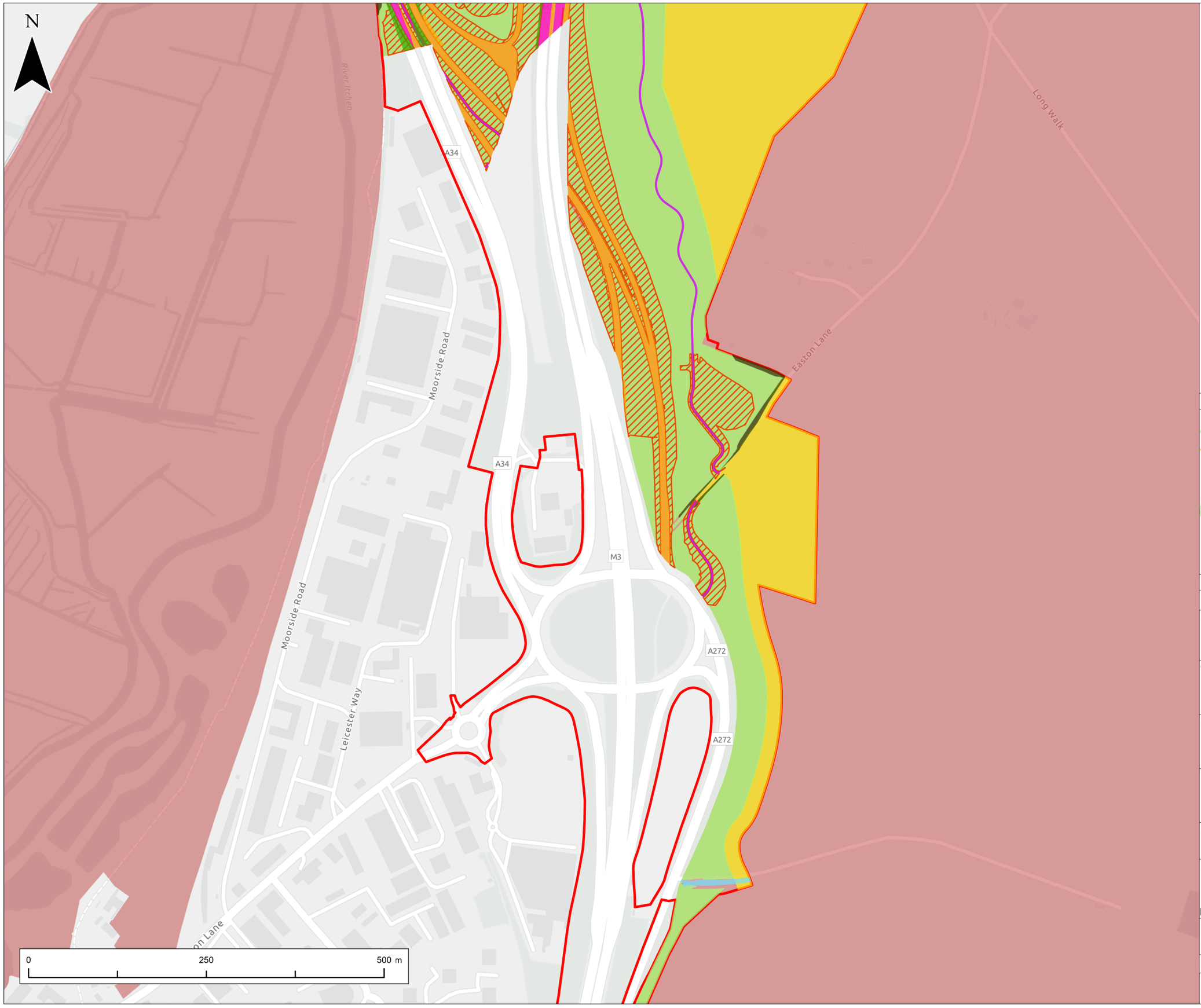

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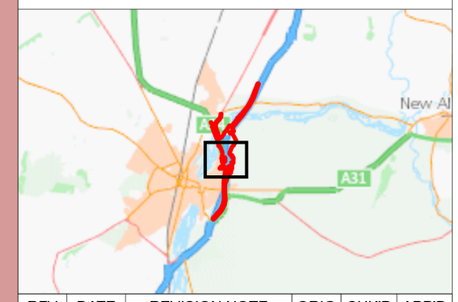
- Retained Habitats within South Downs National Park (11.27ha)
- Proposed Footway/Proposed Walking/Cycling/Horse-riding Route within South Downs National Park (0.59ha)

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 4: PROPOSED LAND USE ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK
Page 4 of 6

SUITABILITY
DEADLINE 5 SUBMISSION

SHEET SIZE: A3 | SCALE: 1:5,000 | STATUS: REV 0

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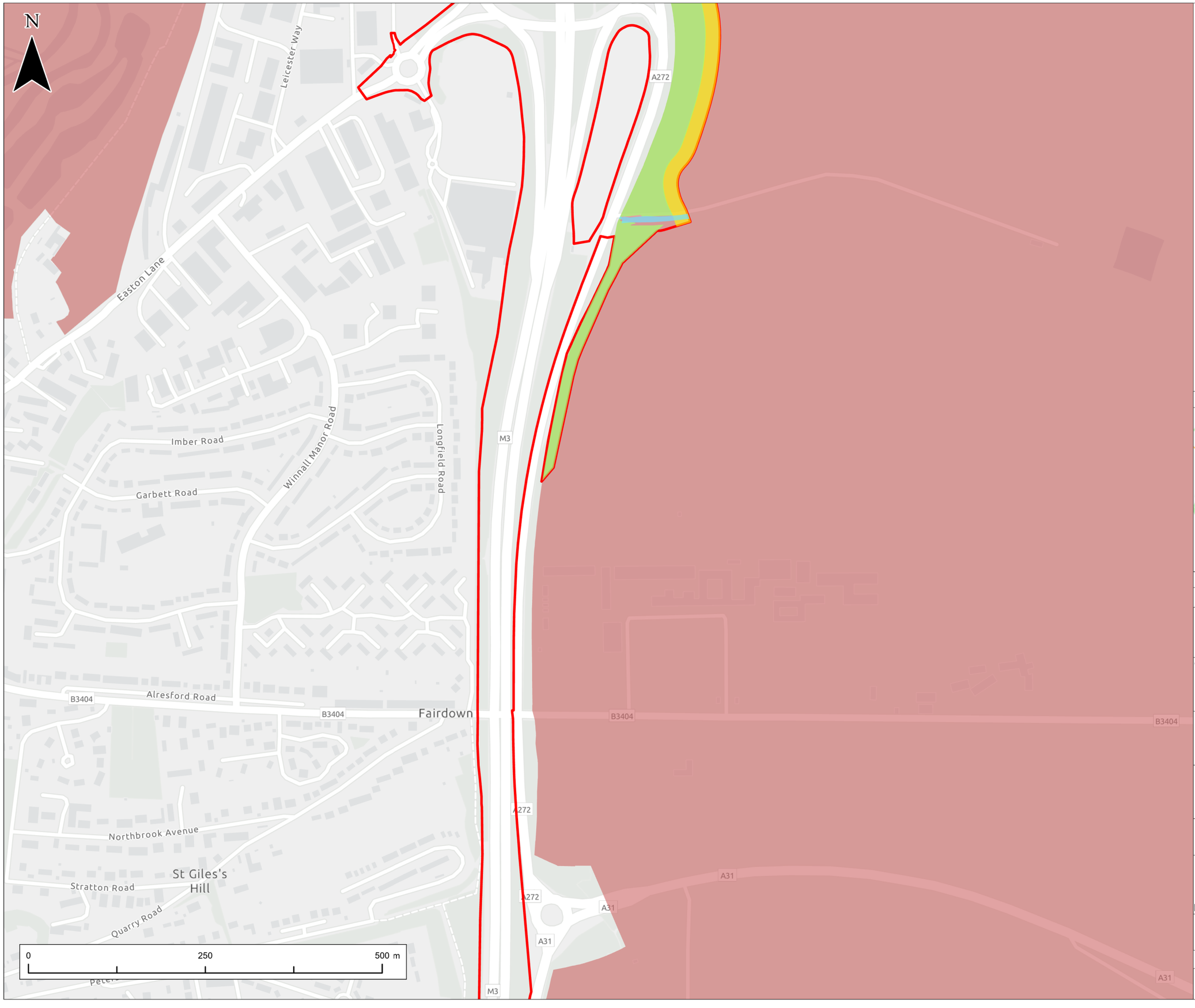

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Legend

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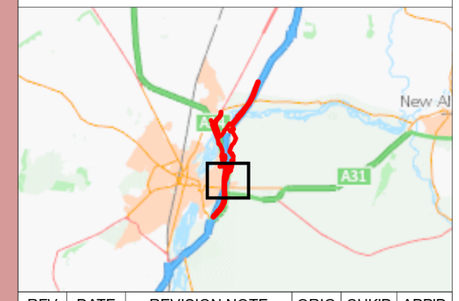
- Land Temporarily Acquired and Returned to Previous Land Use (17.15ha)
- Environmental Proposals within South Downs National Park (28.02ha)

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 4: PROPOSED LAND USE ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK
Page 5 of 6

SUITABILITY
DEADLINE 5 SUBMISSION

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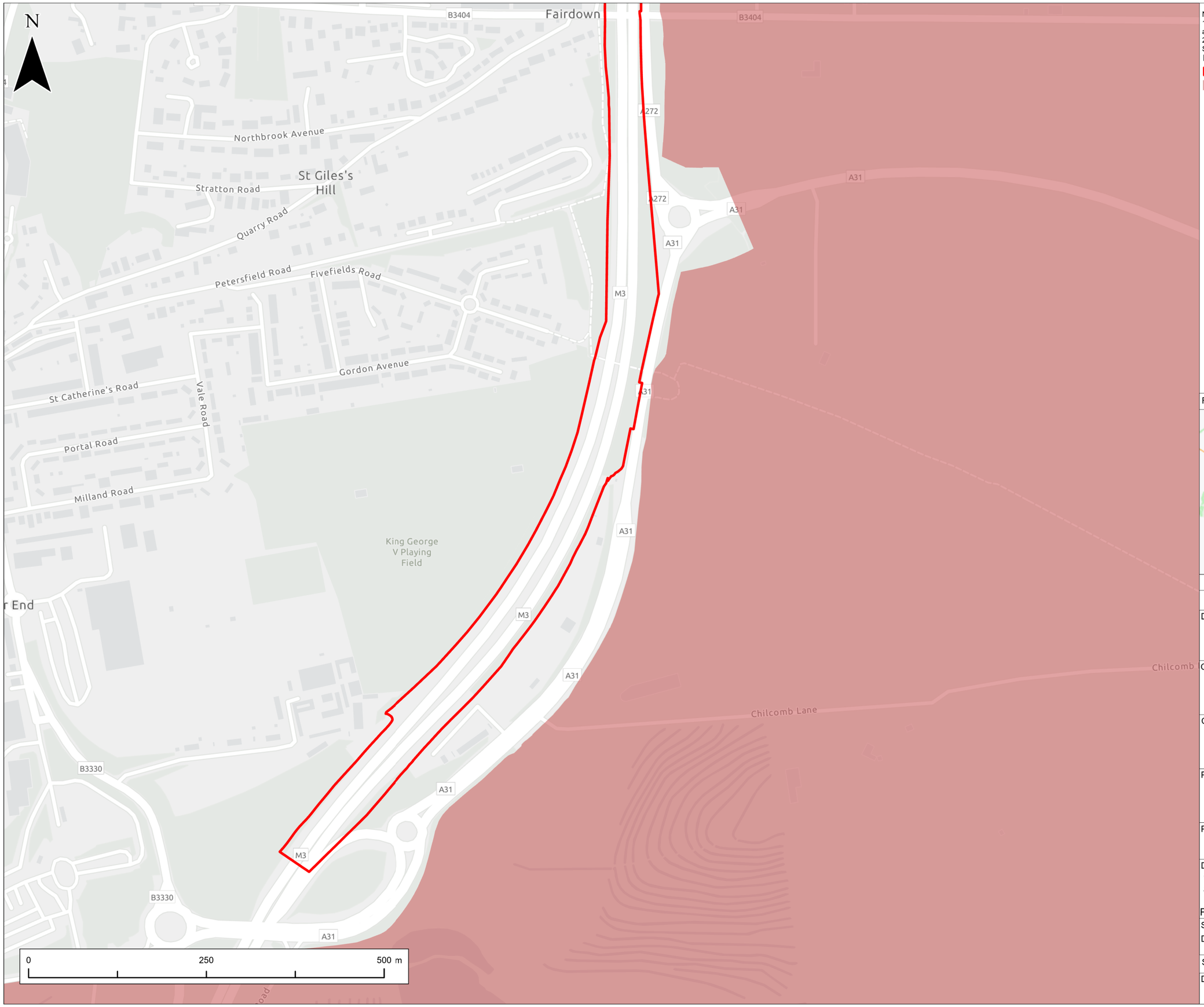

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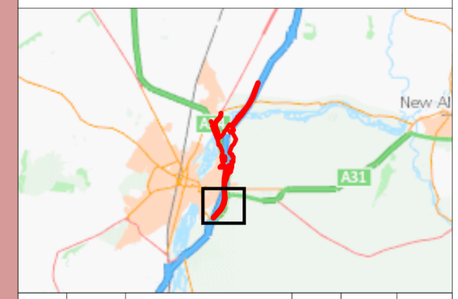
2. Quantum (area / length identified in the Legend) is the total across the Scheme

Legend
- Application Boundary
- South Downs National Park

REFERENCE MAP



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PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q1.2.2 FIGURE 4: PROPOSED LAND USE ANALYSIS WITHIN SOUTH DOWNS NATIONAL PARK
Page 6 of 6

SUITABILITY
DEADLINE 5 SUBMISSION

SHEET SIZE: A3	SCALE: 1:5,000	STATUS: REV 0

DRAWING NUMBER
HE5515511-VFK-ELS-XXXX_XX_DR-LE_40044

Appendix B Traffic and transport additional information in response to ExA WQ2

Appendix B – Traffic and transport additional information in response to ExA WQ2

Title
BIM Document Reference: HE551511-VFK-GEN-XXXX_XX-TN-TR-40009
Revision: 0
Date: 22 September 2023
Author: M3 Junction 9 Improvement Team, National Highways

1.1 Introduction

1.1.1 This document has been prepared to provide supporting information in relation to the Applicant's response to the Examining Authority (ExA)'s second written questions.

1.2 Q16.2.1 - Journey times between Solent and West Midlands

Request

The current journey time savings detailed in the application for the important Solent to Midlands route are between M3 J10 and the A24/A272 junction. Please provide a journey time saving assessment showing the potential change in journey times between the Solent and Midlands that will be seen as a result of the proposed improvement to M3 Junction 9 and in light of the current route strategy and understanding of the emerging RIS3 programme aims.

Applicant response

1.2.1 **Table 1.1** presents the difference in journey time between the Do-Minimum and Do-Something scenarios for 2027, 2042 and 2047 for travel movements between the Solent and the West Midlands. Journey times were extracted from the strategic model zone-to-zone skim data tables and **Figure 1.1** shows the zone sectors that were used to extract average journey times for all related zone pairs.

Table 1.1: Journey time comparison for travel movements between Solent and West Midlands

Year	Direction	Period	Do-Minimum (hh:mm:ss)	Do-Something (hh:mm:ss)	Difference (mm:ss)
2027	Northbound	AM	03:01:22	03:00:17	-01:05
		Inter	02:47:05	02:46:15	-00:50
		PM	02:52:36	02:51:31	-01:05
	Southbound	AM	02:50:28	02:49:52	-00:36
		Inter	02:44:05	02:42:11	-01:54
		PM	02:46:50	02:44:38	-02:12
2042	Northbound	AM	03:10:32	03:09:30	-01:02
		Inter	02:52:30	02:51:16	-01:14
		PM	02:57:41	02:56:54	-00:47
	Southbound	AM	03:00:28	02:59:59	-00:29
		Inter	02:55:12	02:54:03	-01:09
		PM	03:03:12	03:01:40	-01:32
2047	Northbound	AM	03:14:05	03:13:12	-00:53
		Inter	02:54:19	02:53:18	-01:01
		PM	03:00:37	02:59:14	-01:23
	Southbound	AM	03:02:44	03:02:24	-00:20
		Inter	02:57:44	02:56:47	-00:57
		PM	03:07:34	03:05:54	-01:40

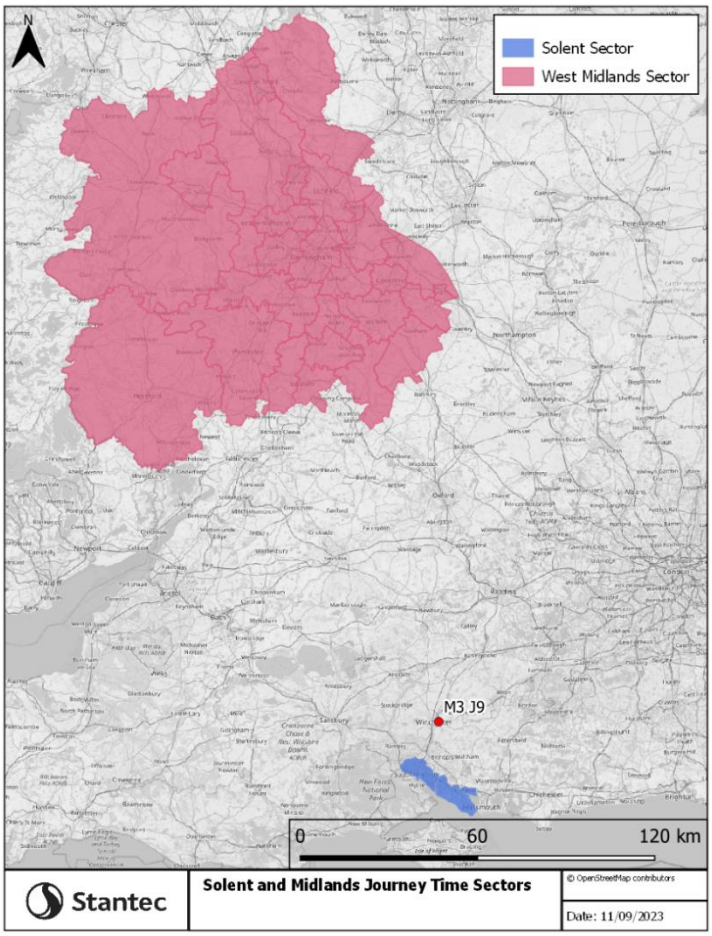


Figure 1.1: Solent and West Midlands Journey Time Sectors

1.3 Q16.2.3 – Rail Freight Shift

Request

In May 2023, the operators of Southampton Port, DP World, issued information regarding a trial to incentivise freight transporters to use rail for moving freight in a 140mile radius of Southampton, including to Birmingham/The Midlands. Within this initiative DP World suggest they believe there is capacity to increase rail usage from 25% to 40%. (This is detailed in Winchester Action on the Climate Crisis Deadline 4 Submission (REP4-050). Responses to any further information requested by the Examining Authority Please provide a traffic modelling assessment and journey time savings assessment through M3 junction 9 that this change would have on the do minimum and do something scenario in 2027 and 2047. Please also provide updated modelling to show the impact of the predictions of modal shift detailed in the joint Network Rail/National Highways Solent to Midlands Strategy.

Applicant response

1.3.1 The joint Network Rail/National Highways Solent to Midlands Strategy notes that approximately 5% of freight goes between the Solent and East Midlands

by Rail, 21% to the West Midlands, the rest goes by road (Figure 37). An estimate of 32 HGVs per train is considered. High forecast estimates of rail freight growth consider an additional 20 trains per day – potentially removing 800 HGVs per day in each direction (p89) up to 2044. This would remove on average approximately 33 HGVs per hour from the road network in a 2044 forecast year assessment. However, this would assume that the increase in rail freight growth is targeted to specifically replace road freight and not part of an overall port expansion programme in which case HGV movements may not change.

1.3.2 The M3 Junction 9 Model estimates the southbound HGV flow on the M3 south of junction 9 in the 2047 assessment year is 453 vehicles per hour in the AM peak and 380 vehicles per hour in the PM peak in the '*with Scheme*' scenario. The equivalent northbound HGV flow is 592 vehicles per hour in the AM peak and 390 vehicles per hour in the PM peak. The total predicted vehicle flow on the M3 south of junction 9 in the 2047 assessment year is between 4,623 and 4,982 vehicles per hours for the AM and PM peaks by direction.

1.3.3 It is considered that the removal of 33 HGVs per hour is not a proportionate change in model inputs to materially impact model outputs and therefore a model run has not been undertaken. It is worth noting that HGV routing may be timetabled outside the AM and PM Peak hours (avoiding more congested periods) which would further reduce impact on the operational performance of the transport network and, therefore, model outputs.

1.3.4 In considering the potential 25-40% uplift in rail freight to/from DP World, we have calculated approximate changes in annual tonnage transferred in a 140 mile radius of Southampton, including to Birmingham/The Midlands. The resultant increase in rail freight from that currently used would reduce the number of HGVs on the road network by up to approximately 50 per day (approximately 2 per hour). This again assumes that the growth in rail freight use is targeted to reduce HGV use as opposed to assisting in overall port growth. It is considered that the removal of 2 HGVs per hour is not a proportionate change in model inputs to materially impact model outputs and therefore a model run has not been undertaken.

1.4 Q16.2.9 – Safety assessment junctions

Request

Please provide a plan which details the individual junctions within the immediate area of influence that have been used to assess the changes to safety and explain why explain there is a forecast increase in accidents and fatalities at these junctions as a result of the proposal, as detailed in **Table 5-16** of the **Combined Modelling and Appraisal Report (7.10, Rev 1)**.

Applicant response

1.4.1 **Figure 1.2** illustrates the individual nodes (junctions) used in the COBALT (COst and Benefit to Accidents – Light Touch) assessment. The nodes highlighted in red indicate disbenefit (i.e. an increase in collisions) while the nodes highlighted in green indicate a benefit (i.e. a reduction in collisions).

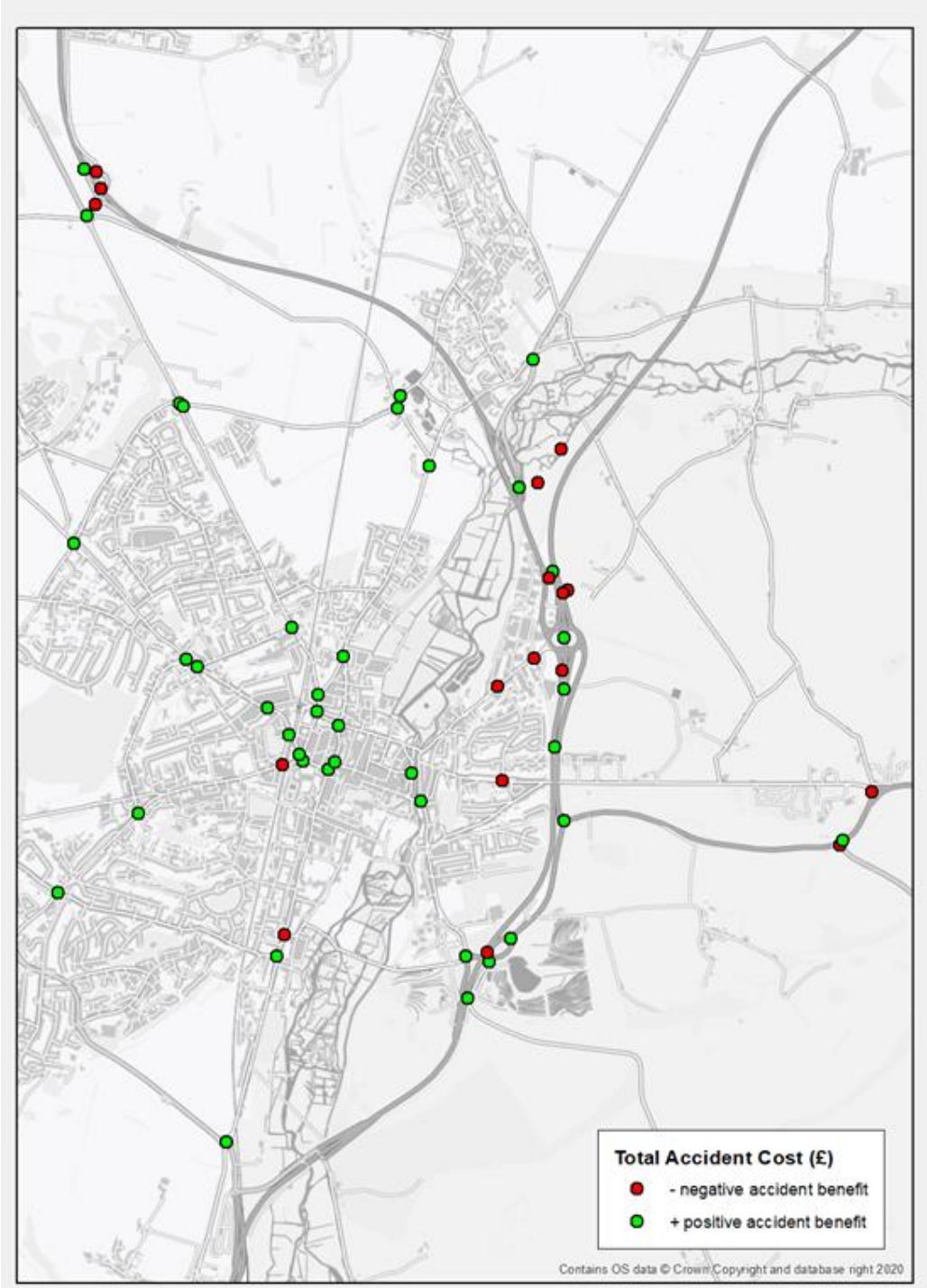


Figure 1.2: COBALT Junctions

1.4.2 Nodes that are new in the '*with Scheme'* assessment are considered as a disbenefit (as there is no equivalent Do Minimum node and related accidents). Vice versa, nodes that are removed in the 'with Scheme' assessment are considered as a benefit (as related accidents are only in the Do Minimum). This explains the net increase in predicted accidents at junctions as a result of the Scheme, where traffic is predicted to re-route via the new grade-separated infrastructure and new merges. There is a net decrease in predicted accidents on modelled links, which is also a function of traffic re-routing with the Scheme.

1.5 Q16.2.10 – Safety assessment within application boundary

Request

Please provide a version of **Tables 5-15** and **5-16** of the **Combined Modelling and Appraisal Report (7.10, Rev 1)** relating to the application boundary only for the period 2015-2019 and also the period 2012-2021.

Applicant response

1.5.1 COBALT (COst and Benefit to Accidents – Light Touch) assessment as presented in **Table 5-15** and **Table 5-16** of the **Combined Modelling and Appraisal Report (7.10, Rev 1)** has been undertaken for the application boundary area.

1.5.2 In addition, a series of sensitivity test assessments were prepared in order to highlight the variance of a wider observed accident data range from 2012-2019, and to further highlight the application of the COBALT software default accident rates.

1.5.3 As noted in **Section 1.3** of **Appendix A (Traffic and transport post hearing information)** in the **Applicant written summaries of oral case for Issue Specific Hearing 2 (ISH2) (8.14, REP4-035)** there was a reduction in observed accidents in 2020/2021 during COVID-19 pandemic travel restrictions when traffic levels were also lower. Therefore, application of 2020-2021 observed data within COBALT is not appropriate in the absence of equivalent traffic flow data.

1.5.4 The outputs of the application boundary COBALT sensitivity test assessments are shown in the series of tables below where the following tests are presented:

- **Sensitivity Test 1** - Application Boundary with accident data consistent with the **Combined Modelling and Appraisal Report (7.10, Rev 1)** (CoMMA) outputs (**Table 1.2** and **Table 1.3**). This sensitivity test shows the predicted accident benefits within the application boundary.

- **Sensitivity Test 2** - Application Boundary with accident data 2012-2016 (**Table 1.4** and **Table 1.5**). The 2012-2016 sensitivity test assessment was prepared to consider earlier accident data from the 2012-2019 period

where it was necessary to split the observed period due to COBALT accident data input limitations.

- **Sensitivity Test 3** - Application Boundary with COBALT default rates (**Table 1.6** and **Table 1.7**). COBALT default accident rates are drawn from the Department for Transport (DfT), Transport Analysis Guidance (TAG) Data Book which provides accident rates for different road and junction types.

Table 1.2: Forecast Accidents (60-year Appraisal Period) - Sensitivity Test 1 - Application Boundary with accident data consistent with the ComMA outputs

Area of influence	Number of accidents		Casualties - fatal		Casualties - serious		Casualties - slight	
	DM	WS	DM	WS	DM	WS	DM	WS
Application Boundary - links only	996	685	18	12	123	93	1,372	903
Application Boundary - junctions only	420	585	4	8	41	79	611	865
Total	**1,416**	**1,270**	**22**	**20**	**164**	**172**	**1,983**	**1,768**

DM = Do-Minimum, WS = With Scheme

Table 1.3: Accident Impacts (60-year Appraisal Period) - Sensitivity Test 1 - Application Boundary with accident data consistent with the ComMA outputs

Area of Influence	Accidents reduction	Casualties reduction - fatal	Casualties Reduction - serious	Casualties Reduction - slight	Present Value of Benefits*
Application Boundary - links only	311	6	30	469	13,989
Application Boundary - junctions only	-165	-4	-38	-254	-10,358
Total	**146**	**2**	**-8**	**215**	**3,631**

* present value in £M, discounted to 2010, in 2010 prices

Table 1.4: Forecast Accidents (60-year Appraisal Period) - Sensitivity Test 2: Application Boundary with accident data 2012-2016

Area of influence	Number of accidents		Casualties - fatal		Casualties - serious		Casualties - slight	
	DM	WS	DM	WS	DM	WS	DM	WS
Application Boundary - links only	832	586	16	11	104	77	1,141	793
Application Boundary - junctions only	707	630	7	8	74	81	1,033	927
Total	**1,539**	**1,216**	**23**	**19**	**178**	**158**	**2,174**	**1,720**

DM = Do-Minimum, WS = With Scheme

Table 1.5: Accident Impacts (60-year Appraisal Period) - Sensitivity Test 2: Application Boundary with accident data 2012-2016

Area of influence	Accidents reduction	Casualties reduction - fatal	Casualties reduction - serious	Casualties reduction - slight	Present value of benefits *
Application Boundary - links only	246	5	27	348	11,560
Application Boundary - junctions only	77	-1	-7	106	-180
Total	**323**	**4**	**20**	**454**	**11,380**

* present value in £M, discounted to 2010, in 2010 prices

Table 1.6: Forecast Accidents (60-year Appraisal Period) - Sensitivity Test 3: Application Boundary with Default Rates

Area of Influence	Number of Accidents		Casualties - Fatal		Casualties - Serious		Casualties - Slight	
	DM	WS	DM	WS	DM	WS	DM	WS
Application Boundary - links only	1,450	750	26	15	165	97	2,084	1,021
Application Boundary - junctions only	907	685	9	9	95	86	1,325	1,007
Total	**2,357**	**1,435**	**35**	**24**	**260**	**183**	**3,409**	**2,028**

DM = Do-Minimum, WS = With Scheme

Table 1.7: Accident Impacts (60-year Appraisal Period) – Sensitivity Test 3: Application Boundary with Default Rates

Area of influence	Accidents reduction	Casualties reduction - fatal	Casualties reduction - serious	Casualties reduction - slight	Present value of benefits*
Application Boundary - links only	700	11	68	1,063	29,896
Application Boundary - junctions only	222	0	9	318	5,515
Total	**922**	**11**	**77**	**1,381**	**35,411**

* present value in £M, discounted to 2010, in 2010 prices

1.5.5 **Table 1.8** summarises the benefits of the application boundary COBALT assessment sensitivity test outputs against the existing outputs of link and junctions in the immediate area of interest as shown in **Table 5-15** and **Table 5-16** of the **Combined Modelling and Appraisal Report (7.10, Rev 1)**.

Table 1.8: Summary Table of Accident Benefits (present value in £M, discounted to 2010, in 2010 prices)

Area of Influence	Outputs in ComMA – Immediate Area	Application Boundary Sensitivity Tests		
		Consistent with CoMMA (2015-2019)	2012-2016 Accident Data	COBALT Default Rates
Links only	20,905	13,989	11,560	29,896
Junctions only	-6,732	-10,358	-180	5,515
Total (£000s)	**14,173**	**3,631**	**11,380**	**35,411**

1.5.6 Comparing the immediate area against the application boundary area with the same accident data sample period of 2015-2019 (sensitivity test 1) shows lower overall predicted accident benefits. This is expected, as it shows the proportion of impacts within the application of boundary with the remainder of benefits in the other parts of the assessment immediate area, including central Winchester which results from the predicted reduction in traffic.

1.5.7 Inspection of the application boundary outputs with the earlier 2012-2016 dataset (sensitivity test 2) compared with the 2015-2019 dataset outputs shows an increase in predicted accident benefits. This is because observed accidents in the 2012-2016 period are higher with corresponding increased accident rates applied in COBALT. This suggests that if accident data spanning from 2012 to 2019 was incorporated in the Scheme assessment there would be an increase in predicted benefits.

1.5.8 Inspection of the COBALT default accident rates (sensitivity test 3) outputs also shows an increase in predicted accident benefits. This is largely due to the COBALT default rates being higher than observed accident rates for certain existing links and junctions where the predicted traffic reduction from the Scheme leads to greater accident benefits because of this.

1.5.9 From the above analysis, it can be concluded that the existing COMMA inputs and the accident data sample from 2015-2019 represents a robust assessment and monetised value of Scheme accident benefits.

1.6 Q16.2.11 – Observed collisions data

Request

Please explain the geographic extent of the data in Table 2-1 (Collision Data by Year (2015-2019)) of the Combined Modelling and Appraisal Report

[REP1-025]. Please provide a version of this table for the following geographic are covering the period from 2012-2021:

- The application boundary

- The Immediate area of influence (used in the benefits analysis)

- The Wider area of influence (used in the benefits analysis).

Applicant response

1.6.1 The following tables (**Table 1.9** to **Table 1.16**) shows the number of collisions and number of casualties in the application boundary, the Immediate Area, and Wider Area for the period 2012-2021.

1.6.2 The Immediate and Wider areas are those defined in **Figure 5-5** in the **Combined Modelling and Appraisal Report (7.10, Rev 1)**. It should be noted that the observed data includes collisions and related casualties on the local road network. Some local roads are not included in the M3 Junction 9 Model as it has a focus on the strategic road network.

1.6.3 **Table 1.9** presents the number of collisions in the application boundary area in each year by severity classification.

Table 1.9: Collision Data by Year (2012-2021) – Application Boundary

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	12	28	15	19	11	17	18	7	7	6	140	82%
Serious	2	1	3	3	6	2	4	4	0	2	27	16%
Fatal	0	0	2	0	0	1	0	0	0	0	3	2%

1.6.4 **Table 1.10** presents the number of collisions in the Immediate Area in each year by severity classification.

Table 1.10: Collision Data by Year (2012-2021) – Immediate Area (excluding Application Boundary)

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	94	72	100	80	101	75	98	67	50	62	799	74%
Serious	25	30	28	25	32	18	34	24	17	17	250	23%
Fatal	1	0	3	1	2	3	5	5	4	3	27	3%

1.6.5 **Table 1.11** presents the number of collisions in the Wider Area in each year by severity classification.

Table 1.11: Collision Data by Year (2012-2021) – Wider Area (excluding Application Boundary and Immediate Area)

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	62	58	65	53	59	68	41	48	47	43	544	70%
Serious	18	19	20	21	24	19	30	25	23	16	215	28%
Fatal	1	4	2	4	3	1	4	0	0	3	22	3%

1.6.6 **Table 1.12** presents the number of collisions in the combined application boundary, Immediate, and Wider areas in each year by severity classification.

Table 1.12: Collision Data by Year (2012-2021) – Application Boundary + Immediate Area + Wider Area

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	168	158	180	152	171	160	157	122	104	111	1483	73%
Serious	45	50	51	49	62	39	68	53	40	35	492	24%
Fatal	2	4	7	5	5	5	9	5	4	6	52	3%

1.6.7 **Table 1.13** presents the number of casualties in the application boundary area in each year by severity classification.

Table 1.13: Casualties Data by Year (2012-2021) – Application Boundary

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	17	33	24	33	15	21	25	11	9	10	198	86%
Serious	2	1	4	3	6	2	5	4	0	2	29	13%
Fatal	0	0	2	0	0	2	0	0	0	0	4	2%

1.6.8 **Table 1.14** presents the number of collisions in the Immediate Area in each year by severity classification.

Table 1.14: Casualties Data by Year (2012-2021) – Immediate Area (excluding Application Boundary)

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	122	92	121	106	138	103	152	91	102	88	1115	78%
Serious	28	31	30	26	35	18	38	26	23	22	277	19%
Fatal	1	0	4	1	2	3	7	6	5	3	32	2%

1.6.9 **Table 1.15** presents the number of casualties in the Wider Area in each year by severity classification.

Table 1.15: Casualties Data by Year (2012-2021) – Wider Area (excluding Application Boundary and Immediate Area)

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	83	89	86	81	95	94	73	74	78	70	823	76%
Serious	23	19	25	24	26	21	35	25	23	19	240	22%
Fatal	1	4	2	5	3	1	4	0	0	3	23	2%

1.6.10 **Table 1.16** presents the number of collisions in the combined application boundary, Immediate, and Wider areas in each year by severity classification.

Table 1.16: Casualties Data by Year (2012-2021) – Application Boundary + Immediate Area + Wider Area

Severity	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	All	%
Slight	222	214	231	220	248	218	250	176	189	168	2136	78%
Serious	53	51	59	53	67	41	78	55	46	43	546	20%
Fatal	2	4	8	6	5	6	11	6	5	6	59	2%

1.7 Q16.2.13 – Impact of traffic controlled and freeflow gyratories on safety data analysis

Request

Please explain if there is an observed and researched statistical difference in safety between traffic controlled gyratories and free flow gyratories. Please explain if the change from a signal controlled to free flow Junction 9 gyratory

has been assessed in detail and how this impacts on predicted collisions and also the safety of non-motorised users.

Applicant response

1.7.1 The accidents appraisal for the M3 Junction 9 scheme has been carried out using the Department for Transport (DfT) COBALT (COst and Benefit to Accidents – Light Touch) software. This is the recommended software in DfT Transport Analysis Guidance (TAG) for appraising road scheme accident benefits. It provides a high-level assessment of the differences in accidents with and without a scheme. Calculations are based upon differences in flows, road types, and junction types within these scenarios, with changes in flow typically being the most significant source of impact on outputs.

1.7.2 COBALT includes researched statistical differences in safety between traffic controlled gyratories and free flow gyratories. **Figure 1.3** includes data extracted from the COBALT Parameters v2.4 (TAG Data Book May 2022, v1.18) file, presenting the differences between accident proportions for signalised and non-signalised roundabouts.

Junction only: Accident Proportions							
Junction Type	Speed Limit (mph)	Accident Proportions			Arms	Highest Link (S/D)	Junction Description
		Fatal	Serious	Slight			
59	>40	0.006	0.091	0.903	5 / 6	D	Roundabouts (Standard)
95	>40	0.004	0.062	0.934	5 / 6	D	Roundabouts (Signalled)

Figure 1.3: TAG Junction only: Accident Proportions

1.7.3 The COBALT parameters show that, while there are minor changes in the proportions of Fatal and Serious accidents, overall, there is not a significant difference in the accident proportions between the junction types. While the proportion of Fatal and Serious accidents increases slightly increases slightly with removal of signal-control, flow changes at the junction will have the most significant impact on the number of predicted accidents.

1.7.4 The COBALT assessment takes account of collisions with non-motorised users and related casualties where these are included in the observed accident data and accident rates, however, there is no distinction of non-motorised users in the COBALT outputs.

1.8 Q16.2.17 – Annual Average Daily Traffic (AADT) Figures

Request

Please provide Annual Average Daily Traffic (AADT) forecast for the Do Minimum and Do Something forecasts for 2027, 2042 and 2047 using the same format as used in the application (eg Combined Modelling and Appraisal Report, Appendix C, Flow Difference Plots [REP1-025]). Please also show the percentage of HGVs at each location of traffic data.

Applicant response

1.8.1 The predicted difference in Annual Average Daily Traffic (AADT) flows between the Do Minimum and 'With Scheme' scenarios and the percentage of HGVs in and around the Winchester Road Network are presented in **Figure 1.4** to **Figure 1.9** for each of the forecast years 2027, 2042 and 2047.

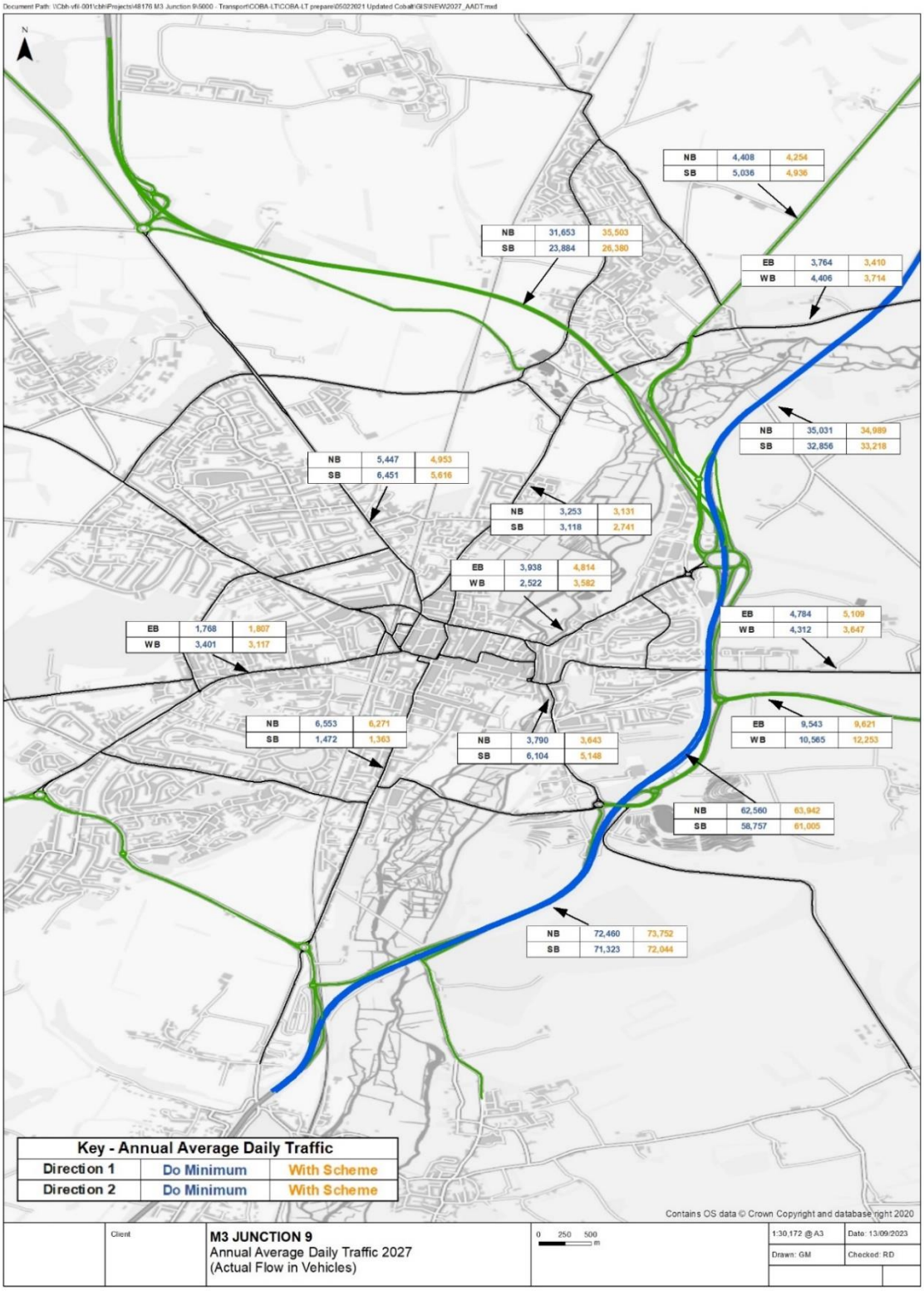


Figure 1.4: Core Scenario AADT Flows, 2027, Do-Minimum and Do-Something Scenarios (NB-northbound, SB-southbound, EB-eastbound, WB-westbound)

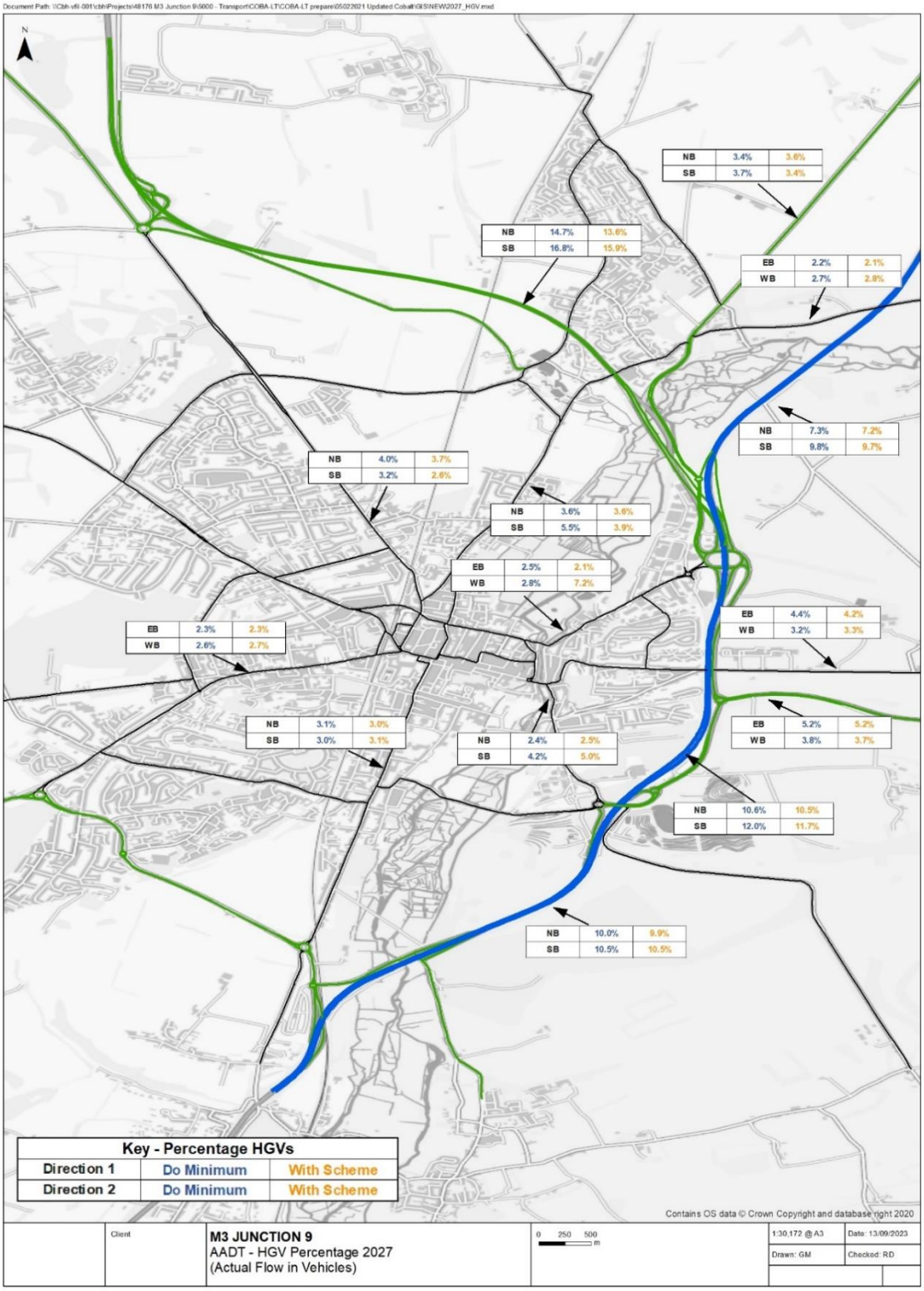


Figure 1.5: Core Scenario AADT % HGVs, 2027, Do-Minimum and Do-Something Scenarios (NB-northbound, SB-southbound, EB-eastbound, WB-westbound)

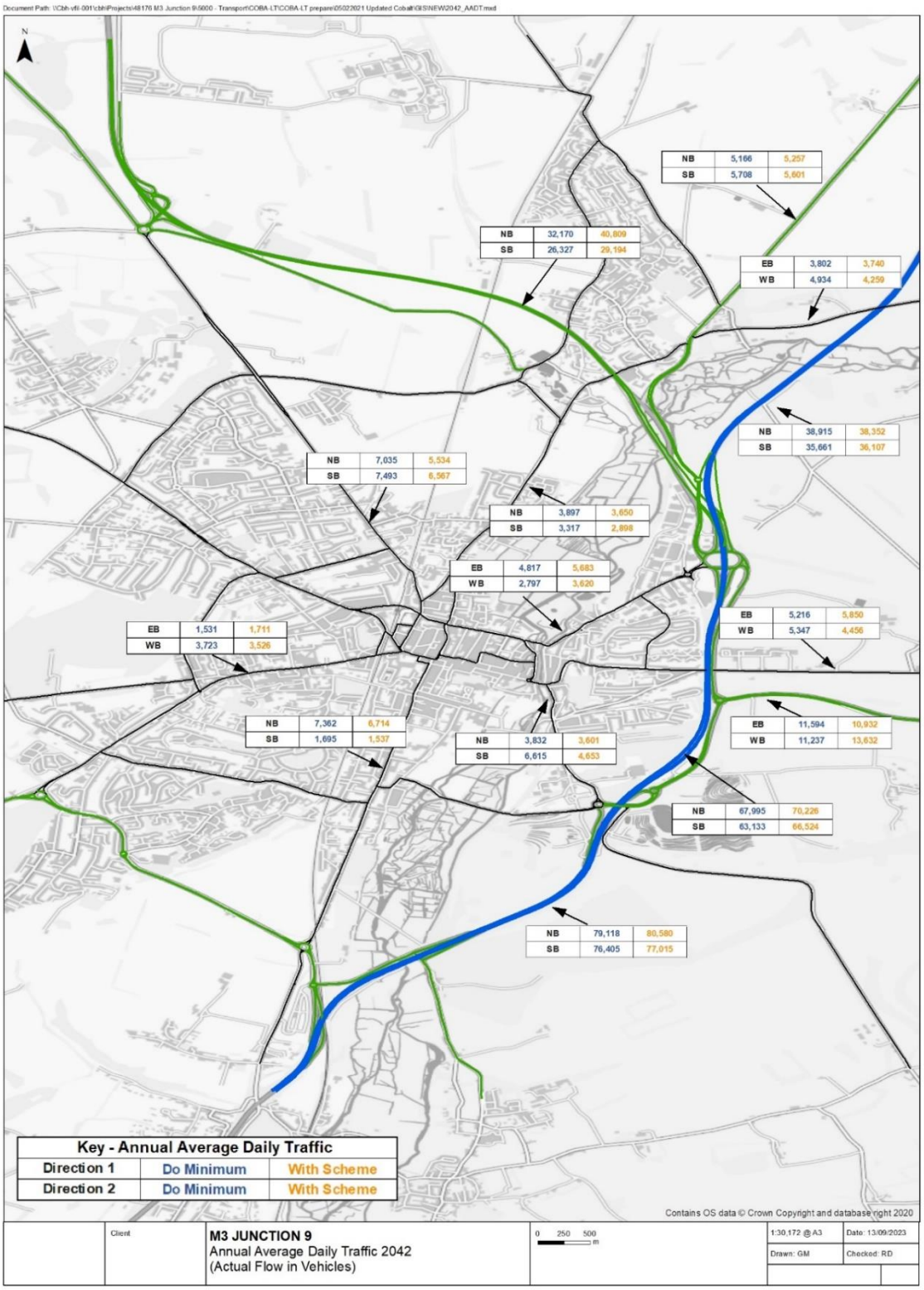


Figure 1.6: Core Scenario AADT Flows, 2042, Do-Minimum and Do-Something Scenarios (NB-northbound, SB-southbound, EB-eastbound, WB-westbound)

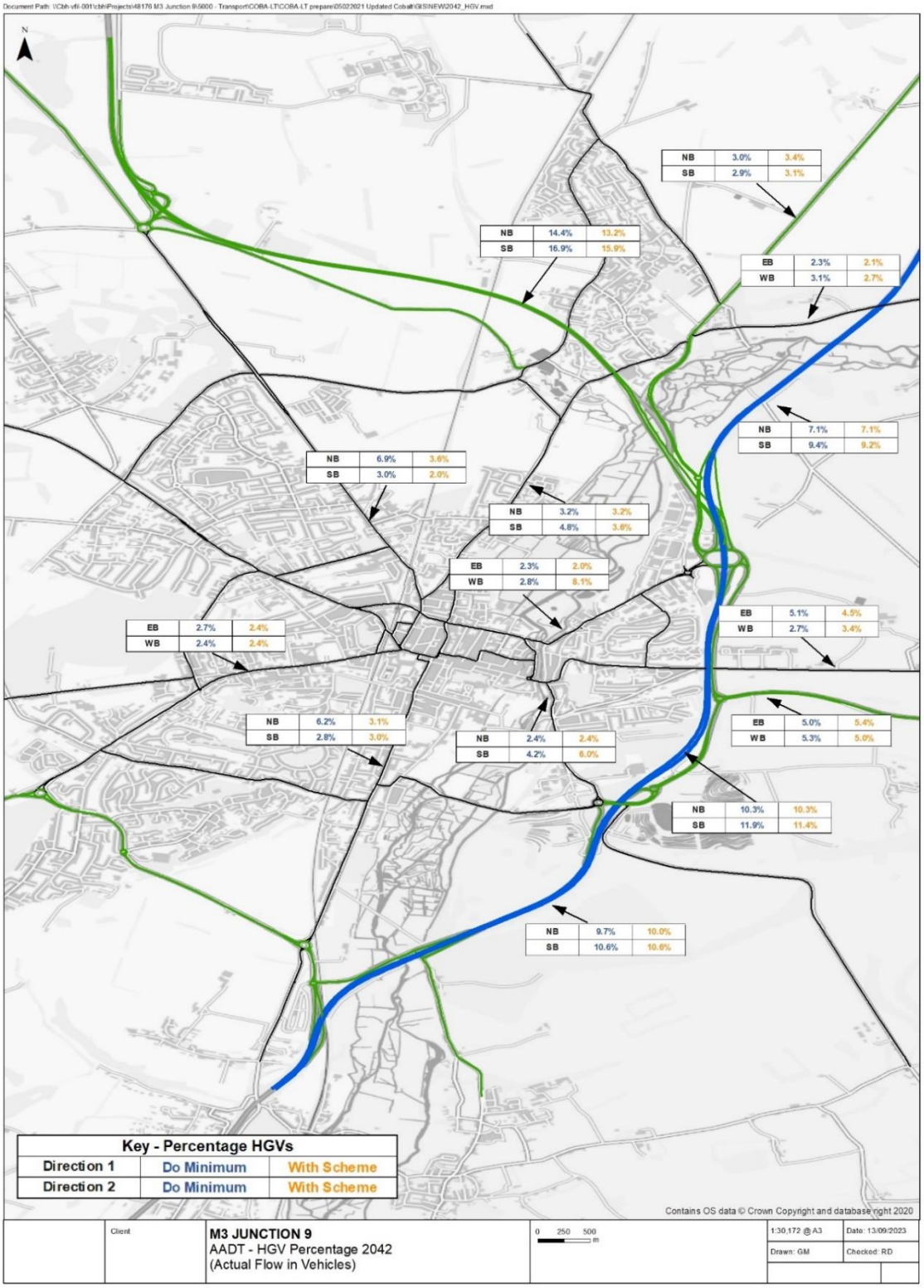


Figure 1.7: Core Scenario AADT % HGVs, 2042, Do-Minimum and Do-Something Scenarios (NB-northbound, SB-southbound, EB-eastbound, WB-westbound)

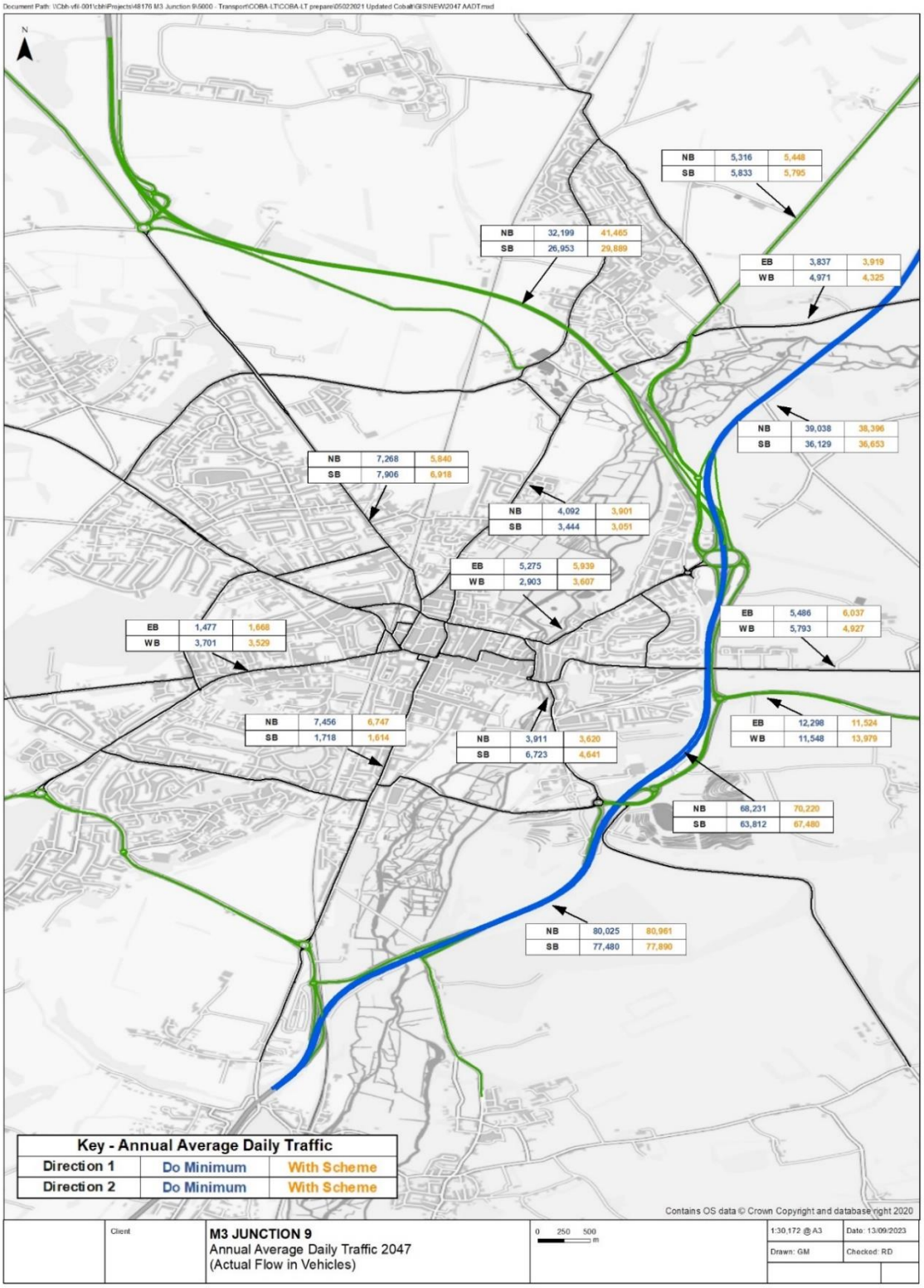


Figure 1.8: Core Scenario AADT Flows, 2047, Do-Minimum and Do-Something Scenarios (NB-northbound, SB-southbound, EB-eastbound, WB-westbound)

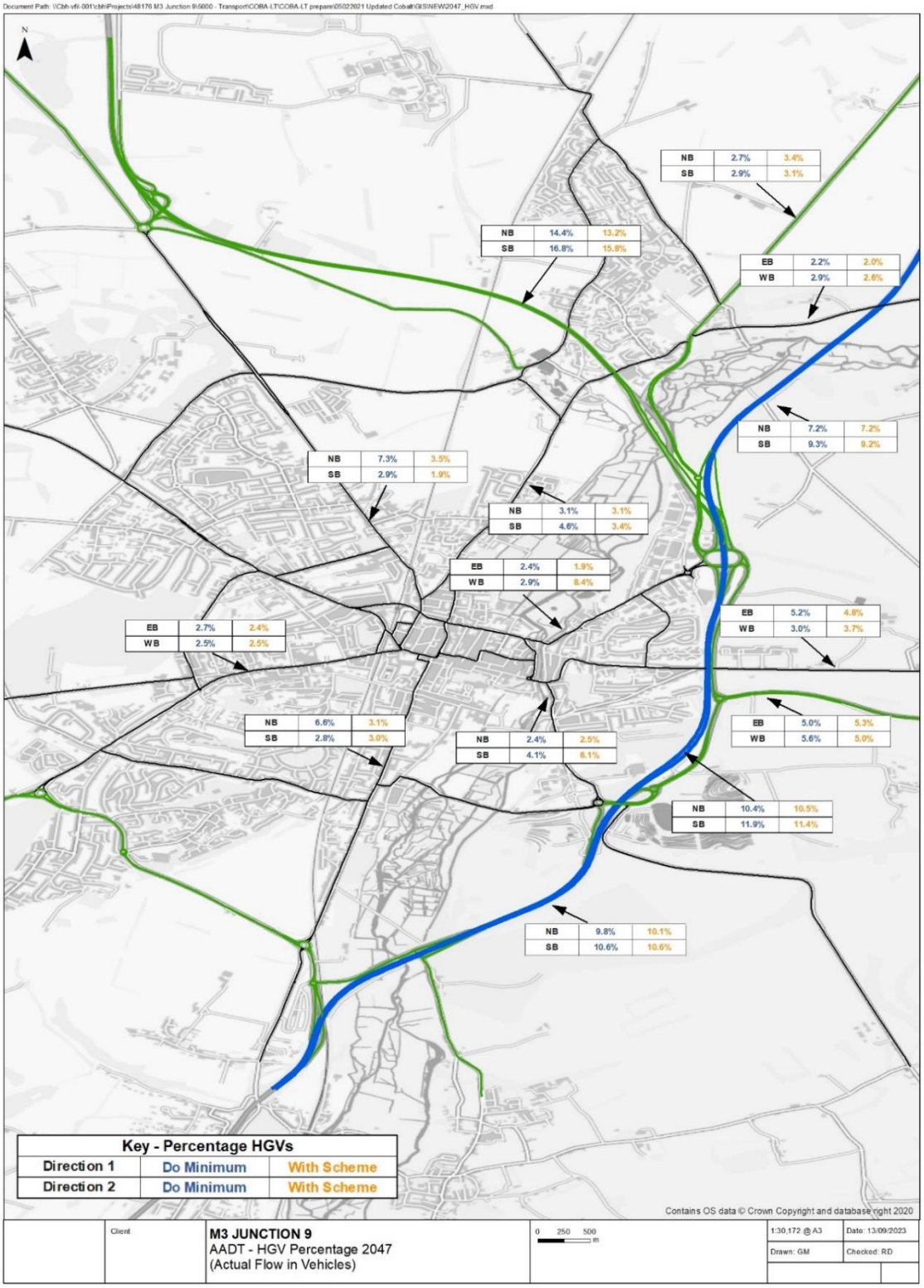


Figure 1.9: Core Scenario AADT % HGVs, 2047, Do-Minimum and Do-Something Scenarios (NB-northbound, SB-southbound, EB-eastbound, WB-westbound)

1.9 Q16.2.18 - HGV modelling and Solent Port

Request

1.9.1 In the **Applicant written summaries of oral case for Issue Specific Hearing 2 (ISH2) – Appendix A (Traffic and transport post hearing information) (8.14, REP4-035)**, the applicant has detailed HGV flow analysis on the M3 south of Junction 9. Please confirm if this is in a link between junctions 9 and 10 of the M3 and explain why the traffic figures differ from those shown in this location in the application documents. Please also confirm if the data in tables 1 and 2 refer to the Solent Port or a wider Solent Area, if this is data for the wider Solent Area, please provide the same tables with HGV data from the Solent Port.

Applicant response

1.9.2 **Table 1.17** and **Table 1.18** provide strategic model analysis relating to HGV movements including trips to/from the Solent port for the 2027 and 2047 forecast years, respectively, from the 'with Scheme' scenario. This for the M3 main carriageway, between junction 9 and junction 10.

Table 1.17: 2027 HGV flow analysis on M3 Mainline just south of Junction 9 – 'With Scheme' (based on vehicles per hour)

2027 M3 Northbound	AM Peak	PM Peak	2027 M3 Southbound	AM Peak	PM Peak
Total Vehicles	4764	4406	Total Vehicles	4202	4678
HGVs	466	332	HGVs	552	358
%HGVs (of Total Vehicles)	10%	8%	%HGVs (of Total Vehicles)	13%	8%
Total HGVs from Solent Port	63	90	Total HGVs to the Solent Port	55	45
%HGVs from Solent Port	14%	27%	%HGVs from Solent Port	10%	13%
%HGVs going to A34 north of Junction 9	63%	67%	%HGVs coming from A34 north of Junction 9	58%	51%
%HGVs going to M3 north of Junction 9	31%	31%	%HGVs coming from M3 north of Junction 9	39%	47%

Table 1.18: 2047 HGV flow analysis on M3 Mainline just south of Junction 9 – 'With Scheme' (based on vehicles per hour)

2047 M3 Northbound	AM Peak	PM Peak	2047 M3 Southbound	AM Peak	PM Peak
Total Vehicles	4759	4982	Total Vehicles	4623	4779
HGVs	453	380	HGVs	592	390
%HGVs (of Total Vehicles)	10%	8%	%HGVs (of Total Vehicles)	13%	8%
Total HGVs from Solent Port	75	98	Total HGVs to the Solent Port	61	57
%HGVs from Solent Port	17%	26%	%HGVs from Solent Port	10%	15%
%HGVs going to A34 north of Junction 9	61%	65%	%HGVs coming from A34 north of Junction 9	58%	57%
%HGVs going to M3 north of Junction 9	33%	31%	%HGVs coming from M3 north of Junction 9	39%	40%

1.10 Q16.2.19 - A272 Spitfire Link/A31 Petersfield Road/A31 St Catherine's Way Roundabout Operational Model Outputs

Request

1.10.1 Please provide a junction forecast for the A272 Spitfire Link/A31 Petersfield Road/A31 St Catherine's Way Roundabout in the same format as **Table 4-13** and **4-14** of the **Combined Modelling and Appraisal Report (7.10, Rev 1)**.

Applicant response

1.10.2 The Do-Something scenario (with Scheme) operational model junction results are presented in **Table 1.19** and **Table 1.20** compared to the Do-Minimum scenario (without scheme).

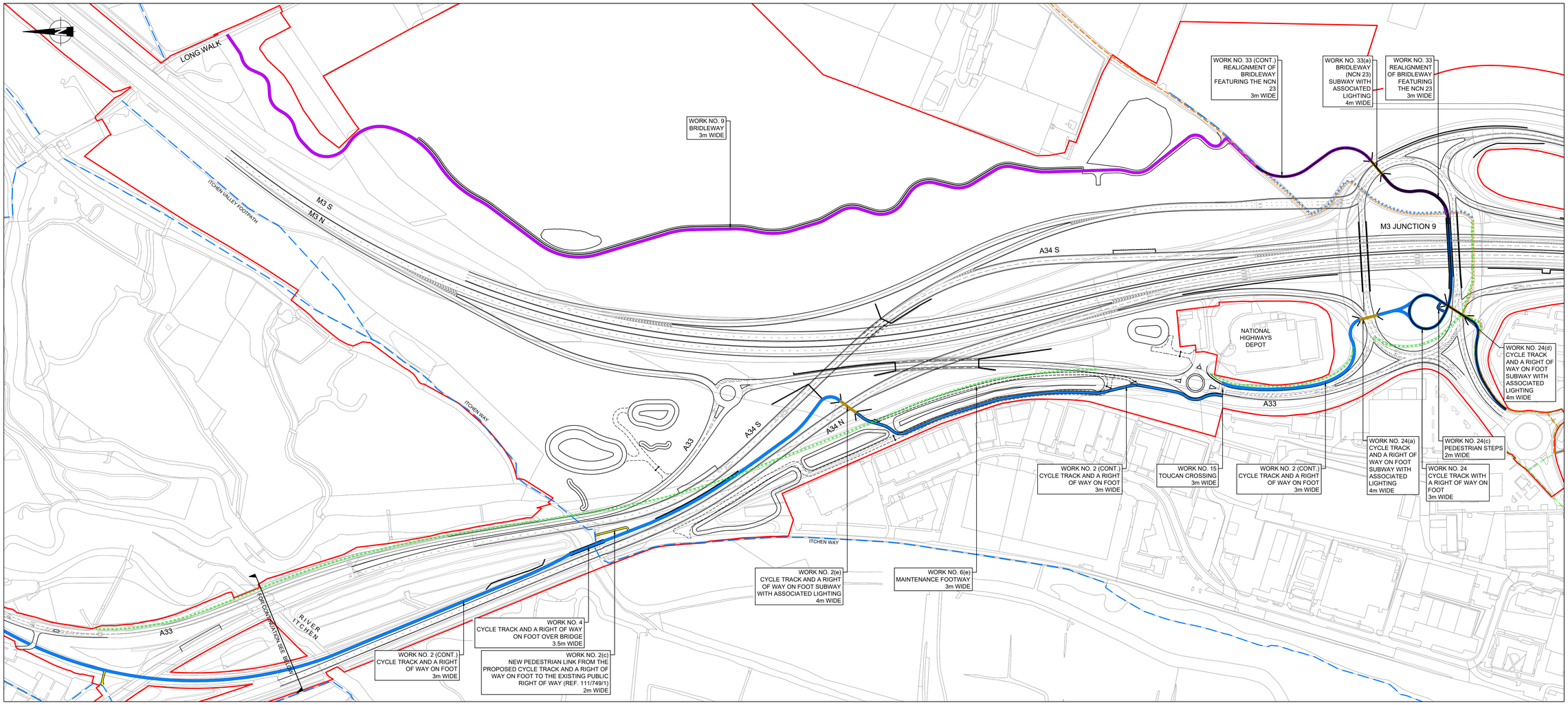
Table 1.19: 2047 Do-Minimum and Do-Something Operational Model Junction Results AM

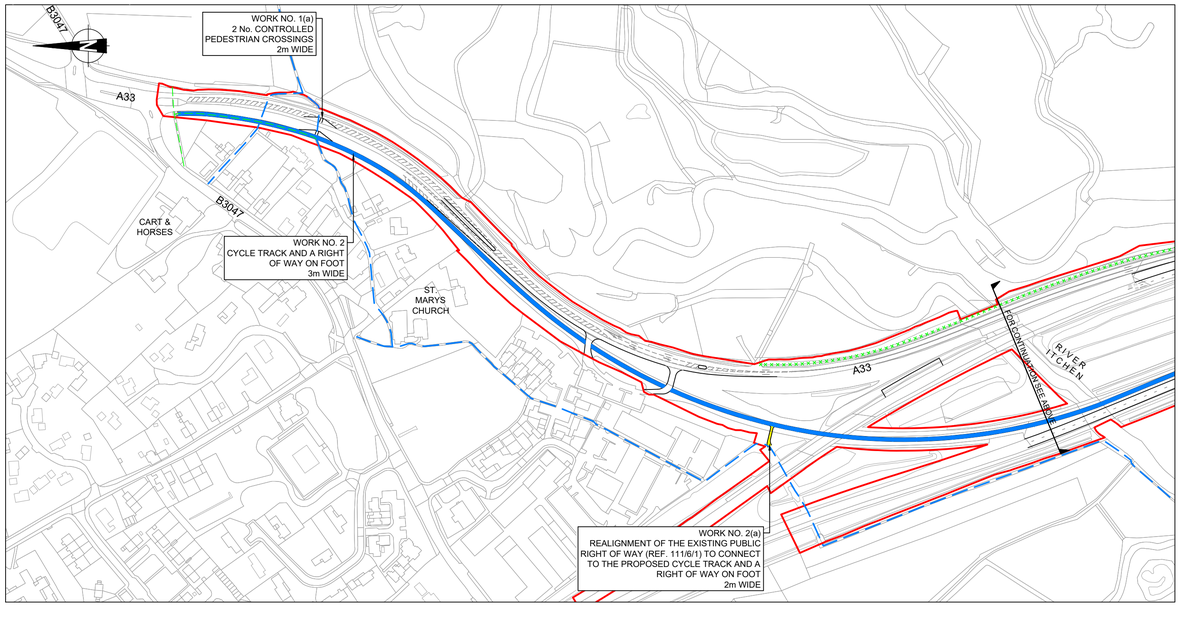
		Do-Minimum - AM				Do-Something - AM			
Junction	Approach	Flow	Delay (s)	Avg Queue (m)	Max Q (m)	Flow	Delay (s)	Avg Queue (m)	Max Q (m)
A31 / A272	A31 - South	901	24	3	151	715	28	10	160
	A272	612	32	15	269	723	30	17	290
	A31 - East	1214	13	12	235	1436	9	3	133

Table 1.20: 2047 Do-Minimum and Do-Something Operational Model Junction Results PM

		Do-Minimum - PM				Do-Something - PM			
Junction	Approach	Flow	Delay (s)	Avg Queue (m)	Max Q (m)	Flow	Delay (s)	Avg Queue (m)	Max Q (m)
A31 / A272	A31 - South	1168	25	5	144	568	22	1	50
	A272	395	32	98	599	808	23	3	111
	A31 - East	1055	53	377	509	1347	12	8	228

Appendix C Single Public Rights of Way and Access Plan - ExA WQ2 16.2.25





PROPOSED RIGHTS OF WAY SCHEDULE

WORK NO.	PROPOSED WIDTH	PROPOSED HEIGHT	PROPOSED LEGAL STATUS	PROPOSED SURFACE FINISH	PROPOSED MAINTAINING AUTHORITY
1(a)	2.0m	N/A	FOOTPATH	BOUND ASPHALT	HCC
2	3.0m	N/A	CYCLE TRACK*	BOUND ASPHALT	HCC
2(a)	2.0m	N/A	FOOTPATH	BOUND ASPHALT	HCC
2(c)	2.0m	N/A	FOOTPATH	BOUND ASPHALT	HCC
2(e)	4.0m	2.7m	CYCLE TRACK* SUBWAY	BOUND ASPHALT	NH
4	3.5m	N/A	CYCLE TRACK* OVERBRIDGE	BOUND ASPHALT	HCC
6(e)	3.0m	N/A	MAINTENANCE FOOTWAY	UNBOUND SURFACE	HCC
9	3.0m	N/A	BRIDLEWAY	UNBOUND SURFACE	HCC
15	3.0m	N/A	TOUCAN CROSSING	BOUND ASPHALT	HCC
24	3.0m	N/A	CYCLE TRACK*	BOUND ASPHALT	HCC
24(a)	4.0m	2.7m	CYCLE TRACK* SUBWAY	BOUND ASPHALT	NH
24(c)	2.0m	N/A	PEDESTRIAN STEPS	CONCRETE	HCC
24(d)	4.0m	2.7m	CYCLE TRACK* SUBWAY	BOUND ASPHALT	NH
33	3.0m	N/A	BRIDLEWAY (FEATURING THE NCN 23)	BOUND ASPHALT	HCC
33(a)	4.0m	2.7m	BRIDLEWAY (FEATURING THE NCN 23) SUBWAY	BOUND ASPHALT	NH

NOTE:
* CYCLE TRACK INCLUDES RIGHT OF WAY ON FOOT.
NH = NATIONAL HIGHWAYS.
HCC = HAMPSHIRE COUNTY COUNCIL.

NOTES

1. THIS DRAWING HAS BEEN PRODUCED USING CAD SOFTWARE, THEREFORE ALL DIMENSIONS ARE SHOWN IN METRES UNLESS SHOWN OTHERWISE.
2. DO NOT SCALE FROM THIS DRAWING. USE ONLY PRINTED DIMENSIONS.
3. PROPOSED EARTHWORK EMBANKMENTS / CUTTINGS HAVE BEEN OMITTED FOR CLARITY.
4. THE DESIGN SHOWN WILL BE SUBJECT TO DETAILED DESIGN DEVELOPMENT IN ACCORDANCE WITH THE PROVISIONS OF THE DEVELOPMENT CONSENT ORDER.

KEY TO SYMBOLS

- DEVELOPMENT CONSENT ORDER BOUNDARY
- PROPOSED CYCLE TRACK AND RIGHT OF WAY ON FOOT
- PROPOSED BRIDLEWAY
- PROPOSED LINK TO EXISTING PUBLIC RIGHT OF WAY (AS STATED)
- PROPOSED SUBWAY
- PROPOSED REALIGNED ROUTE OF NCN 23
- EXISTING PUBLIC RIGHT OF WAY
- EXISTING FOOTWAY
- EXISTING CYCLEWAY
- EXISTING PUBLIC RIGHT OF WAY TO BE PERMANENTLY STOPPED UP
- EXISTING FOOTWAY TO BE PERMANENTLY STOPPED UP
- EXISTING CYCLEWAY TO BE PERMANENTLY STOPPED UP

REV	DATE	REVISION NOTE	ORIG	CHKD	APPD
0	SEPTEMBER 2023	DEADLINE 5	GP	LC	MF

DESIGNER: Stantec
CONTRACTOR: VolkerFitzpatrick
CLIENT: national highways
PROJECT TITLE: M3 JUNCTION 9 IMPROVEMENT SCHEME
PROJECT STAGE: PCF STAGE 4
DRAWING TITLE: SINGLE PUBLIC RIGHTS OF WAY AND ACCESS PLAN EXA WQ2 16.2.25
SUITABILITY: FOR INFORMATION
SHEET SIZE: A1 | SCALE: 1:2,500 | STATUS: REV 0
DRAWING NUMBER: HE551511-VFK-LSI-X_XXXX_XX-SK-ZL-2100

Appendix D ExA WQ2 13.2.4 – Figures

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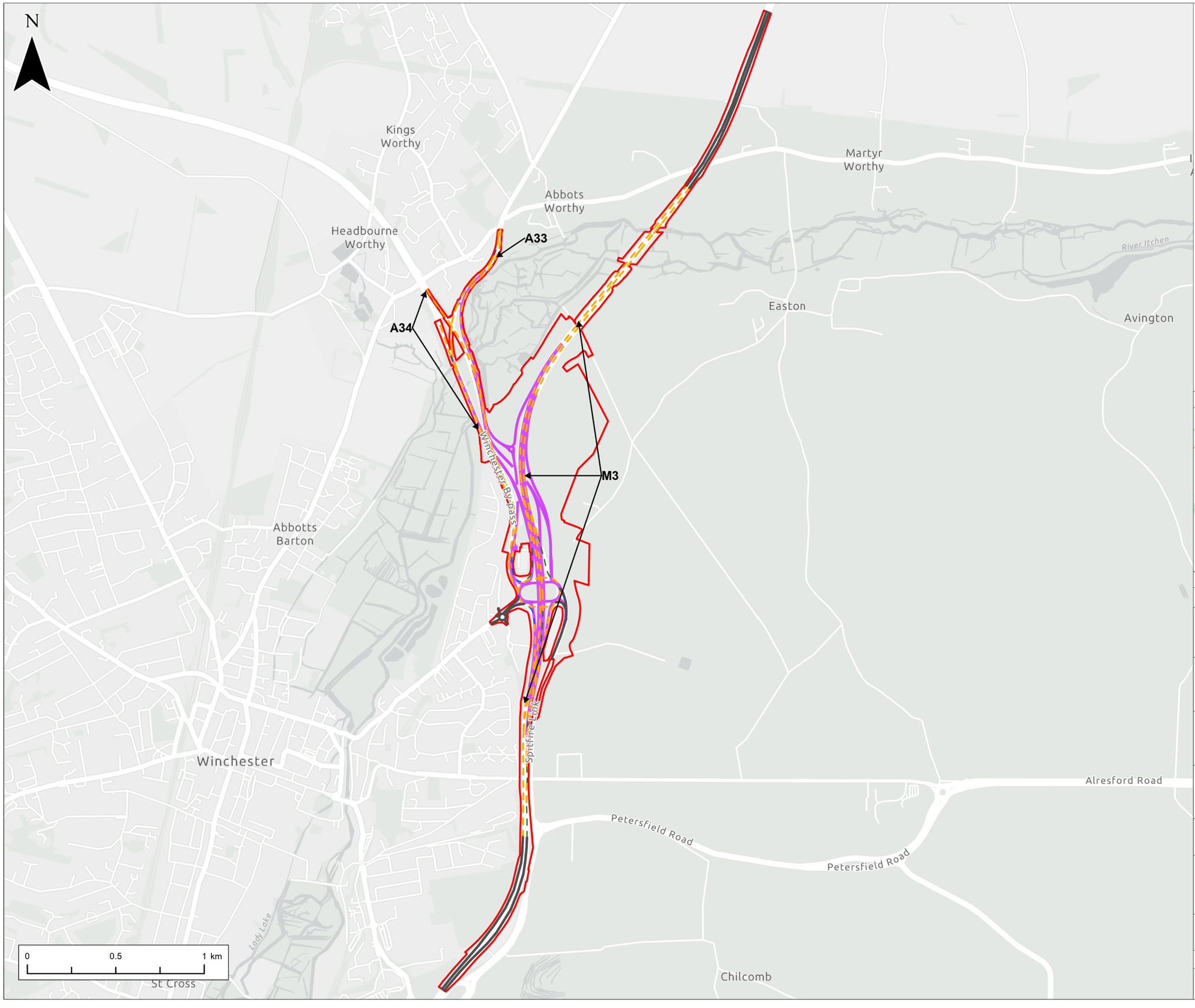


NOTES
1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
2. This drawing includes the extent of the available information within the Application Boundary

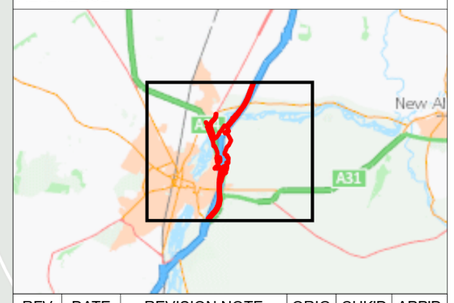
Legend

- Application Boundary
- Proposed Low Noise Road Surface

Existing Road Surface

- Hot Rolled Asphalt Surface
- Low Noise Road Surface
- High Friction Road Surface
- Area of highway where road surface information is unavailable

REFERENCE MAP



REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D
0	September 2023	DEADLINE 5 SUBMISSION	TL	AC	SB

DESIGNER
Stantec

CONTRACTOR
VolkerFitzpatrick

CLIENT
national highways

PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q13.2.4 FIGURE 2: AREAS OF NEW CARRIAGEWAY WITH LOW NOISE SURFACING

SUITABILITY
DEADLINE 5 SUBMISSION

SHEET SIZE: A3	SCALE: 1:20,000	STATUS: REV 0

DRAWING NUMBER
HE551511-VFK-ENV-XXXX_XX_DR-LA-40002

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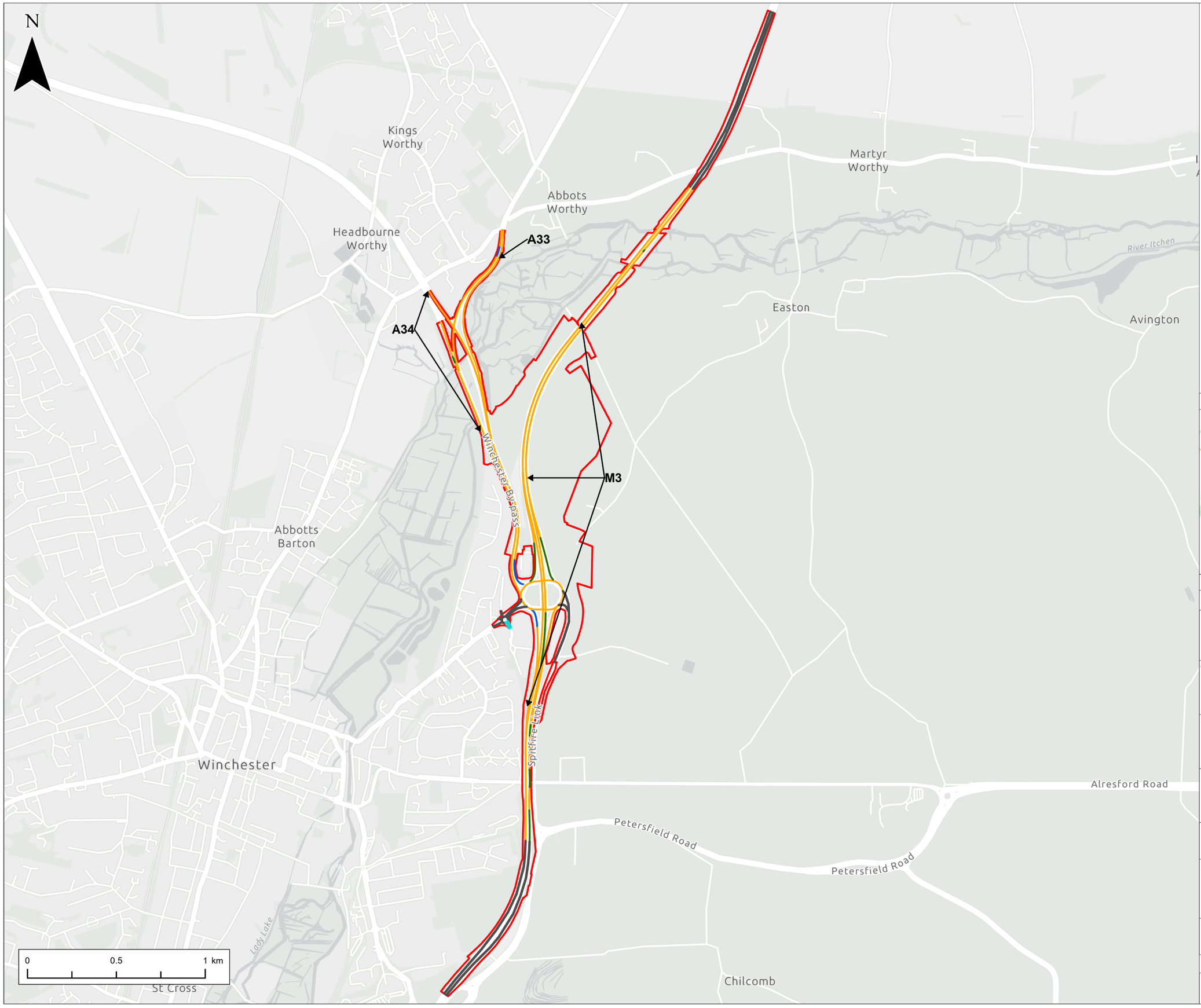


NOTES
1. This drawing has been produced using GIS software, therefore all dimensions are shown in metres unless shown otherwise.
2. This drawing includes the extent of the available information within the Application Boundary

Legend

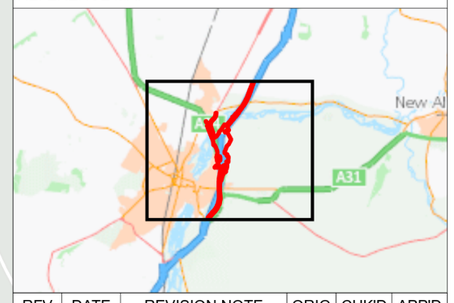
- Application Boundary
- High Friction Road Surface
- Low Noise Road Surface
- Hot Rolled Asphalt Surface
- Area of highway where road surface information is unavailable

Data shown based on HAPMS data.

Road surface finish extents are approximate.

Low noise road surfaces include surfaces which have valid HAPAS certificates, expired HAPAS ceritifcates and roads which are noted to be low noise road surface but have no certificates. The expected RSI of these roads is therefore less than -3.5 dB, although these roads have been modelled as having an RSI of -3.5 dB.

REFERENCE MAP



REV	DATE	REVISION NOTE	ORIG	CHK'D	APP'D
0	September 2023	DEADLINE 5 SUBMISSION	TL	AC	SB

DESIGNER
Stantec

CONTRACTOR
VolkerFitzpatrick

CLIENT
national highways

PROJECT TITLE
M3 JUNCTION 9 IMPROVEMENT SCHEME

PROJECT STAGE
PCF STAGE 4

DRAWING TITLE
Q13.2.4 FIGURE 1: EXISTING ROADS WITH LOW NOISE SURFACING

SUITABILITY
DEADLINE 5 SUBMISSION

SHEET SIZE: A3 | SCALE: 1:20,000 | STATUS: REV 0

DRAWING NUMBER
HE551511-VFK-ENV-XXXX_XX_DR-LA-40001

Appendix E Pinch point POPE report

POPE of Pinch Point Schemes

M3 Junction 9 - A34 - Easton Lane Signals Evaluation Report

Highways England

June 2016

ATKINS

working on behalf of

highways england

Notice

This document and its contents have been prepared and are intended solely for Highways England's information and use in relation to POPE of Pinch Point Evaluations.

Atkins Transportation assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 43 pages including the cover.

Document history

Job number: 5140673			**Document ref:**			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Initial draft	AL	AB	RF	PR	Feb 16
2.0	RM comments addressed	AL		RF	RF	June 16

Table of contents

Glossary

Term	a.k.a.	Definition
Accessibility	-	Accessibility can be defined as 'ease of reaching'. The accessibility objective is concerned with increasing the ability with which people in different locations, and with differing availability of transport, can reach different types of facility.
Annual Average Daily Traffic	**AADT**	The 24 hour total traffic flow for the average day of the year
Appraisal Summary Table	**AST**	This records the impacts of the scheme according to the Government's five key objects for transport, as defined in **DfT** guidance contained on its **Transport Analysis Guidance** web pages, **WebTAG**
Automatic Traffic Count	**ATC**	An automated method of recording the volume (and sometimes classification) of vehicles passing a particular point on a road.
Average Daily Traffic	**ADT**	The 24 hour total traffic flow on an average day over a certain time period (Monday – Sunday)
Average Weekday Traffic	**AWT**	The 24 hour total traffic flow on an average weekday over a certain time period (Monday – Friday)
Benefit Cost Ratio	**BCR**	Benefit Cost Ratio is a ratio identifying the relationship between cost and benefits of a proposed project
Capitalisation	-	The process by which benefits for a scheme are factored to give an estimate for the appropriate appraisal period
Department for Transport	**DfT**	A Government department whose objective is to oversee the delivery of a reliable, safe and secure transport system that responds efficiently to the needs of individuals and business whilst safeguarding our environment. The **HA** is an executive of the **DfT**
Discounting	-	A technique used to compare costs and benefits that occur in different time periods and is the process of adjusting future cash flows to their present values to reflect the time value of money, e.g. £1 worth of benefits now is worth more than £1 in the future. A standard base year needs to be used which is 2002 for the appraisal used in this report
Dis-benefit	-	A negative benefit or something that detracts from the performance.
Evaluation Summary Table	**EST**	In **POPE** studies, this is a summary of the evaluations of the **TAG** objectives using a similar format to the forecasts in the **AST**

First Year Rate of Return	**FYRR**	First Year Rate of Return is the ratio of money gained on an investment relative to the amount of money invested.
Killed or Seriously Injured	**KSI**	A term used to describe the number of people killed or seriously injured as a result of **PICs.**
Local Network Management Scheme	**LNMS**	LNMS are improvement schemes where total overall estimated cost (including design, land, works, supervision, risk and VAT) is less than £10 million. They are categorised by the Government under Safety, Economy, Accessibility, Integration and Environment
Managing Agent Contractor	**MAC**	Responsible for the operation, maintenance, and improvement of the motorway and trunk road network of a HA area
New Approach to Appraisal	**NATA**	Used for transport scheme appraisal since 1998
Optimism Bias	**-**	Is a demonstrated systematic, tendency for project appraisers to be overly optimistic, and in effect, results in an underestimation of scheme costs. The base cost estimate is adjusted to account for optimism bias in order to obtain more accurate cost estimates.
Project Appraisal Report	**PAR**	A key document summarising the need for a project, plus its costs and benefits (including those that cannot be quantified in monetary terms)
Personal Injury Collison	**PIC**	A term commonly used to refer to road accidents
Post-Opening Project Evaluation	**POPE**	Before and after monitoring of all highway schemes in England
Present Value of Costs	**PVC**	Present Value of Costs is a term used in cost-benefit analysis and project appraisal that refers to the discounted sum, or Present Value, of a stream of costs associated with a project or proposal
Risk Allowance	**-**	**Risk** refers to identifiable future situations that could result in an over spend or under spend occurring. The base cost estimate is adjusted to account for risk in order to obtain more accurate cost estimates
Severance	**-**	Community severance is the separation of adjacent areas by road or heavy traffic, causing negative impact on non-motorised users, particularly pedestrians
STATS19	**-**	A database of injury accident statistics recorded by police officers attending accidents
Traffic Database System	**TRADS**	Traffic count database developed by the HA, to hold data from traffic monitoring sites on the strategic network

About this report

This report presents the findings of the evaluation of the M3 Junction 9, Easton Lane signalisation pinch point scheme. The purpose of evaluation is to examine post-scheme evidence to see how each scheme is currently performing and whether it is likely to deliver its intended outcomes. The forecast outcomes are stated in the documents used to gain funding for the scheme; typically a Project Appraisal Report (PAR) accompanied by supporting data.

The Pinch Point Programme

The Pinch Point Programme is a collective term used for growth initiative schemes that were announced during the Chancellor's Autumn Statement 2011. The schemes aim to improve the strategic road network (congestion or safety) and to stimulate growth through the local economy or through related gateways. Alternatively, they can be technology schemes, implementing Motorway Incident Detection and Automatic Signalling (MIDAS), CCTV, Variable Message Sign (VMS) or controlled motorway to improve the use of the strategic road network.

The programme resulted in 124 schemes being shortlisted by Highways England for construction. However, during the construction period, a number of these were either delayed, merged or cancelled, which meant that by April 2015 (when all schemes were to be completed) 119 schemes remained in the programme. The POPE team endeavour to evaluate as many of these 119 schemes as possible, to understand how the programme is performing, and to draw conclusions that may assist with future investment decisions.

Easton Lane signalisation (M3 Junction 9) evaluation

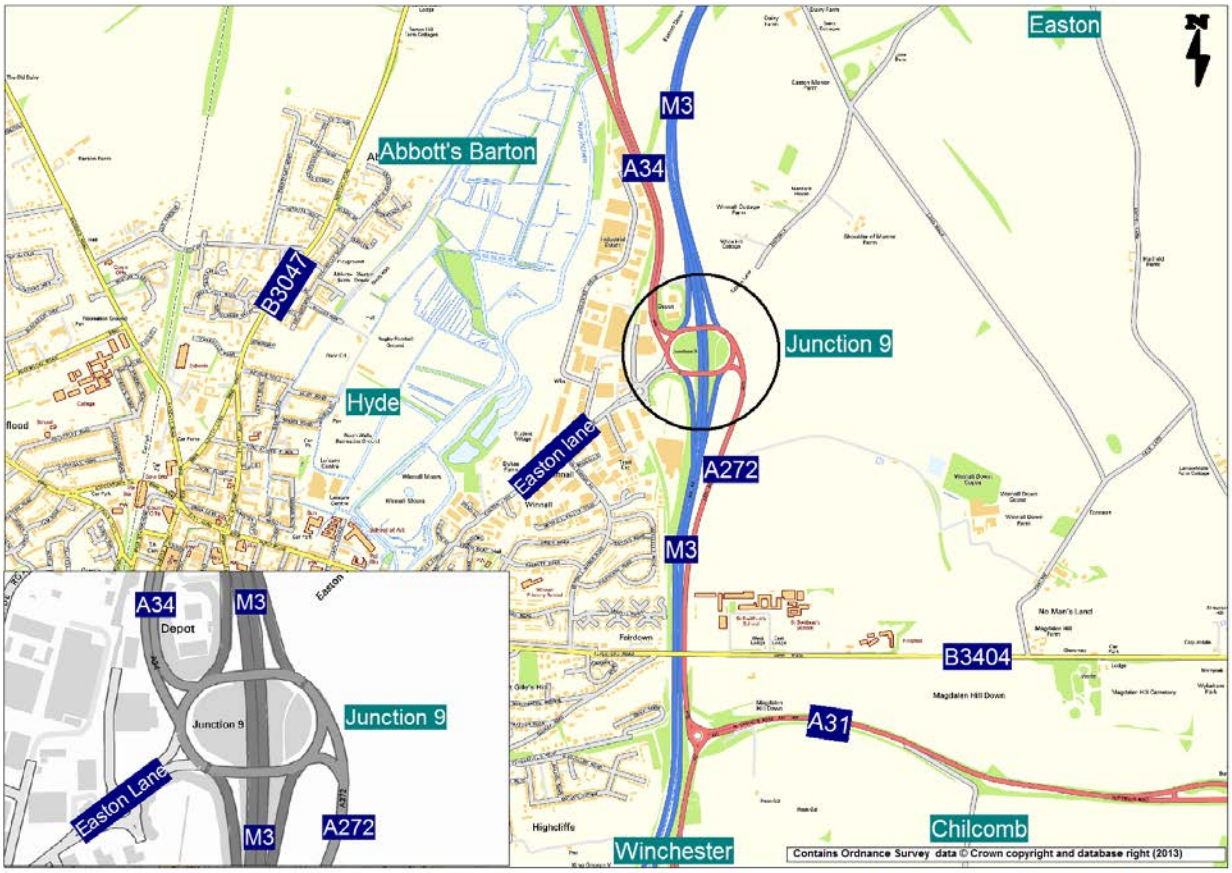
The evaluation presented in this report for the A34 Easton Lane signalisation scheme at M3 Junction 9 has been through a thorough pre-scheme planning process, in which a scheme evaluation plan was designed outlining what should be analysed during this evaluation. Each scheme is scored on each of the WebTAG objectives in the PAR, and on 4 policy criteria (local economic growth, gateways, housing growth and employment growth) in the supporting appraisal. However, while the schemes are appraised on these measures, many of the schemes implement measures that will have no impact on some objectives. As such, it is agreed that only the following objectives (with ticks) will be considered in this evaluation report, with all other aspects considered not applicable[1].

POLICY		ENVIRONMENT		SOCIETY	
Housing	✔	Noise		Physical Activity	
Employment	✔	Air Quality		Journey Quality	✔
Local Economic Growth		Greenhouse Gases		Accidents	✔
Gateways	✔	Landscape	✔	Security	
ECONOMY		Townscape		Access to Services	
TEE	✔	Heritage		Affordability	
Reliability	✔	Biodiversity	✔	Severance	
Regeneration		Water Environment		Option Values	
Wider Impacts					

[1] Note that the housing and employment growth evaluations (if required) will be added to this report during a series of updates in 2020, when sufficient time has passed for this growth to occur and be measurable

Introducing the scheme

The scheme is located at M3 Junction 9, which is a grade separated 5 arm roundabout where the M3 meets the A34 Winchester By-Pass, the A272 and Easton Lane (unclassified) near Winchester, Hampshire, in the south east of England. The junction is otherwise known as the Winnall roundabout. The map below shows the location of the junction.



The M3 on and off slips form the north and south arms of the junction. The Easton Lane arm of the junction provides access from the city of Winchester, which is situated immediately to the south west of Junction 9. The A34 and the A272 together provide a north-south by-pass route around Winchester connecting to the A31 which leads to the south of Winchester and to the southbound M3 at Junction 10. The A272 also provides access to villages and towns in the South Downs, immediately to the east of the M3.

Prior to the scheme the junction was partially signalised – the Easton Lane and A272 arms were not signalised while all M3 and A34 arms were signalised. The junction was reported to have severe congestion at peak times and a higher than average collision rate.

What is the scheme and its purpose?

The scheme aims to reduce congestion and journey times for road users and to improve the safety of the roundabout with a combination of signalisation, carriageway widening and realigning lane markings to add capacity. Specifically the scheme elements are:

- Widening the Easton Lane approach from 2 to 3 lanes through flaring (approximately 55m from the stop line);

- Signalising the Easton Lane arm of the roundabout;
- Widening the eastern section of the circulatory carriageway from 2 to 3 lanes;
- Realigning the 2 lanes on the southern bridge of the roundabout to accommodate 3 lanes.

The images below show the new (post implementation) layout of the junction where improvements have been made.

Above: *Widened Easton Lane approach © Google 2015*

Above: *Signals/stop line on the circulatory carriageway, junction with Easton Lane © Google 2015*

Above: *Southern bridge lane markings realigned to three lanes © Google 2015*

Above: *Eastern circulatory carriageway widened to three lanes© Google 2015*

The PAR describes the junction and scheme elements as shown above, but also adds that the junction has a higher than average collision rate and notes extensive queuing on certain arms, though it has not named specific arms or locations of concern. The PAR describes the purpose of the scheme as twofold:

- Reduce congestion at the junction, and in particular improve throughput on Easton Lane without compromising traffic throughput from the M3 to A34 and the circulatory carriageway;
- Reduce collisions on the roundabout, generally anticipating collision savings of 0.68 personal injury collisions (PIC) in the opening year.

The scheme was also appraised against policy objectives, which thought the scheme would contribute towards economic benefit to:

- 3 housing developments in and around Winchester;
- 2 employment developments, in Winchester and Weeke;
- 2 gateways: Southampton Port and Southampton Airport.

What were the timescales and costs?

The scheme was predicted in the PAR to open in December 2013 at a cost of £1,009,726 (2010 prices discounted to opening year). Scheme construction began on 28 October 2013 and completed on 9 December 2013. The outturn cost was around 13% lower than expected at £878,445.

The PAR states the life of the scheme as 60 years, considering there to be around £500 of additional maintenance costs each year. As no better information was provided for the outturn, the maintenance cost has been assumed to be the same following construction. The predicted and outturn costs, inclusive of construction and maintenance, are summarised in the following table.

Scheme Costs (2010 prices)	PAR	Outturn
Cost (construction and maintenance)	£1,009,726	£878,445

Site Visit Observations

A site visit was conducted on the afternoon of 17th November 2015 to confirm the construction was in line with the plans and to observe traffic behaviour at the site. Conditions at the time of the site visit are summarised as follows:

- The weather was dry but windy at the time. The road surface was wet following earlier rain;
- There was a broken-down vehicle on the A34 exit, approximately 20m from the roundabout, which was parked on the edge of the carriageway, partly on the verge, but meant only one lane of traffic could get around it. At the time of the site visit, traffic flows to the A34 appeared to be relatively low so the reduced exit capacity on the A34 northbound did not affect queuing or blocking back into the roundabout itself.

Under these conditions, the following observations were made on the works and physical characteristics:

- The highway works in terms of resurfacing, new signage and signals appeared to be of high quality and largely remaining in good condition. The exception was one of the new lane definition signs for the widened eastern section of the circulatory carriageway, which was moving in the wind;
- Some directional road markings on the widened eastern section of the circulatory carriageway have begun to fade; and
- Some debris has built up around the signals at the junction with Easton Lane.

In terms of junction operation and traffic behaviour, the following observations were made:

- In general there was fairly heavy traffic flow on the roundabout with some queuing at stop lines;
- On the Easton Lane approach, all three lanes were being used and for the correct destinations thanks to a large lane definition sign. At the time of the site visit, all traffic from Easton Lane could clear in a single signal sequence and as such there were no observed queuing problems to the upstream roundabout (at Tesco);
- However, the signals at the Easton Lane junction caused traffic to block back on the circulatory carriageway to the upstream signals at the M3 northbound off slip from Southampton, causing traffic exiting to Easton Lane to have to drive around the waiting traffic;
- On the widened eastern section of the circulatory carriageway, traffic heading for the M3 southbound on slip toward Southampton often incorrectly used the inside lane of the roundabout before cutting across at the last minute to the exit. This happened as often as every 10-15 seconds;
- Queuing on the southern bridge caused traffic to block back to the M3 southbound on slip, causing some sudden slowing and weaving to avoid stationary traffic;
- When the M3 northbound off slip signal goes green, the traffic coming off the M3 is then held at the new Easton Lane signals, which causes blocking back on the circulatory carriageway. It feels as if better synchronisation of these two sets of signals (M3 south arm off slip and Easton Lane) may be needed;
- Traffic from the A272 does struggle to enter the roundabout with vehicles observed to be waiting 20 or so seconds at the give way entry. This is probably a consequence of the three lanes of traffic now flowing around this part of the junction; and
- On the southern bridge of the roundabout where lane markings have been realigned to provide three lanes, all lanes are being used, but there is often significant queuing which extends back as described above.

The photographs below show examples of queuing on the circulatory carriageway, between the M3 northbound off slip and Easton Lane.

Above: *Queuing on the circulatory carriageway – Easton Lane exit arm in foreground*

Above: *Queuing between M3 northbound off slip and the circulatory carriageway junction with Easton Lane – viewed from the southern bridge stop line*

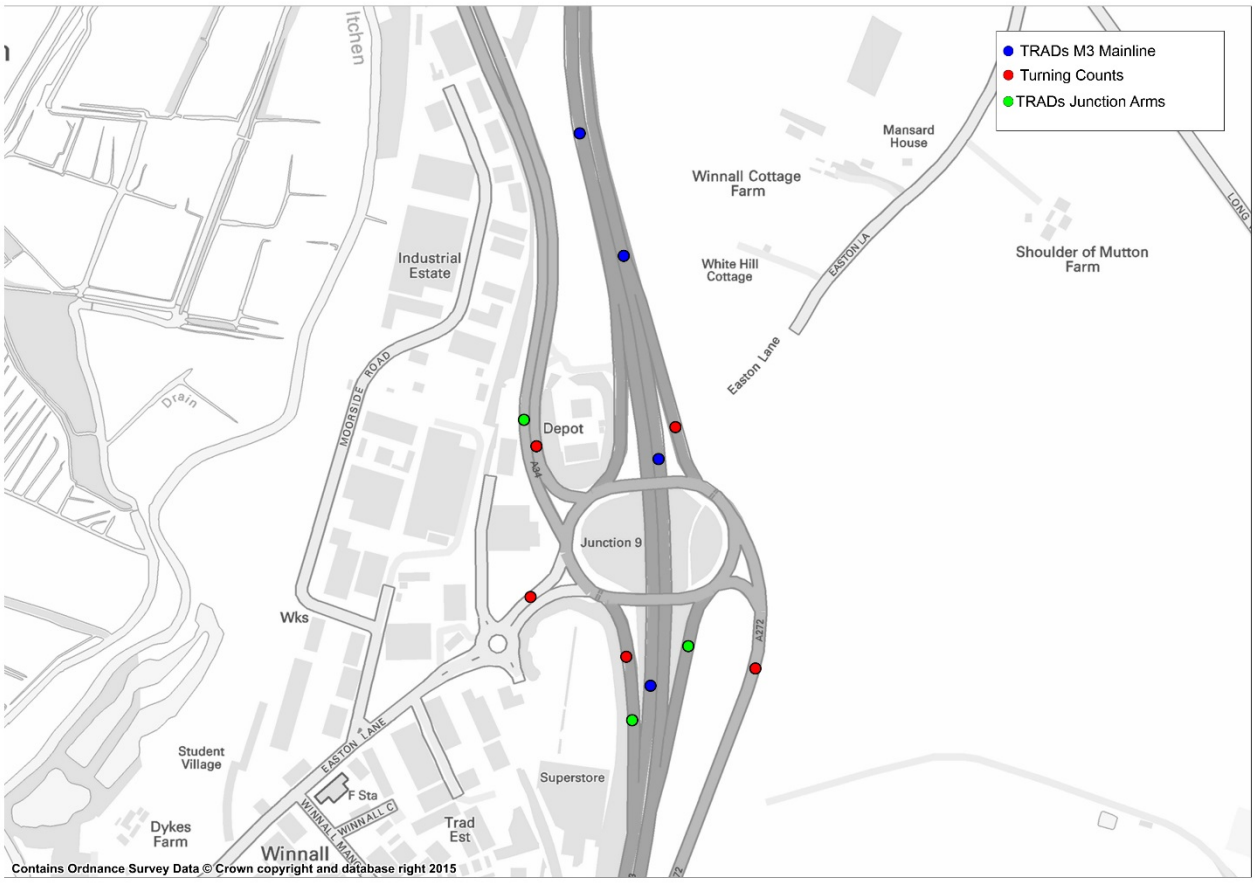
Traffic Profile

In this section, the profile and behaviour of traffic in and around the M3 Junction 9, Easton Lane Signalisation scheme will be discussed, so that the context for the scheme and its analysis can be understood. Specifically, this section will outline how traffic flows at the scheme differ between different movements, how traffic varies throughout the year, week and day, and finally whether the implementation of the scheme has changed the flow profile at all. This section will rely on data collected on traffic profiles from a number of sources including turning counts and continuous TRADS counting sites. This section concludes by outlining how the journey time and reliability evaluation will proceed, based on what we have learnt about the traffic profile at this scheme.

Have traffic levels changed at the junction?

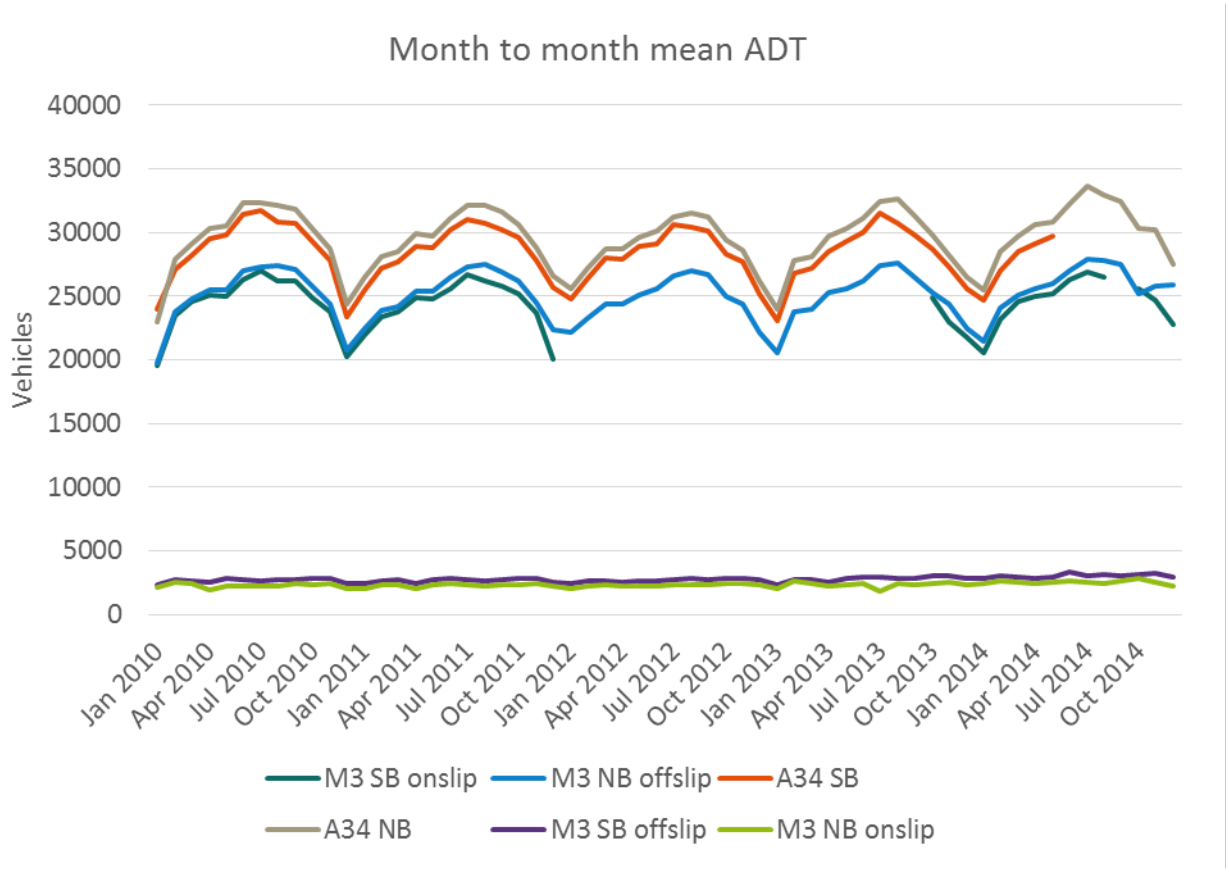
Using long term TRADS count sites at the M3 slip roads on the south arm and the A34, it is possible to look at the long term traffic behaviour at the scheme junction. For the M3 north arm slip roads, there are no TRADS count sites directly on the slip roads. However there are count sites in both directions on the M3 mainline immediately upstream and downstream of the north arm slip roads with no other traffic leaving or joining the M3 between these sites. Therefore, in order to make a rough check against the observed turning count data, it was possible to derive approximate flow totals for the slip roads from the differences between upstream and downstream count sites.

The map below shows the locations of the TRADS sites along the M3 and A34 and the turning counts at the roundabout.



The graph below shows ADT data by month from 2010 to 2014, with the tables following demonstrating the year on year changes in ADT. It should be noted that some of the count data

was missing during the 2014 calendar year; and therefore the mean ADT values do not fully reflect an “annual” average. However, there is still some value in understanding average ADT values even from less than one full year for the purposes of identifying any potential obvious changes in traffic patterns. The ADTs on the affected links are presented in grey italics, for information.



M3 south arm ADT

Year	M3 SB on slip	Year on Year Change	M3 NB off slip	Year on Year Change
2010	24,348		24,894	
2011	24,328	-0.1%	25,197	1.2%
2012	-	-	24,717	-1.9%
2013	-	-	24,909	0.8%
2014	24,548	-	*25,817*	*3.6%*

A34 ADT

Year	A34 SB	Year on Year Change	A34 NB	Year on Year Change
2010	28,650		29,402	
2011	28,595	-0.2%	29,632	0.8%
2012	28,109	-1.7%	29,015	-2.1%
2013	28,216	0.4%	29,318	1.0%
2014	*28,852*	*2.3%*	30,353	3.5%

M3 north ADT[2]

Year	M3 SB off slip	Year on Year Change	M3 NB on slip	Year on Year Change
2010	2,650		2,254	
2011	2,666	0.6%	2,276	1.0%
2012	2,659	-0.3%	2,277	0.1%
2013	2,786	4.8%	2,335	2.5%
2014	3,023	8.5%	*2,316*	*-0.8%*

For all approaches to the junction, except the M3 north arm, the graphs demonstrate that there are seasonal fluctuations, with traffic volumes tending to be highest during the summer (May-September) and lowest in winter (December-January). The graphs also show that, in general, there are no obvious trends on a year to year basis prior to the scheme. Similarly, the graph suggests that traffic volumes were not greatly affected during the construction period (28 October to 9 December 2013).

It should be noted that, although there was no reliable data at the TRADS count site on the M3 SB on slip during 2012 and 2013, the graph of available data follows a similar seasonal pattern through the year, with no obvious significant changes in year on year trends.

It should also be noted that on the A34 SB approach, post scheme opening on 9 December 2013, the graph shows that traffic volumes began to follow the expected seasonal trend through the beginning of 2014. However, resurfacing of the A34 occurred in June 2014 and from then on, count data on this link was incomplete, as shown in the flow profile above.

On the M3 north arms, the table suggests there has been around 8.5% growth in traffic between 2013 and 2014, which may be as a result of the scheme. However, keeping in mind that the baseline derived ADTs on this arm are approximately 10% of the M3 south arm and A34 ADTs, small fluctuations in traffic volumes will yield disproportionately large percentage changes. Furthermore, guidance tells us that unless traffic changes by more than 10% we cannot be confident that the change is real, as traffic counts are only accurate to +/-10%. As such, there is insufficient evidence of significant sustained flow change here and this evaluation can proceed assuming no change caused by the scheme.

Finally, it is also worth noting that the estimated ADT values for the north arm slip roads derived from M3 mainline TRADS site data are consistent with the low traffic demand observed in the turning counts.

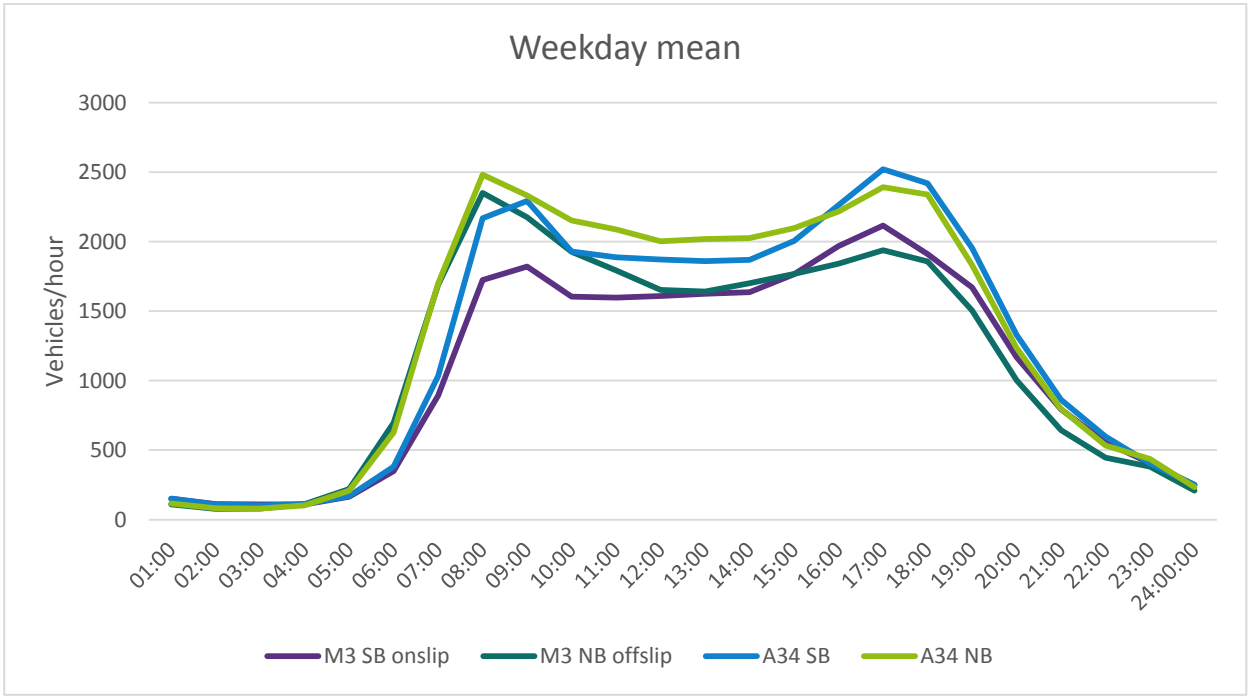
How does junction demand change during the typical week?

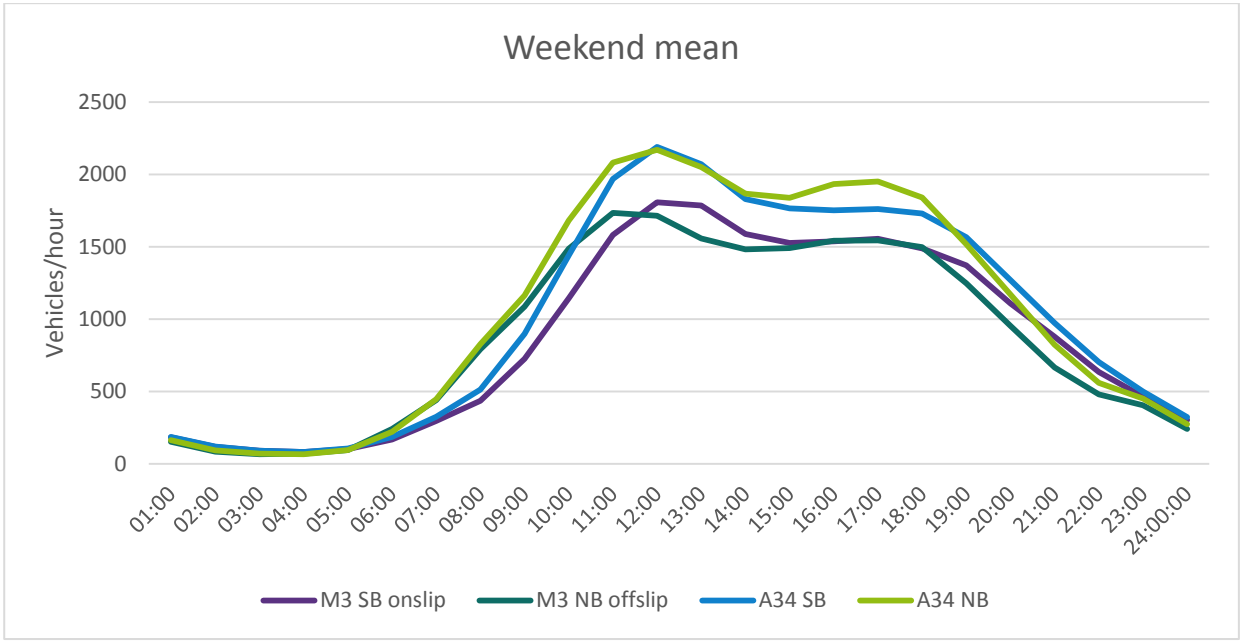
In order to understand how a scheme has affected a junction, we need to first understand the natural demand profiles at the site. Typically, schemes affect peak periods and non-peak periods differently, and so understanding the demand profile throughout the week is critical to a good evaluation.

To provide evidence to understand the profile, the following two graphs have been plotted to show the 2014 daily flow profiles for weekday and weekend traffic respectively. Both are based on

[2] ADT flows derived from the difference between upstream and downstream mainline TRADS sites.

TRADS data on the M3 south arm (southbound on slip and northbound off slip) and on the A34 northwest arm.





The weekday traffic profile is fairly typical, with a rise in traffic to an AM peak period, then a moderate level of traffic during the inter-peak and a second PM peak period. The peak periods relate to typical commuting times. The overnight flows are low as is typical across the road network.

The weekend shows a different profile, but again fairly typical for the UK road network. Traffic increases throughout the morning to a late morning peak between 11am and 1pm. From 1pm,

traffic levels fall slightly before holding steady until the early evening, at which point traffic flows steadily fall to low overnight levels.

In order to allow journey time analysis to be undertaken, it is necessary to group similar time periods together (those with similar levels of flow) so that these periods can be analysed as one. Therefore, based on the evidence provided here, it is considered appropriate that the following distinct traffic phases are used for journey time analysis in the next section of this report:

Period Name	Days	Times
AM Peak	Mon-Fri	0700-0900
Inter Peak	Mon-Fri	0900-1600 &1800-2000
PM Peak	Mon-Fri	1600-1800
Overnight	Mon-Fri Sat-Sun	2000-0700 1900-0900
Weekend morning to afternoon	Sat-Sun	1100-1400
Weekend afternoon to evening	Sat-Sun	1400-1800
Weekend off peak	Sat-Sun	0900-1100 & 1800-1900

Which are the key movements around the junction?

The M3 Junction 9 roundabout has five arms, serving the north and south arms of the M3, the A34 (to the northwest of the junction), the A272 (to the South Downs) and Easton Lane (to the city of Winchester). A high-level understanding of traffic flows through the junction may help us to understand how the junction operates, how the junction might function in the context of the wider network and give insight into why issues are occurring. Analyses of turning counts both before and after the scheme should provide this insight.

The table below shows the 12 hour (0700-1900) percentage movements between the five arms based on a weekday turning count in July 2015. This survey counted a total of 66,309 vehicles during the 12 hour period.

Post-scheme turning proportions	M3 NB on-slip	A34 (T) Winchester By-Pass	Easton Lane	M3 SB on-slip	A272
M3 SB off-slip	0%	1%	2%	0%	1%
A34 (T) Winchester By-Pass	0%	0%	4%	**31%**	6%
Easton Lane	2%	6%	0%	4%	1%
M3 NB off-slip	0%	**29%**	5%	0%	0%
A272	0%	5%	2%	0%	0%

The table demonstrates that, although the scheme junction handles a large number of vehicles during the 12 hour weekday period, around 60% of traffic through the junction follows two movements – both directions between the A34 (to the northwest) and the M3 south arm (toward Southampton) – and the levels of demand are roughly equal in each direction (around 29-31%).

The remaining traffic demand through the junction appears to be split roughly equally between through traffic along the A272 and A34 in both directions (5-6% in each direction); between Easton Lane and the A34 (4-6% in each direction) and between Easton Lane and the M3 south arm (4-5% in each direction). Comparing proportions before and after the scheme suggests that the levels of demand to and from each approach to the junction have remained practically unchanged.

Traffic movements to and from the M3 north arm are the least significant relative to all flows through the junction, with no movements exceeding 2% of 12-hour traffic totals through the junction. While these traffic volumes are significantly lower than the volumes for movements between the other four arms, the traffic counts do suggest the M3 north arm provides access to the towns of Winchester and its surrounding villages as well as to villages in the South Downs for a reasonable number of people – most traffic moves to/from Easton Lane (around 1,000 vehicles in 12 hours) with non-trivial levels of demand to the A34 and A272 (around 550 and 900 vehicles in 12 hours, respectively).

The survey of turning movements suggests that the roundabout largely serves traffic flowing between the A34 and the M3 south arm; but also shows that the junction and Easton Lane form a key access route to/from Winchester and nearby villages. This helps validate one of the scheme's original objectives to increase throughput on the Easton Lane arm without compromising roundabout operations, this evaluation will assess journey time impacts from all arms. Therefore, despite the large differences in absolute traffic volume on each arm it was considered important to continue considering the scheme's impacts on each arm.

Journey Times and Reliability

One of the core reasons stated by Highways England for the pinch point programme was to deliver schemes aimed at reducing congestion on the strategic road network. The M3 Junction 9 improvements scheme has forecast benefits to journey times, and hence it is necessary to evaluate the impact of the scheme on journey times and reliability using observed pre- and post-scheme data. That is the purpose of this section, in which the total vehicle hour impact, monetary impact and reliability impact of the scheme will be reported.

For the journey time analysis, Sat Nav data has been used to inform pre- and post-scheme journey times. This data is available from some motorists who use satellite navigation devices and allow their data to be used anonymously for the purpose of generating travel statistics. The data also has the benefit of being historic, so that it is possible to retrieve pre-scheme journey time data after the scheme has opened.

Which journey times will we analyse?

The analysis presented in this section will be based on journey time data provided anonymously by satellite navigation device users. This data source allows us to consider a year prior to construction and year post opening on various routes to consider what impact the scheme has had on average through the year. As mentioned in the traffic profiles analysis in the previous section, it should be noted that resurfacing works on the A34 took place in June 2014 and journey times would have been affected by these works. Therefore, this evaluation has selected journey time data spanning from July 2014 to June 2015 – the first full calendar year post opening and after the resurfacing works. The periods for journey time analysis are summarised as follows:

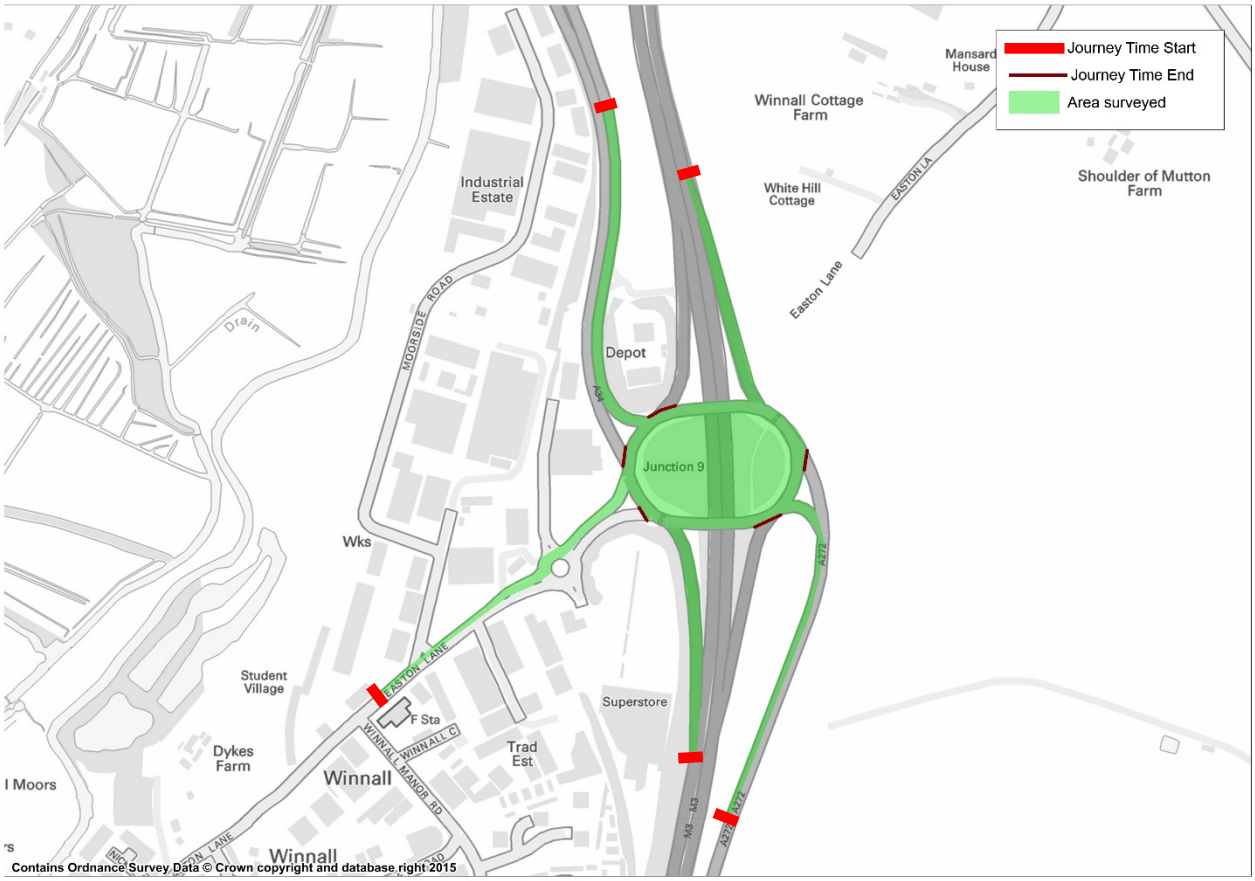
- Pre-scheme: 1 Oct 2012-30 Sep 2013;
- Post-scheme: 1 Jul 2014-30 Jun 2015.

As demonstrated in the traffic profiles section earlier in this report, the dominant traffic flows are between the A34 and the M3 south arms in both directions. However, the scheme's aims are to reduce congestion at the junction in general and improve throughput on Easton Lane without compromising traffic throughput from the M3, A34 and the circulatory carriageway. The PAR also cited concerns about queuing on certain arms and a higher than average collision rate at the junction. Therefore this analysis has considered journey time impacts on all junction turning movements.

Route start points are chosen at a specific distance from the junction to include queuing on the approach, but attempt to exclude potential other sources of delay such as other upstream junctions. Route end points are set immediately at the exit of the junction as any changes beyond these points are not likely to be due to the scheme. Start points for this evaluation are defined as follows.

- M3 NB off slip (south arm) – 350m before stop line (beginning of the off slip ramp);
- M3 SB off slip (north arm) – 350m before stop line (beginning of the off slip ramp);
- Easton Lane – 500m before give-way line or stop line. Note that this route includes travelling through the upstream junction;
- A34 – 500m before stop line;
- A272 – 500m before give-way line.

The map below shows the region in which journey time routes were considered.



What are the journey time impacts of this scheme?

The results from the satellite navigation data, split into the seven time periods defined in the traffic profiles chapter are summarised in the table below. This is an abbreviated table just showing the total vehicles hours saved for each movement and time period, the full breakdown of the analysis (showing the flows and journey time changes per vehicle used in the calculations) are shown in Appendix B.

Opening Year, Vehicle Hours Saved*								
Movement/ Time Period	**AM Peak**	**Inter Peak**	**PM Peak**	**Over Night**	**Wkend AM-Mid day**	**Wkend PM**	**Wkend Off Peak**	**Arm Totals**
M3 south to A272	5	10	0	6	0	0	2	**-5,267**
M3 south to A34	-426	-2965	-2338	1650	-785	-622	-138	
M3 south to Easton Lane	54	16	-177	400	-39	-11	26	
M3 south to M3 north	42	7	0	11	0	0	2	
Easton Lane to A272	297	2129	2475	73	210	70	134	**46,932**
Easton Lane to A34	613	7873	9066	-179	714	129	344	
Easton Lane to M3 north	828	3014	3527	110	315	99	202	
Easton Lane to M3 south	585	6066	6941	175	573	183	365	
A34 to A272	280	1491	-323	56	329	59	146	**8,469**
A34 to Easton Lane	-522	-1696	-1109	-381	-147	-333	-129	
A34 to M3 north	9	70	-24	2	16	1	6	
A34 to M3 south	1669	7831	-1563	68	1685	241	737	
M3 north to A272	-62	-83	8	-3	37	-31	19	**-4,238**
M3 north to A34	-277	-706	-252	-118	-73	-117	-46	
M3 north to Easton Lane	-538	-1001	-472	-170	-102	-182	-68	
M3 north to M3 south	0	-1	0	0	0	0	0	
A272 to A34	-3210	-5172	-2477	-815	-1016	-858	-366	**-19,208**
A272 to Easton Lane	-811	-1607	-828	-231	-308	-256	-106	
A272 to M3 north	-384	-339	-171	-39	-90	-75	-20	
A272 to M3 south	-11	-9	-4	-1	-3	-2	0	
Period Totals	**-1,859**	**14,929**	**12,279**	**615**	**1,319**	**-1,703**	**1,108**	**26,688**

* Note: Positive values reflect shorter journey times (time 'savings'), Negative values reflect longer journey times (losses)

The table shows that in the opening year, the scheme has demonstrated a net saving of **26,688** vehicle hours, though this is not split equally between the different routes and time periods.

The greatest benefit is to traffic on the Easton Lane approach but there are also substantial benefits for traffic on the A34 approach. These results are congruent with the scheme measures, which saw widening and signalisation of the Easton Lane approach and widening of the eastern section of the circulatory carriageway – the section through which approximately 75% of traffic from the A34 travels.

The largest negative impacts on journey time changes occur for traffic from the A272. As this approach is the only non-signalised entry to the junction, the delays on this approach are likely to be a result of the greater volumes of traffic on the circulatory carriageway – consistent with observations on site. However, the negative impacts upon traffic on this approach are offset by more than two times the benefits in vehicle hours to traffic on Easton Lane. This aspect of the scheme has clearly fulfilled the scheme objective to improve throughput on Easton Lane.

To a lower degree, traffic from the two M3 off-slips are also subject to increased journey times overall, but again these dis-benefits are offset by journey time savings for Easton Lane and the A34.

The distribution of benefits diurnally (column totals of vehicle hours saved) also makes for interesting analysis. For the junction overall, there are very large time savings during the weekday inter peak and evening commuting peak periods. In both time periods, there are consistently large time savings for traffic on Easton Lane. Although there are some dis-benefits to traffic on the M3 off slips and the A272, the magnitude of vehicle hours saved along Easton Lane offsets the increases in journey time on other approaches.

The above vehicle hour changes can be monetised using a theoretical value called the ‘value of time’. This associates a monetised value with each hour of time saved. When monetised, the opening year journey time savings of 26,688 vehicle hours equates to a monetised benefit of £371,765 in the opening year. It is possible to analyse this monetised impact in more detail by seeing how this breaks down into different time bands as shown in the following table.

Journey time change	Monetised Negative Impacts	Monetised Positive Impacts	Total Monetised Impacts
0-10 seconds	-£153,166	£219,701	**£66,535**
10-20 seconds	-£52,702	£41,398	**-£11,305**
20+ seconds	-£315,359	£631,894	**£316,535**
Total	**-£521,227**	**£892,993**	**£371,765**

This breakdown shows that the scheme gives rise to some winners, where there is a positive journey time impact, and losers, where there is a negative journey time impact. For the 0-10 second and 20+ second time bands, there are overall net positive journey time impacts. However, for the 10-20 second time band there is an overall net negative journey time impact, but the magnitudes of impact are relatively low compared with the positives.

It is noted that the impacts measured in the 0-10 second time band could be attributable to noise in the data or very small changes in journey times, so should be interpreted with some caution. However, the data does show large numbers of motorists experiencing large savings in journey times, in particular traffic from Easton Lane, where we are confident the savings can be attributed to the scheme.

The negative journey time impacts are largely felt by traffic coming off the M3 (north arm) off slip and coming from the A272. Other losers are some of the traffic coming off the M3 (south arm) off

slip, specifically traffic travelling northbound to the A34, due to the new signal installation at Easton Lane. Finally, traffic traversing almost the full roundabout from the A34 to exit at Easton Lane also experience longer journeys, probably due to queuing from the Easton Lane signal installation and queuing on the southern bridge of the roundabout.

As expected, the biggest winners are among traffic from Easton Lane, where the average journey time saving amounts to around 40s per vehicle throughout the day, though it should be noted that a small number of journey times during the off peak and overnight periods experience modest increases in journey times simply by virtue of the signal installation. During the periods of highest traffic flows, the journey time savings for traffic on the Easton Lane approach are significant: almost 40 seconds per vehicle during the AM Peak and typically around 150 seconds per vehicle in the PM Peak.

How do the journey time impacts compare to forecasts?

The PAR had forecast 41,460 vehicle hours to be saved in the opening year, amounting to £577,538 of benefits in the opening year and over £22m over the 60 year scheme life. This was based on saving 47 seconds per vehicle in the AM peak, and 44 seconds per vehicle in the PM peak.

Based on the evidence from the first year of opening, the scheme has actually brought about a more modest but still significant saving of 26,688 vehicle hours in the opening year. This means that the observed opening year benefit amounts to £371,765.

The table below summarises the key statistics relating to journey times.

Journey Time Impact	PAR	Outturn
Opening year vehicle hour saving	41,460	26,688
Opening year monetised journey time impact	£577,538	£371,765
Forecast scheme life monetised journey time impact	£22,790,219	£14,670,237

What was the impact of the scheme on journey time reliability?

In addition to average journey times, another key consideration is the reliability of journey times. Reliability is an important metric as motorists make their decisions on how long to allow for journeys based on their understanding of reliability, not on the average time it takes to travel. Reliability can be affected by changes to network resilience or by reductions in collisions, all of which can be the result of road schemes. The PAR estimated the scheme's journey time reliability impacts with reference to the day-to-day variability (DDV) as moderately beneficial on the basis of increased road capacity on oversaturated lanes; and assessed the 'incident related variability' (IRV) as slightly beneficial on the basis of reductions in collisions.

In evaluating the M3 Junction 9 scheme, journey time reliability will be assessed by considering the flow weighted 5th, 25th, 75th and 95th percentile journey times across all time periods and the following five movements (from each entry arm to the last exit of the junction).

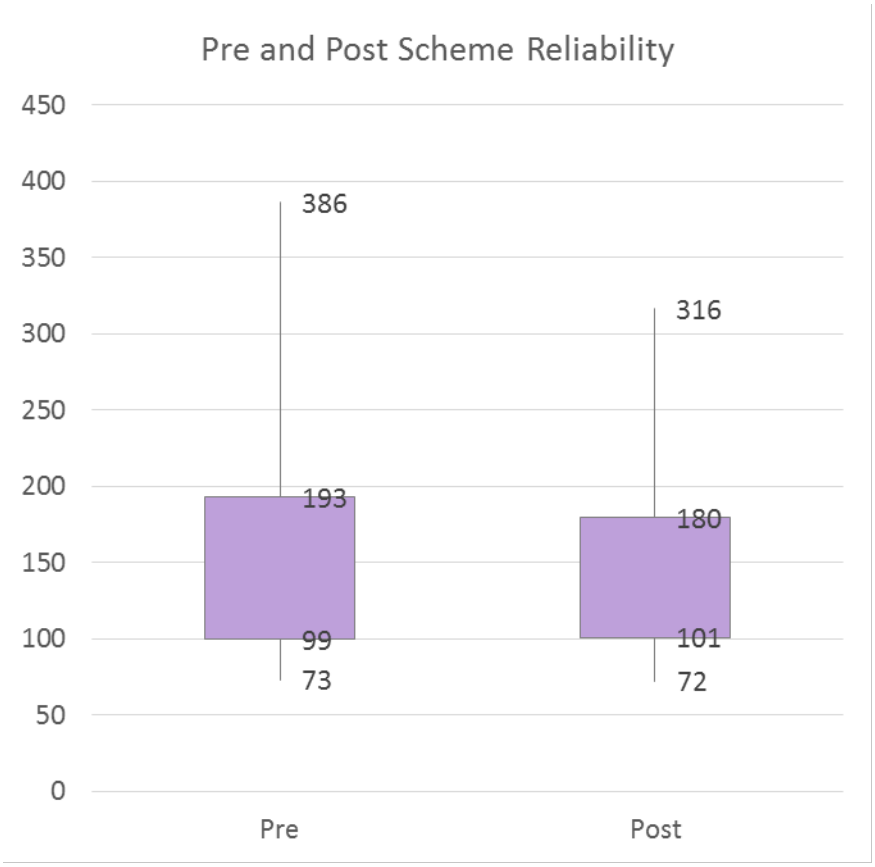
- Easton Lane to M3 south
- A34 to Easton Lane
- M3 north to A34
- A272 to M3 north

- M3 south to A272

The 5th percentile journey time can be interpreted as the time to travel through the scheme that only 1 in 20 vehicles go faster than. Conversely, the 95th percentile can be interpreted as the time you should allow to navigate the junction to be on time 19 times out of 20.

The headline results of the flow weighted reliability calculations at this junction are shown in the table and graph below. Note for the graph, the tails represent the 5th and 95th percentile journey times while the boxes represent the 25th to 75th percentile journey time range. A breakdown of journey time comparisons over the five movements is provided in Appendix C.

Flow Weighted Reliability Impact	Before	After	Difference
5th Percentile	73 sec	72 sec	-1 sec
25th Percentile	99 sec	101 sec	2 sec
75th Percentile	193 sec	180 sec	-13 sec
95th Percentile	386 sec	316 sec	-70 sec



The reliability data for the scheme demonstrates that the scheme has had an overall positive impact on reliability. Each of the 5th, 75th and 95th percentile journey times have reduced. The big changes are to the inter-quartile range and the 95th percentile. The inter-quartile range tells us that the core 50% of journeys through the scheme are slightly more reliable than before. In general the smaller ranges of journey times in the post-scheme data suggest that junction performance has become slightly more stable (i.e. less variation in journey time). This means that motorists could

have slightly more confidence when planning journeys. The 95th percentile tells us that during the most extreme circumstances (high traffic volumes, collisions or other incidents) the junction is performing much better than before, and so it is likely to be more resilient.

Overall the impacts are moderately positive and point to a modest improvement in reliability for all, and a large improvement for some. While we do not have sufficient evidence to conclusively state the impact on DDV and IRV, there are some hints in the data. The smaller inter-quartile range suggests that DDV reliability has improved slightly and the much lower 95th percentile journey time suggests the junction would be more resilient in the event of an incident.

Scheme Safety Record

All road schemes have the potential to impact the safety record of the surrounding area, and so in any evaluation it is crucial to look at pre- and post-scheme data to see if there is any evidence of accident rate changes. Safety was one of the stated objectives of Highways England when announcing the pinch point programme of schemes, alongside congestion relief and stimulating economic growth. The M3 Junction 9 improvement scheme specifically targeted an accident reduction, and therefore this section considers the impact of the scheme on safety, explores reasons for any changes, and culminates in the monetised safety impact of the scheme.

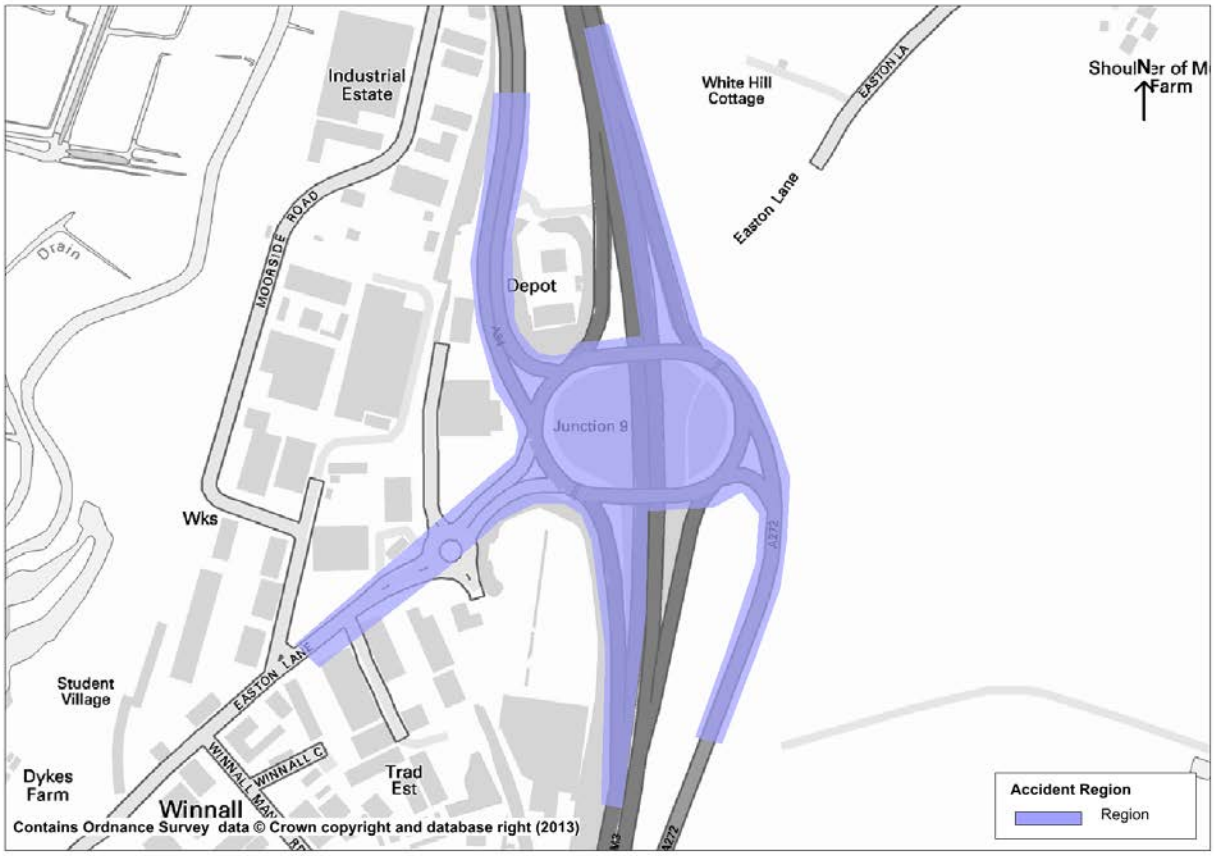
What impact did the appraisal predict for collisions?

The scheme appraisal documents claim that there have been 19 collisions (including 16 slight, 3 serious, 0 fatal) in the 5 calendar years from January 2008 to December 2012 prior to the scheme, however the documents noted that zero collisions were recorded during the 2012 calendar year. On this basis, the collision rate was recorded as 3.8 per annum, of which 0.6 per annum were KSIs. The appraisal predicted that the scheme would save 0.68 accidents in the opening year.

The appraisal documentation indicates that the geographic area covered by the accident data analysis included the *circulatory carriageway, all slip roads and the A34 for a distance of 350m from the circulatory carriageway* and the analysis was conducted by the Area 3 MAC. There is some ambiguity about whether the accident area included the Easton Lane and A272 approaches and the current data analysis makes clear that the recording of zero collisions in 2012 was incorrect.

When collision data provided by the DfT was analysed over the same period, 61 collisions (55 slight, 6 serious, 0 fatal) were found to have occurred (rate of 12.2 per annum). The difference between this rate and the notably lower accident rate in the appraisal documents may be explained by the exact area over which the analyses were conducted, as it is not always possible to ensure an exact match between appraisal and evaluation. It may also be explained by the fact that the appraisal recorded zero collisions in 2012 (in fact there were 8 in the calendar year).

Therefore, for the analysis in this section of the evaluation, the area shown in the map below will be used (note that mainline motorway collisions are removed from this analysis).



What impact has the scheme had on collisions to date?

Collision rates per annum are transient; fluctuating from year to year and therefore notoriously hard to realise over the short term. However, it is worth considering whether there is any initial evidence that the scheme has had an impact on collisions during this one year after evaluation. This includes updating the pre-scheme collision period to cover the 5 years just prior to the start of scheme construction, thus isolating the scheme as the only change between the before and after periods analysed. To do this, the analysis periods are as follows:

- Pre-scheme: Five year period from 01/10/2008-30/09/2013;
- Post-scheme: 15 months from the first month after opening 01/01/2014-31/03/2015.

Post-scheme analysis covered 15 months following the scheme opening (reflecting the available data at the time of writing) over the same area defined earlier in this section. The results of this analysis are shown in the table below (annual rates in italics):

	Dates	Slight	Serious	Fatal	Rate	Severity Index
5 Year Pre-Construction	October 2008 to September 2013	55 *(11.0)*	5 *(1.0)*	0 *(0.0)*	*12.0*	8%
Post-Scheme	January 2014 to March 2015	10 *(8.0)*	*2 (1.6)*	0 *(0.0)*	*9.6*	17%
Collision rate saving		*3.0*	*-0.6*	*0.0*	***2.4***	

The table shows that the collision rate was 12.0 per annum prior to the scheme, falling to 9.6 per annum since the scheme opened. This gives us an initial steer that the scheme has reduced collisions by around 2.4 per annum – over three times higher than the predicted collision savings of 0.68 reported in the appraisal documents.

With reference to this evaluation's pre-scheme rate of 12.0 per annum being much higher than the appraisal's pre-scheme rate of 3.8 per annum, it is important to note the strong likelihood that the data included in the appraisal analysis was incomplete. Therefore the metrics are not considered comparable.

With reference to this evaluation's pre-scheme and post-scheme rates of serious collisions, the available data suggests that there has been an increase from 1.0 to 1.6 serious collisions per annum. The reasons for this may be due to natural fluctuations and the inevitable distortions arising from calculating long term rates based on periods as short as 15 months' worth of post scheme opening collisions data. Later evaluations should reassess long term trends in collision rates to verify whether the increase might signify new problems.

However, based on the information available, the scheme is reforecast as making a saving of around 128 collisions over the 60 year scheme life. This has a large positive financial impact as summarised in the table below showing predicted and outturn impacts.

Safety Impact	PAR	Outturn
Collision reduction	0.68	2.4
Value of an accident (£)	£97,043.62	£97,043.62
Opening year monetised safety impact	£65,989.66	£232,904.68
Forecast scheme life monetised safety impact	£2.438m	£8.606m

What else can we learn from the collision record to date?

The outturn results to date also show an increase in severity index from 8% to 17% from pre-scheme to post-scheme. This is due to two serious collisions within the 15 months of post-scheme data, and so we appreciate that this may reduce if it is revisited over a longer post-opening period.

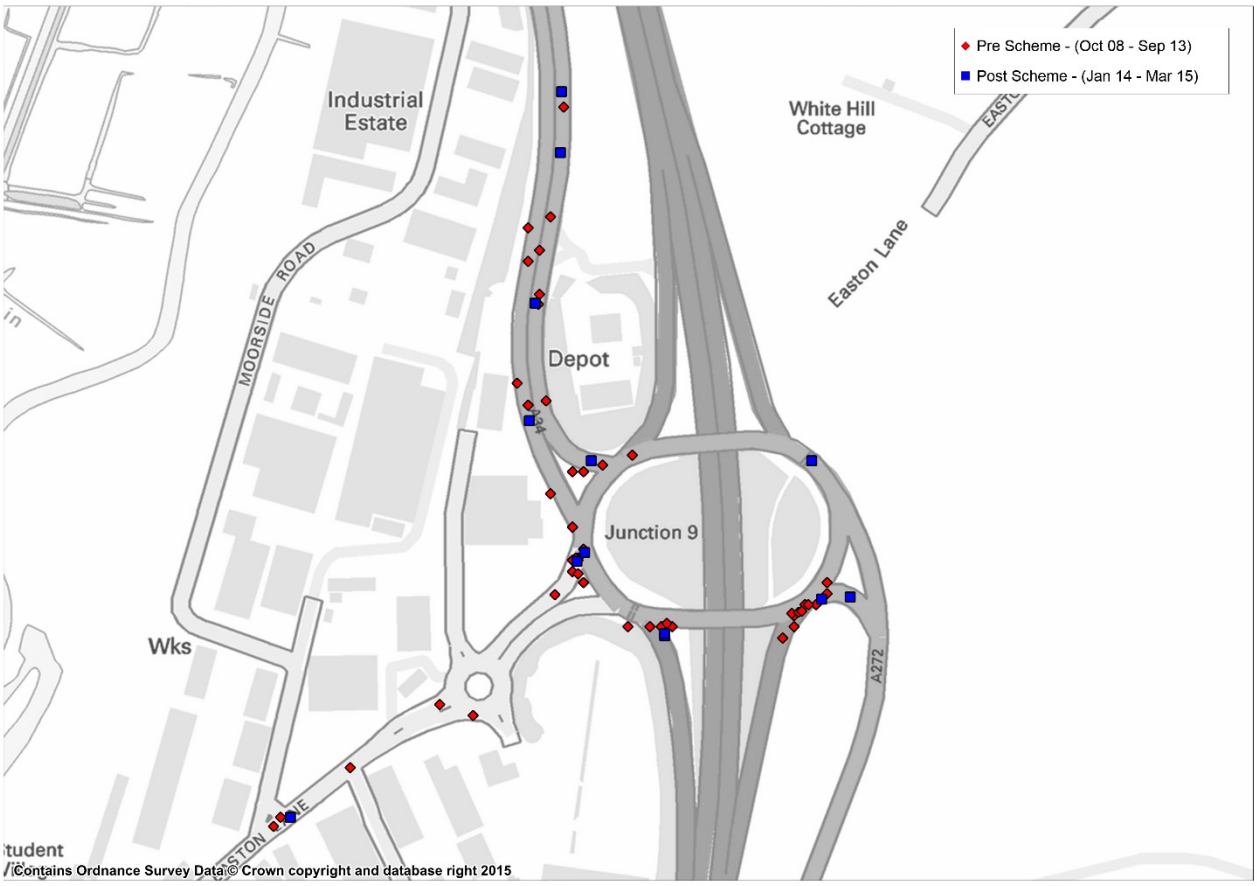
The diagram below shows the locations of collisions before and after the scheme. There are 5 years' of data in the before scheme plot and 15 months in the after plot and so we need to recall that there is a factor of 4 difference between the two datasets when interpreting the diagram.

With that in mind, there are no immediately obvious changes in collision locations, but the plotted points may begin to indicate some shifts where longer periods of post-scheme data may or may not point to changes in road safety. There are generally three clusters of collisions around the circulatory carriageway where different traffic flows interact and where the scheme may prove to have had some impact:

- the merge between the A272 entry and M3 south arm (on slip toward Southampton);
- the merge from M3 south arm (off-slip from M3 northbound); and
- the merge from Easton Lane.

Of these three clusters, the changes in relative numbers of collisions between the pre and post-scheme data occurring around the merge between the A272 and M3 on-slip may indicate a change in road safety. It is interesting to observe that the two collisions in this area have occurred only on the A272 approach itself, with no collisions on the circulating carriageway and on-slip. If longer term data shows this to be a real pattern of collisions, the pattern would be congruent with post-

scheme site observations of free flow conditions along the circulatory carriageway and the consequent queuing on the A272 approach arm. This should be revisited in later evaluations and may suggest road safety interventions may need to be considered.



In general, the headline figures indicating that annual collision rates have fallen between pre- and post-scheme are encouraging; and longer term post-scheme data may give evidence that the scheme has improved safety overall.

Studies of the manoeuvres, vehicle types and behaviour sections of the collision data generally show no interesting patterns, but there appears to have been a reduction in collisions in which vehicles were “slowing, stopped, waiting or moving off” (from 11.2 per annum pre-scheme to 7.2 per annum post-scheme). Reductions of collisions of this type could be consistent with a new signal installation where there was previously a priority entry to a roundabout. Future years’ evaluations may confirm this.

In summary, there is some indication that the collision rate has decreased in the 15 months after opening, and this should be verified again with long term post-scheme data in future years.

Policy Impacts

Each of the pinch point schemes was assessed on four policy objectives, namely:

- Local Economic Growth
- Gateways
- Housing Growth
- Employment Growth

This section considers the impact of the M3 Junction 9 improvements scheme on the policy objectives based on the best data available to date. Note that for this scheme, the appraisal didn't consider any benefits to enterprise zones or growth areas and so no local economic growth evaluation is required. At the time of writing, just the gateway evaluation will be included in this report. Please note that the evaluation of housing and employment impacts will be added to this section during the 2020 evaluation update.

Gateways

The scheme appraisal claimed that the M3 J9 Improvements scheme would improve connectivity to Southampton Airport and Southampton Port, approximately 13km and 26km distance from the scheme respectively. The appraisal scored the impacts on these gateways as 3 and 8-9 respectively, reflecting Southampton Port as a major international hub. Southampton Airport was scored lower as it is a locally significant gateway.

In order to determine the significance of the scheme to these two gateways, this evaluation considers TrafficMaster OD data after the scheme opened. The scheme will be evaluated based on the relevance of the scheme to the gateways themselves and the impact that the scheme has had on reducing congestion. The evaluation will not seek to assess access to the motorway network (something specified as a benefit in the appraisal) as this would be inconsistent with other scheme appraisal and evaluations.

Spot checks of map-based route planning tools online suggest that traffic accessing either of the two Southampton gateways from the A34 and regions to the northwest of the M3 Junction 9 would most likely travel through the roundabout to join the M3 SB toward Southampton. As such, the OD data collected uses the M3 SB on-slip as the origin to test the proportion of traffic travelling to the gateways.

OD data from TrafficMaster including all days of the 2014 calendar year has been acquired to measure the proportion of traffic that travel between M3 Junction 9 and the two Southampton gateways. These proportions were then factored by ADT flows on the southbound exit from the junction in order to calculate an estimate for the number of trips accessing the respective gateways each day. A summary of these estimates is provided in the table below.

Growth Area	Origin	Destination	Origin 2014 ADT (a)	Percentage OD movement in year (b)	Estimated 24hr trips (a)x(b)
Southampton Port	M3 J9 SB on-slip	Platform Road	24,548	0.50%	**123**
Southampton Airport	M3 J9 SB on-slip	Wide Lane	24,548	1.40%	**344**

The table shows that there were a noticeable number of TrafficMaster users observed at the scheme junction travelling to either of the Southampton gateways over a 24-hour period. This is considered evidence that the M3 Junction 9 scheme is relevant to traffic accessing the gateways. It appears that around 1% of traffic leaving the scheme junction towards Southampton travels to each of the gateways. As such the scheme's impact on reducing congestion will have some impact on connectivity to Southampton Airport and Southampton Port.

The analysis in the journey times and reliability section of this report shows that the scheme has had a net positive impact on congestion at the scheme location. Therefore, it is reasonable to assume that this scheme has had a positive impact on those who do travel between the scheme and either of the gateways. Descriptions of the assessments of relevance and impact are shown in the table below.

Gateway Summary	Relevance	Impact
Southampton Port	**Moderate.** Numbers of trips of the order of 123 estimated between the scheme and the port in a typical day. The port is of international significance, so although the numbers of trips are modest, the importance of individual journeys is likely to be greater.	**Beneficial**. The trips between the scheme and port are likely to experience beneficial impacts as shown in the journey time analysis in this report. Congestion has been relieved and journeys are more reliable.
Southampton Airport	**Moderate.** Numbers of trips on the order of 344 estimated between the scheme and the airport in a typical day. The airport is of local significance, but numbers of trips affected are greater.	**Beneficial**. The trips between the scheme and airport are likely to experience beneficial impacts as shown in the journey time analysis in this report. Congestion has been relieved and journeys are more reliable.
Overall	**Moderate**	**Beneficial**

All Other WebTAG Impacts

There are 20 WebTAG objectives considered during each pinch point appraisal. Journey Times (TEE), Journey Time Reliability and Safety have been considered in separate sections earlier within this report. The remaining 17 objectives are not as ubiquitous as those objectives, and so require evaluation less frequently. As such, this section considers the relevant other WebTAG objectives related to the M3 Junction 9, Easton Lane Improvements scheme.

Environment – Landscape

The PAR identified the scheme as being located on the boundary of the South Downs National Park. However, the PAR notes that the junction is visually screened from the national park and all local properties by dense vegetation running along the perimeter of the highways estate. The PAR only notes that there will be slight negative impact during construction due to the construction vehicles and personnel on site, but that the impacts would be temporary. Therefore the scheme was assessed in the PAR as having a neutral impact overall.

For this evaluation, noting that the scheme elements have involved widening the Easton Lane approach and a short section of the circulatory carriageway, consideration was given to any potential unforeseen impacts, for example on landscaping or visual impacts from new signs or changes to the verges, the scheme may have had once built.

The widened approach to the junction on Easton Lane has involved altering the verge. Before the scheme, the boundary of the highway estate along Easton Lane was landscaped with tall shrubs and trees. Although there has been some carriageway widening, together with the installation of a new lane designation sign, the landscaping remains and screens the new sign from properties adjoining the highway. The image below shows the widened Easton Lane approach and the new sign in the context of landscaping on the approach.

Above: New signs on Easton Lane approach © *Google 2015*

In any case, the development on the adjoining property comprises a retail warehouse and car parking so the presence of the new highway sign, even in the absence of landscaping, is likely to

have no adverse visual impact. As such the scheme's impact is scored *neutral* in the outturn assessment.

Environment – Biodiversity

The PAR records the impact on biodiversity as "Neutral". However, it should be noted that, there can be potential impact on protected species and habitats where vegetation clearance is required as a result of a road widening roundabout improvement scheme.

River Itchen Special Area of Conservation and Site of Special Scientific Interest is located approximately 400m to the west of the scheme area. The works were restricted to the existing roundabout carriageway and the soft estate within the highways boundary outside of the internationally designated site.

The following sources of information including ecological survey reports provided by the Area 3 MAC (Enterprise Mouchel) were available for this post-completion review:

- Location plan drawings, showing location and details of the scheme;
- Environmental Scoping Assessment, Enterprise Mouchel, January 2011
- The Ecological Survey Record, Enterprise Mouchel, February 2013.
- Assessment of Implications on European Sites Screening, Enterprise Mouchel, February 2013 and consultation responses from Natural England (via letter, June 2013).
- Record of Determination (RoD), Enterprise Mouchel, April 2013.
- Construction Environmental Management Plan (CEMP), Enterprise Mouchel, November 2012.
- Pre and post scheme photographs as well as Google Streetview imagery pre and post scheme using the time line feature.

Evaluation of baseline assessment

The Ecological Survey Report identified the potential for widespread reptile species and nesting birds to be present within habitats within the scheme footprint. It was recommended that negative impacts to these species could be avoided by following suitable working methods.

The Assessment of Implications on European Site (AIES) screening concluded that there would be no significant effect upon the River Itchen European sites. Natural England supported this view providing that construction was undertaken in accordance with the proposed mitigation measures detailed within the CEMP.

The AIES and the extended Phase 1 habitat survey in support of the Ecological Survey Report appear to have been undertaken in accordance with relevant guidance from CIEEM , DMRB , and IAN130/10

The Ecological Survey Report considered whether the Scheme would have any legal implications on protected species or habitats but did not provide any assessment of impacts upon designated sites, species, and habitats. However, due to the small size and discrete nature of the scheme it is not expected that a full impact assessment would have been undertaken.

Evaluation of mitigation

Mitigation measures proposed within the Ecological Survey Report for the scheme included site checks for reptile species immediately prior to verge excavations and checks for nesting birds if work was undertaken during the bird nesting season.

These mitigation measures are noted in the CEMP but no evidence has been provided that these measures were undertaken for the scheme. Without this information this assessment cannot completely rule out the residual risk of a negative impact on biodiversity.

Ecology Summary

Overall it is considered that the baseline assessments were undertaken to a suitable standard and provided an accurate assessment of the scheme.

Despite the lack of evidence to show that the proposed mitigation measures were implemented during construction it is considered that the scheme is reasonably unlikely to have had a negative impact upon protected species or habitats due to the localised nature of the works and the habitats present within the site. Therefore the scheme is most likely to have had a neutral impact upon biodiversity as assessed within the PAR.

Society - Journey Quality

Journey quality was not assessed in the PAR, with the objective marked as not applicable. However, the scheme has included some measures that could affect journey quality and so it is assessed in this evaluation report.

Journey quality is considered based on a number of sub-factors, of which the ones considered potentially relevant to this scheme are described below:

- Frustration – poor layout or inability to make progress
- Fear of potential accidents – something that changes the perception of risk, such as new lighting, better visibility, fewer conflicts or route uncertainty.

The widened approach arm of Easton Lane, with signalisation, is an improvement to the layout that is likely to reduce queuing, delays and help drivers make progress through the junction by providing dedicated green signal time for traffic on that approach. Further, the signals are likely to have eliminated previous drivers' uncertainty on their approach to the previous give-way arrangement to join the roundabout. The scheme impact on frustration and fear of potential accidents for these road users is likely to be *beneficial* for both.

However, as observed during the site visit, the new signal installation with its current timings and sub-optimal synchronisation with the junction's other signalised nodes could be resulting in the observed blocking back and weaving among drivers on the southern bridge and at the Easton Lane exit arm. For these road users, the scheme impact is likely to be *adverse* for both frustration and fear of potential accidents.

Similarly, the site observations and changes in journey times suggests potentially increased queuing and delay for travellers entering the junction from the A272 approach. Although the numbers of travellers entering the junction from the A272 is significantly less than the numbers of drivers from the M3, A34 and Easton Lane arms, those travellers are likely to be experiencing increased frustration and fear of potential accidents. Therefore, for these road users, the scheme impact is likely to be *adverse* for both.

In consideration of the numbers of road user either positively or negatively affected by the scheme, on balance, the sub-objective for frustration is deemed to be *neutral* and the sub-objective for fear of accidents is also deemed to be *neutral.* As such, the scheme is scored *neutral* in the outturn evaluation.

Value for Money and Conclusions

This report has considered each of the relevant WebTAG and Policy objectives for this scheme, using evidence where available to understand the scheme's impact. This section looks to bring together these findings to report on the overall value for money of the scheme and to draw general conclusions on the scheme's performance.

Value for Money

The report has already covered the predicted and outturn costs, collision benefits and journey time benefits, but at this point we must bring all these elements together to consider the overall business case for the scheme. This is presented in the table below:

	PAR	Outturn
Scheme Cost	£1,009,726	£878,445
FIRST YEAR METRICS		
Collisions Impact	£65,990	£232,905
Journey Time Impact	£577,538	£371,765
Total Benefits	£643,527	£604,670
FYRR	64%	69%
SCHEME LIFE METRICS		
Collisions Impact	£2,438m	£8,606m
Journey Time Impact	£22,790m	£14,670m
Total Benefits	£25,229m	£23,277m
BCR	25.0	26.5

The table shows that the scheme was promoted based on a first year rate of return of 64% growing to a BCR of 25.0 over the 60 year scheme life. However, the scheme has actually cost around 13% less than expected and the collision benefits have exceeded expectations by a factor of approximately 3.5. These higher than expected outturn results are offset by the lower than expected journey time benefits – around one third less than expected. Therefore, on balance, the scheme has achieved a similar, though slightly higher than forecast, FYRR of 69% and is now re-forecast to generate a BCR of 26.5 over the 60 year scheme life.

Despite the variations between each of the pre-scheme appraisal forecasts and outturn values, the scheme has been approximately as successful as originally anticipated. There is some possibility that the higher than expected values of collisions benefits seen based on 15-months of post scheme data may be accounted for by natural fluctuations, the likelihood of which would have been minimised in the pre scheme data by virtue of the period covering 5 years. In contrast the lower than expected values of journey time benefits are more likely to be symptoms of the real changes in drivers' progression through the junction depending on their arm-to-arm movement – drivers on the Easton Lane approach have average journey time savings of over 40s each and drivers on the M3 south arm gain just over 2s each, at the expense of drivers on the A34 who lose an average of just over 1s each, drivers on the M3 north arm who lose just over 11s each and drivers on the A272 lose nearly 33s each.

However, on balance, it is clear that the additional capacity, signalisation of Easton Lane and new lane designations have successfully reduced journey times overall.

Scheme Conclusions

Financially the scheme has demonstrably been a success, reducing journey times, particularly on Easton Lane. However, a number of other key findings have been uncovered during this evaluation report:

- The scheme has significantly improved access from Winchester which has the potential to benefit future changes in relation to the housing and employment sites identified in and around the town.
- Journey time analysis and site observations suggest there might be some benefit in considering how signal synchronization throughout the roundabout might be improved to enable smoother traffic progression at times.
- The scheme location is an important node on a large number of journeys between regions to the south and the north-west of the junction (A34-M3 turning movements in both directions). Therefore future evaluations should consider the balance of priorities between competing traffic movements at the junctions and ensure the junction operation is optimised.
- There does appear to be a genuine link between the scheme and both gateways of Southampton Port and Southampton Airport, with traffic demonstrably moving between the two locations, so improvements to the junction are likely to have positive impacts on accessibility and operations at the gateways.
- The scheme is considered to have had a neutral impact on journey quality, generally because reductions in driver frustration and fear of accidents through reduced congestion and clear signal priority from Easton Lane are likely to have been offset by increased driver frustration and fear of accidents for travellers on the A272 and on the southern part of the circulatory carriageway.
- Landscape impacts were found to be neutral as the existing landscaping screens the surrounding areas from the junction.

Appendix A. Scheme AST and EST

Scheme AST

	Sub-Objective	Beneficial	Neutral	Adverse	Not Assessed
ECONOMY	TEE (Business and Commuting Users)	✔			
	Reliability (Business and Commuting Users)	✔			
	Regeneration				✔
	Journey Quality	✔			
	Wider Impacts				✔
ENVIRONMENT	Noise				✔
	Air Quality				✔
	Greenhouse gases				✔
	Landscape		✔		
	Townscape				✔
	Heritage of Historic Resources				✔
	Biodiversity		✔		
	Water Environment				✔
SOCIETY	TEE (Other users)	✔			
	Reliability (Other Users)	✔			
	Physical Activity				✔
	Accidents	✔			
	Security				✔
	Access to Services				✔
	Affordability				✔
	Severance				✔
	Option Values				✔
PUBLIC ACCOUNTS	Transport Budget			✔	
	Wider Public Finances		✔		

Scheme EST

	Sub-Objective	Beneficial	Neutral	Adverse	Not Assessed
ECONOMY	TEE (Business and Commuting Users)	✔			
	Reliability (Business and Commuting Users)	✔			
	Regeneration				✔
	Journey Quality	✔			
	Wider Impacts				✔
ENVIRONMENT	Noise				✔
	Air Quality				✔
	Greenhouse gases				✔
	Landscape		✔		
	Townscape				✔
	Heritage of Historic Resources				✔
	Biodiversity		✔		
	Water Environment				✔
SOCIETY	TEE (Other users)	✔			
	Reliability (Other Users)	✔			
	Physical Activity				✔
	Accidents	✔			
	Security				✔
	Access to Services				✔
	Affordability				✔
	Severance				✔
	Option Values				✔
PUBLIC ACCOUNTS	Transport Budget			✔	
	Wider Public Finances		✔		

Appendix B. Journey Time Impacts

ID	TP Name	Flow		Time Periods		Annual Flow		Journey Times		Change in JT per vehicle	Vehicle Hours Saved in	Monetary Saving in Opening Yr
		Pre Scheme	Post Scheme	Hours in Week	Weeks in Year	Pre Scheme	Post Scheme	Pre Mean	Post Mean			
Easton Lane to A34												
TP1	**AM peak**	**272.5**	**272.5**	10	52	141700	141700	135.27	119.7	15.57	612.9	£8,537.04
TP2	**Weekday interpeak**	**335.9**	**335.9**	45	52	785948	785948	151.85	115.79	36.06	7872.6	£109,664.96
TP3	**PM peak**	**442.0**	**442.0**	10	52	229840	229840	280.36	138.36	142	9065.9	£126,288.14
TP4	**Overnight**	**80.5**	**80.5**	83	52	347646	347646	86.49	88.34	-1.85	-178.7	-£2,488.62
TP5	**Weekend morning to afternoon**	**324.4**	**324.4**	6	52	101211	101211	141.78	116.38	25.4	714.1	£9,947.42
TP6	**Weekend afternoon to evening**	**294.5**	**294.5**	8	52	122497	122497	105.08	101.3	3.78	128.6	£1,791.70
TP7	**Weekend off peak**	**276.1**	**276.1**	6	52	86133	86133	117.15	102.77	14.38	344.1	£4,792.68
Easton Lane to M3 north												
TP1	**AM peak**	**153.5**	**153.5**	10	52	79820	79820	183.3	145.96	37.34	827.9	£11,532.80
TP2	**Weekday interpeak**	**108.3**	**108.3**	45	52	253305	253305	187.71	144.87	42.84	3014.3	£41,989.61
TP3	**PM peak**	**162.0**	**162.0**	10	52	84240	84240	325.42	174.69	150.73	3527.1	£49,132.25
TP4	**Overnight**	**29.3**	**29.3**	83	52	126440	126440	108.17	105.04	3.13	109.9	£1,531.36
TP5	**Weekend morning to afternoon**	**118.0**	**118.0**	6	52	36811	36811	177.54	146.71	30.83	315.2	£4,391.33
TP6	**Weekend afternoon to evening**	**107.1**	**107.1**	8	52	44552	44552	134.72	126.71	8.01	99.1	£1,380.87
TP7	**Weekend off peak**	**100.4**	**100.4**	6	52	31327	31327	151.1	127.87	23.23	202.1	£2,815.89
Easton Lane to A272												
TP1	**AM peak**	**52.5**	**52.5**	10	52	27300	27300	209.21	170.07	39.14	296.8	£4,134.59
TP2	**Weekday interpeak**	**73.1**	**73.1**	45	52	171113	171113	214.24	169.45	44.79	2128.9	£29,655.92
TP3	**PM peak**	**113.5**	**113.5**	10	52	59020	59020	353.91	202.95	150.96	2474.9	£34,475.43
TP4	**Overnight**	**17.9**	**17.9**	83	52	77452	77452	129.62	126.21	3.41	73.4	£1,021.96
TP5	**Weekend morning to afternoon**	**72.3**	**72.3**	6	52	22549	22549	204.63	171.05	33.58	210.3	£2,929.89
TP6	**Weekend afternoon to evening**	**65.6**	**65.6**	8	52	27291	27291	157.28	148.11	9.17	69.5	£968.36
TP7	**Weekend off peak**	**61.5**	**61.5**	6	52	19190	19190	175.02	149.95	25.07	133.6	£1,861.52
Easton Lane to M3 south												
TP1	**AM peak**	**104.5**	**104.5**	10	52	54340	54340	218.38	179.6	38.78	585.4	£8,154.10
TP2	**Weekday interpeak**	**210.4**	**210.4**	45	52	492278	492278	222.99	178.63	44.36	6066.0	£84,498.72
TP3	**PM peak**	**320.5**	**320.5**	10	52	166660	166660	362.79	212.85	149.94	6941.4	£96,693.55
TP4	**Overnight**	**49.6**	**49.6**	83	52	213943	213943	137.57	134.63	2.94	174.7	£2,433.85
TP5	**Weekend morning to afternoon**	**199.6**	**199.6**	6	52	62286	62286	213.29	180.15	33.14	573.4	£7,987.10
TP6	**Weekend afternoon to evening**	**181.2**	**181.2**	8	52	75385	75385	165.44	156.69	8.75	183.2	£2,552.36
TP7	**Weekend off peak**	**169.9**	**169.9**	6	52	53007	53007	183.31	158.53	24.78	364.9	£5,082.54
A34 to M3 north												
TP1	**AM peak**	**14.5**	**14.5**	10	52	7540	7540	69.21	64.84	4.37	9.2	£127.50
TP2	**Weekday interpeak**	**18.4**	**18.4**	45	52	42998	42998	67.56	61.66	5.9	70.5	£981.62
TP3	**PM peak**	**33.5**	**33.5**	10	52	17420	17420	91.77	96.8	-5.03	-24.3	-£339.05
TP4	**Overnight**	**4.8**	**4.8**	83	52	20524	20524	47.14	46.81	0.33	1.9	£26.21
TP5	**Weekend morning to afternoon**	**19.2**	**19.2**	6	52	5975	5975	75.44	65.82	9.62	16.0	£222.42
TP6	**Weekend afternoon to evening**	**17.4**	**17.4**	8	52	7232	7232	52.04	51.37	0.67	1.3	£18.75
TP7	**Weekend off peak**	**16.3**	**16.3**	6	52	5085	5085	56.19	51.61	4.58	6.5	£90.12
A34 to A272												
TP1	**AM peak**	**314.0**	**314.0**	10	52	163280	163280	95.12	88.95	6.17	279.8	£3,898.22
TP2	**Weekday interpeak**	**292.3**	**292.3**	45	52	683865	683865	94.09	86.24	7.85	1491.2	£20,772.49
TP3	**PM peak**	**466.5**	**466.5**	10	52	242580	242580	120.26	125.06	-4.8	-323.4	-£4,505.52
TP4	**Overnight**	**76.3**	**76.3**	83	52	329318	329318	68.59	67.98	0.61	55.8	£777.31
TP5	**Weekend morning to afternoon**	**307.3**	**307.3**	6	52	95875	95875	102.53	90.16	12.37	329.4	£4,589.06
TP6	**Weekend afternoon to evening**	**278.9**	**278.9**	8	52	116039	116039	74.6	72.77	1.83	59.0	£821.68
TP7	**Weekend off peak**	**261.5**	**261.5**	6	52	81592	81592	80.11	73.69	6.42	145.5	£2,026.90
A34 to M3 south												
TP1	**AM peak**	**1988.5**	**1988.5**	10	52	1034020	1034020	104.29	98.48	5.81	1668.8	£23,246.29
TP2	**Weekday interpeak**	**1623.6**	**1623.6**	45	52	3799283	3799283	102.84	95.42	7.42	7830.7	£109,082.26
TP3	**PM peak**	**1859.0**	**1859.0**	10	52	966680	966680	129.14	134.96	-5.82	-1562.8	-£21,769.79
TP4	**Overnight**	**404.8**	**404.8**	83	52	1747015	1747015	76.54	76.4	0.14	67.9	£946.40
TP5	**Weekend morning to afternoon**	**1630.2**	**1630.2**	6	52	508613	508613	111.19	99.26	11.93	1685.5	£23,478.81
TP6	**Weekend afternoon to evening**	**1479.8**	**1479.8**	8	52	615579	615579	82.76	81.35	1.41	241.1	£3,358.55
TP7	**Weekend off peak**	**1387.3**	**1387.3**	6	52	432843	432843	88.4	82.27	6.13	737.0	£10,266.89
A34 to Easton Lane												
TP1	**AM peak**	**181.5**	**181.5**	10	52	94380	94380	147.58	167.48	-19.9	-521.7	-£7,267.44
TP2	**Weekday interpeak**	**218.8**	**218.8**	45	52	511875	511875	140.97	152.9	-11.93	-1696.3	-£23,629.42
TP3	**PM peak**	**193.5**	**193.5**	10	52	100620	100620	167.24	206.92	-39.68	-1109.1	-£15,449.15
TP4	**Overnight**	**48.9**	**48.9**	83	52	211155	211155	99.52	106.02	-6.5	-381.3	-£5,310.85
TP5	**Weekend morning to afternoon**	**197.0**	**197.0**	6	52	61474	61474	146.18	154.8	-8.62	-147.2	-£2,050.45
TP6	**Weekend afternoon to evening**	**178.9**	**178.9**	8	52	74403	74403	113.43	129.54	-16.11	-333.0	-£4,638.03
TP7	**Weekend off peak**	**167.7**	**167.7**	6	52	52316	52316	122.48	131.38	-8.9	-129.3	-£1,801.67
M3 north to A272												
TP1	**AM peak**	**81.5**	**81.5**	10	52	42380	42380	60.45	65.69	-5.24	-61.7	-£859.29
TP2	**Weekday interpeak**	**67.9**	**67.9**	45	52	158828	158828	52.32	54.2	-1.88	-82.9	-£1,155.40
TP3	**PM peak**	**106.0**	**106.0**	10	52	55120	55120	75.18	74.67	0.51	7.8	£108.77
TP4	**Overnight**	**18.0**	**18.0**	83	52	77536	77536	41.65	41.79	-0.14	-3.0	-£42.00
TP5	**Weekend morning to afternoon**	**72.4**	**72.4**	6	52	22573	22573	66.69	60.73	5.96	37.4	£520.58
TP6	**Weekend afternoon to evening**	**65.7**	**65.7**	8	52	27321	27321	44.05	48.15	-4.1	-31.1	-£433.44
TP7	**Weekend off peak**	**61.6**	**61.6**	6	52	19210	19210	53.5	49.94	3.56	19.0	£264.63
M3 north to M3 south												
TP1	**AM peak**	**0.5**	**0.5**	10	52	260	260	69.62	75.22	-5.6	-0.4	-£5.63
TP2	**Weekday interpeak**	**0.5**	**0.5**	45	52	1170	1170	61.07	63.38	-2.31	-0.8	-£10.46
TP3	**PM peak**	**0.0**	**0.0**	10	52	0	0	84.06	84.57	-0.51	0.0	£0.00
TP4	**Overnight**	**0.1**	**0.1**	83	52	422	422	49.6	50.21	-0.61	-0.1	-£1.00
TP5	**Weekend morning to afternoon**	**0.4**	**0.4**	6	52	123	123	75.35	69.83	5.52	0.2	£2.63
TP6	**Weekend afternoon to evening**	**0.4**	**0.4**	8	52	149	149	52.21	56.73	-4.52	-0.2	-£2.60
TP7	**Weekend off peak**	**0.3**	**0.3**	6	52	105	105	61.79	58.52	3.27	0.1	£1.32

ID	TP Name	Flow		Time Periods		Annual Flow		Journey Times		Change in JT per vehicle	Vehicle Hours Saved in Opening	Monetary Saving in Opening Yr
		Pre Scheme	Post Scheme	Hours in Week	Weeks in Year	Pre Scheme	Post Scheme	Pre Scheme Mean	Post Scheme Mean			
M3 north to Easton Lane												
TP1	**AM peak**	**119.0**	**119.0**	10	52	61880	61880	112.91	144.22	-31.31	-538.2	-£7,496.90
TP2	**Weekday interpeak**	**71.1**	**71.1**	45	52	166433	166433	99.2	120.86	-21.66	-1001.4	-£13,949.07
TP3	**PM peak**	**95.0**	**95.0**	10	52	49400	49400	122.16	156.53	-34.37	-471.6	-£6,569.84
TP4	**Overnight**	**19.5**	**19.5**	83	52	84209	84209	72.58	79.83	-7.25	-169.6	-£2,362.35
TP5	**Weekend morning to afternoon**	**78.6**	**78.6**	6	52	24516	24516	110.34	125.37	-15.03	-102.4	-£1,425.79
TP6	**Weekend afternoon to evening**	**71.3**	**71.3**	8	52	29672	29672	82.88	104.92	-22.04	-181.7	-£2,530.49
TP7	**Weekend off peak**	**66.9**	**66.9**	6	52	20864	20864	95.87	107.63	-11.76	-68.2	-£949.39
M3 north to A34												
TP1	**AM peak**	**57.0**	**57.0**	10	52	29640	29640	119.96	153.64	-33.68	-277.3	-£3,862.77
TP2	**Weekday interpeak**	**43.9**	**43.9**	45	52	102668	102668	106.55	131.32	-24.77	-706.4	-£9,840.28
TP3	**PM peak**	**45.0**	**45.0**	10	52	23400	23400	129.53	168.26	-38.73	-251.7	-£3,506.81
TP4	**Overnight**	**10.9**	**10.9**	83	52	46876	46876	79.84	88.87	-9.03	-117.6	-£1,637.92
TP5	**Weekend morning to afternoon**	**43.7**	**43.7**	6	52	13647	13647	117.63	136.76	-19.13	-72.5	-£1,010.20
TP6	**Weekend afternoon to evening**	**39.7**	**39.7**	8	52	16517	16517	89.91	115.4	-25.49	-117.0	-£1,629.15
TP7	**Weekend off peak**	**37.2**	**37.2**	6	52	11614	11614	102.98	117.37	-14.39	-46.4	-£646.69
A272 to M3 south												
TP1	**AM peak**	**1.5**	**1.5**	10	52	780	780	212.42	262.54	-50.12	-10.9	-£151.27
TP2	**Weekday interpeak**	**1.6**	**1.6**	45	52	3803	3803	98.49	106.99	-8.5	-9.0	-£125.07
TP3	**PM peak**	**1.0**	**1.0**	10	52	520	520	105.24	135.05	-29.81	-4.3	-£59.98
TP4	**Overnight**	**0.4**	**0.4**	83	52	1520	1520	46.39	49.23	-2.84	-1.2	-£16.71
TP5	**Weekend morning to afternoon**	**1.4**	**1.4**	6	52	443	443	85.46	108.39	-22.93	-2.8	-£39.27
TP6	**Weekend afternoon to evening**	**1.3**	**1.3**	8	52	536	536	57.8	70.08	-12.28	-1.8	-£25.45
TP7	**Weekend off peak**	**1.2**	**1.2**	6	52	377	377	68.3	70.88	-2.58	-0.3	-£3.76
A272 to Easton Lane												
TP1	**AM peak**	**74.0**	**74.0**	10	52	38480	38480	255.71	331.54	-75.83	-810.5	-£11,290.80
TP2	**Weekday interpeak**	**88.8**	**88.8**	45	52	207675	207675	136.62	164.47	-27.85	-1606.6	-£22,379.89
TP3	**PM peak**	**90.0**	**90.0**	10	52	46800	46800	143.34	207.01	-63.67	-827.7	-£11,530.00
TP4	**Overnight**	**20.3**	**20.3**	83	52	87672	87672	69.37	78.85	-9.48	-230.9	-£3,216.00
TP5	**Weekend morning to afternoon**	**81.8**	**81.8**	6	52	25524	25524	120.45	163.93	-43.48	-308.3	-£4,294.26
TP6	**Weekend afternoon to evening**	**74.3**	**74.3**	8	52	30892	30892	88.47	118.27	-29.8	-255.7	-£3,562.15
TP7	**Weekend off peak**	**69.6**	**69.6**	6	52	21722	21722	102.38	119.99	-17.61	-106.3	-£1,480.13
A272 to A34												
TP1	**AM peak**	**284.5**	**284.5**	10	52	147940	147940	262.05	340.17	-78.12	-3210.3	-£44,719.45
TP2	**Weekday interpeak**	**258.0**	**258.0**	45	52	603720	603720	143.27	174.11	-30.84	-5171.9	-£72,044.12
TP3	**PM peak**	**252.5**	**252.5**	10	52	131300	131300	149.94	217.85	-67.91	-2476.8	-£34,502.22
TP4	**Overnight**	**61.4**	**61.4**	83	52	265042	265042	76.08	87.15	-11.07	-815.0	-£11,353.02
TP5	**Weekend morning to afternoon**	**247.3**	**247.3**	6	52	77162	77162	127.07	174.47	-47.4	-1016.0	-£14,152.48
TP6	**Weekend afternoon to evening**	**224.5**	**224.5**	8	52	93390	93390	94.85	127.93	-33.08	-858.2	-£11,954.09
TP7	**Weekend off peak**	**210.5**	**210.5**	6	52	65667	65667	108.88	128.96	-20.08	-366.3	-£5,102.24
A272 to M3 north												
TP1	**AM peak**	**48.0**	**48.0**	10	52	24960	24960	316.66	372.04	-55.38	-384.0	-£5,348.67
TP2	**Weekday interpeak**	**21.6**	**21.6**	45	52	50603	50603	184.46	208.58	-24.12	-339.0	-£4,722.78
TP3	**PM peak**	**20.0**	**20.0**	10	52	10400	10400	200.74	259.98	-59.24	-171.1	-£2,383.95
TP4	**Overnight**	**6.0**	**6.0**	83	52	26099	26099	102.44	107.8	-5.36	-38.9	-£541.30
TP5	**Weekend morning to afternoon**	**24.4**	**24.4**	6	52	7598	7598	167.98	210.43	-42.45	-89.6	-£1,248.07
TP6	**Weekend afternoon to evening**	**22.1**	**22.1**	8	52	9196	9196	129.39	158.58	-29.19	-74.6	-£1,038.70
TP7	**Weekend off peak**	**20.7**	**20.7**	6	52	6466	6466	148.19	159.25	-11.06	-19.9	-£276.73
M3 south to Easton Lane												
TP1	**AM peak**	**430.0**	**430.0**	10	52	223600	223600	39.1	38.23	0.87	54.0	£752.73
TP2	**Weekday interpeak**	**229.4**	**229.4**	45	52	536738	536738	38.85	38.74	0.11	16.4	£228.46
TP3	**PM peak**	**235.0**	**235.0**	10	52	122200	122200	36.47	41.67	-5.2	-176.5	-£2,458.80
TP4	**Overnight**	**61.9**	**61.9**	83	52	267323	267323	35.55	30.16	5.39	400.2	£5,575.36
TP5	**Weekend morning to afternoon**	**249.4**	**249.4**	6	52	77826	77826	35.49	37.29	-1.8	-38.9	-£542.06
TP6	**Weekend afternoon to evening**	**226.4**	**226.4**	8	52	94194	94194	33.58	33.99	-0.41	-10.7	-£149.44
TP7	**Weekend off peak**	**212.3**	**212.3**	6	52	66232	66232	36.19	34.78	1.41	25.9	£361.36
M3 south to A34												
TP1	**AM peak**	**1966.5**	**1966.5**	10	52	1022580	1022580	46.15	47.65	-1.5	-426.1	-£5,935.22
TP2	**Weekday interpeak**	**1520.6**	**1520.6**	45	52	3558263	3558263	46.2	49.2	-3	-2965.2	-£41,305.50
TP3	**PM peak**	**1693.0**	**1693.0**	10	52	880360	880360	43.84	53.4	-9.56	-2337.8	-£32,566.18
TP4	**Overnight**	**381.3**	**381.3**	83	52	1645661	1645661	42.81	39.2	3.61	1650.2	£22,987.73
TP5	**Weekend morning to afternoon**	**1535.6**	**1535.6**	6	52	479105	479105	42.78	48.68	-5.9	-785.2	-£10,937.83
TP6	**Weekend afternoon to evening**	**1393.9**	**1393.9**	8	52	579866	579866	40.61	44.47	-3.86	-621.7	-£8,660.91
TP7	**Weekend off peak**	**1306.8**	**1306.8**	6	52	407731	407731	43.3	44.52	-1.22	-138.2	-£1,924.78
M3 south to M3 north												
TP1	**AM peak**	**14.5**	**14.5**	10	52	7540	7540	94.18	73.91	20.27	42.5	£591.39
TP2	**Weekday interpeak**	**3.0**	**3.0**	45	52	7020	7020	82.06	78.28	3.78	7.4	£102.68
TP3	**PM peak**	**1.0**	**1.0**	10	52	520	520	88.9	89.73	-0.83	-0.1	-£1.67
TP4	**Overnight**	**1.1**	**1.1**	83	52	4645	4645	64.49	55.9	8.59	11.1	£154.41
TP5	**Weekend morning to afternoon**	**4.3**	**4.3**	6	52	1352	1352	78.54	79.01	-0.47	-0.2	-£2.46
TP6	**Weekend afternoon to evening**	**3.9**	**3.9**	8	52	1637	1637	70.25	69.88	0.37	0.2	£2.34
TP7	**Weekend off peak**	**3.7**	**3.7**	6	52	1151	1151	77.25	69.62	7.63	2.4	£33.98
M3 south to A272												
TP1	**AM peak**	**1.5**	**1.5**	10	52	780	780	120.09	98.02	22.07	4.8	£66.61
TP2	**Weekday interpeak**	**2.8**	**2.8**	45	52	6435	6435	108.59	102.86	5.73	10.2	£142.68
TP3	**PM peak**	**2.0**	**2.0**	10	52	1040	1040	117.39	117.99	-0.6	-0.2	-£2.41
TP4	**Overnight**	**0.6**	**0.6**	83	52	2449	2449	85.94	77.07	8.87	6.0	£84.07
TP5	**Weekend morning to afternoon**	**2.3**	**2.3**	6	52	713	713	105.63	103.35	2.28	0.5	£6.29
TP6	**Weekend afternoon to evening**	**2.1**	**2.1**	8	52	863	863	92.81	91.28	1.53	0.4	£5.11
TP7	**Weekend off peak**	**1.9**	**1.9**	6	52	607	607	101.17	91.7	9.47	1.6	£22.24

Appendix C. Journey Time Reliability

ID	TP Name	Flow	Journey Times										Change in JT per vehicle
		Post Scheme	Pre Scheme					Post Scheme					
			Mean	5th	25th	75th	95th	Mean	5th	25th	75th	95th	
Easton Lane to M3 south													
TP1	**AM peak**	**104.5**	218.38	81	125	264	530	179.6	76	106	205	378	38.78
TP2	**Weekday interpeak**	**210.4**	222.99	80	111	246	597	178.63	77	107	196	364	44.36
TP3	**PM peak**	**320.5**	362.79	99	187	464	778	212.85	84	125	242	462	149.94
TP4	**Overnight**	**49.6**	137.57	65	79	125	356	134.63	66	84	133	270	2.94
TP5	**Weekend morning to afternoon**	**199.6**	213.29	80	109	239	558	180.15	78	107	196	380	33.14
TP6	**Weekend afternoon to evening**	**181.2**	165.44	76	100	175	409	156.69	73	99	171	329	8.75
TP7	**Weekend off peak**	**169.9**	183.31	73	96	181	531	158.53	72	94	172	333	24.78
A34 to Easton Lane													
TP1	**AM peak**	**181.5**	147.58	74	94	177	269	167.48	76	109	191	288	-19.9
TP2	**Weekday interpeak**	**218.8**	140.97	74	92	157	277	152.9	72	96	168	280	-11.93
TP3	**PM peak**	**193.5**	167.24	81	111	199	296	206.92	85	136	232	357	-39.68
TP4	**Overnight**	**48.9**	99.52	65	77	109	160	106.02	64	79	116	178	-6.5
TP5	**Weekend morning to afternoon**	**197.0**	146.18	73	92	169	297	154.8	70	94	176	297	-8.62
TP6	**Weekend afternoon to evening**	**178.9**	113.43	69	83	122	191	129.54	67	86	144	226	-16.11
TP7	**Weekend off peak**	**167.7**	122.48	70	84	130	240	131.38	67	86	143	238	-8.9
M3 north to A34													
TP1	**AM peak**	**57.0**	119.96	53	78	141	229	153.64	61	109	186	289	-33.68
TP2	**Weekday interpeak**	**43.9**	106.55	50	69	121	208	131.32	55	92	166	256	-24.77
TP3	**PM peak**	**45.0**	129.53	50	73	137	290	168.26	60	106	190	332	-38.73
TP4	**Overnight**	**10.9**	79.84	47	61	92	139	88.87	49	69	108	170	-9.03
TP5	**Weekend morning to afternoon**	**43.7**	117.63	51	70	122	274	136.76	57	97	173	270	-19.13
TP6	**Weekend afternoon to evening**	**39.7**	89.91	48	65	105	165	115.4	52	87	153	226	-25.49
TP7	**Weekend off peak**	**37.2**	102.98	51	69	114	191	117.37	52	87	150	232	-14.39
A272 to M3 north													
TP1	**AM peak**	**48.0**	316.66	83	137	396	784	372.04	103	168	500	909	-55.38
TP2	**Weekday interpeak**	**21.6**	184.46	73	105	210	466	208.58	87	133	262	542	-24.12
TP3	**PM peak**	**20.0**	200.74	78	119	242	428	259.98	100	163	342	640	-59.24
TP4	**Overnight**	**6.0**	102.44	61	75	127	203	107.8	65	85	141	230	-5.36
TP5	**Weekend morning to afternoon**	**24.4**	167.98	72	101	198	385	210.43	85	131	261	567	-42.45
TP6	**Weekend afternoon to evening**	**22.1**	129.39	70	91	158	252	158.58	83	117	207	348	-29.19
TP7	**Weekend off peak**	**20.7**	148.19	69	93	177	323	159.25	77	112	205	373	-11.06
M3 south to A272													
TP1	**AM peak**	**1.5**	120.09	56	76	140	207	98.02	51	65	117	184	22.07
TP2	**Weekday interpeak**	**2.8**	108.59	53	69	126	195	102.86	50	63	120	210	5.73
TP3	**PM peak**	**2.0**	117.39	55	73	134	199	117.99	52	68	137	252	-0.6
TP4	**Overnight**	**0.6**	85.94	48	60	103	162	77.07	46	58	93	146	8.87
TP5	**Weekend morning to afternoon**	**2.3**	105.63	52	67	123	185	103.35	49	61	120	216	2.28
TP6	**Weekend afternoon to evening**	**2.1**	92.81	51	64	111	168	91.28	48	59	108	185	1.53
TP7	**Weekend off peak**	**1.9**	101.17	51	65	117	182	91.7	48	59	107	184	9.47
Year: Flow Weighted Summary			171	73.157	99	193	386	160	72	101	180	316	

Appendix F ExA WQ2 7.2.13 - Interface with statutory undertakers

Appendix F – ExA WQ2 7.2.13 - Interface with statutory undertakers

Title Appendix F –.ExA WQ2 7.2.13 - Interface with statutory undertakers
BIM Document Reference: HE551511-VFK-LSI-XXXX_XX-RP-LE-40006
Revision: 0
Date: 22 September 2023
Author: M3 Junction 9 Improvement Team, National Highways

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
Southern Water Services Limited	(1) 5/3a – Occupier & Rights (2) 6/1a – Occupier (3) 6/1d – Occupier (4) 6/1e – Occupier (5) 6/2b – Occupier (6) 6/2e – Occupier (7) 6/2f – Occupier & Rights (8) 6/3 – Occupier (9) 6/4a – Occupier & Rights (10) 6/4b – Occupier & Rights	Within plots 5/3a, 6/1a, 6/1d, 6/1e, 6/2b, 6/2f, 6/3, 6/4a, 6/4b Southern Water have a 355mm distribution main running along the existing A33 which traverses along the toe of the batter on the northbound M3 carriageway which has an interface with the Scheme. Within plot 6/2e, 6/2f: Southern Water currently have foul water apparatus.	(1) Permanent (2) Permanent (3) Permanent (4) Permanent (5) Permanent (6) Permanent (7) Permanent (8) Permanent (9) Permanent (10) Permanent	(1) Works Nos. 1, 1i, 1j, 1k, 1l, 1m, 1n, 1o, 2, 3, 3e, 5 (as shown on sheet nos. 5 and 6 and being the diversion of approximately 1095 metres in length of water pipeline), 7, 8, 12, 13, 17, 17a, 34. (2) Works No. 6b (3) Works Nos.2, 5, 6a, 6b, 6c, 6d, 6e, 34 (4) Works No. 2 (5) Works Nos. 2, 2e, 6e, 34 (6) Works Nos. 2, 5 (as shown on sheet nos. 5 and 6 and being the diversion of approximately 1095 metres in length of water pipeline), 6d, 6e, 15, 16, 17, 17b, 17c, 18, 22, 22a (7) Works	Within plots: Plot 5/3a, 6/4a, 6/4b, 6/1e, 6/3, 6/1e, 6/2b, 6/1a, 6/1d, 6/2f Works are required to allow for construction works along the A33 and the proposed culverts and subway. A temporary diversion of the existing water main of 458 metres x 355mm HPPE pipe and 90 metres x 300mm D.I pipe will be carried out first followed by a a full permanent diversion as follows 1121 metres x 355mm HPPE pipe. 79 metres x 600mm D.I pipe open cut. 3 no. Auger Bore ducts 4 x sluice valves, 4 x washout hydrants, and 3 air valves Within plots: 6/2e, 6/2f: There is an existing foul water main outside the on the eastbound	Yes, full consultation has taken place and the works are at “C3” budget status under the New Roads and Street Works Act 1991. The Applicant is currently waiting for a C4 quote from Southern Water. 6/2e, 6/2f: This has been discussed and requested by Southern Water. An application for the extension has been submitted for approval to Southern Water.	Pursuant to article 10(5)(c): the consent of the Secretary of State is not required for the transfer or grant of the benefit of the order to Southern Water Services Limited, for the purposes of undertaking Work Number 5.	This undertaker is seeking bespoke protective provisions. The Applicant considers that bespoke provisions can be agreed before the end of the examination. In the event that bespoke provisions are not agreed this undertaker will not be subject to any compulsory purchase powers resulting in a serious detriment to their undertaking due to the operation of Schedule 10, Part 1, which states that regardless of any provision in the land plans the undertaker must not acquire any apparatus otherwise than by agreement. This means that the Secretary of State can be satisfied that pursuant to section 127(3) Planning Act 2008, the land can be purchased and either replaced or not replaced without serious detriment to the carrying on of the undertaking.

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
				Nos. 17, 18, 18a, 18c, 23, 40 (8) Works Nos. 2, 5, 6d, 6e, 17 (9) 2, 2e, 3, 5 (as shown on sheet nos. 5 and 6 and being the diversion of approximately 1095 metres in length of water pipeline), 12, 13, 14, 17, 23, 34 (10) Works Nos. 17, 23	A33 which will be affected by the new proposed roundabout, this network will need to be extended outside of the works to allow SWL access.			
Southern Gas Networks plc	(1) 6/4e - Occupier (2) 6/6a – Occupier (3) 6/6b - Occupier	Within plots 6/4e, 6/6a, 6/6b Southern Gas Networks plc have a low-pressure gas main pipeline that may require diversion	(1) Permanent (2) Temporary (3) Temporary	(1) Works Nos. 39, 9a, 9c, 11,20 (as shown on sheet no. 6 and being the diversion of approximately 216 metres in length of Low-Pressure Gas Main pipeline), 21 (as shown on sheet no. 6 and being the diversion of approximately 269 metres in length of	There is an existing gas main (SGN) that traverses across the field from Easton lane, beneath the main M3 carriageway to a connection point on the West of the existing A33. Whilst diversion works are hoped not to be required as main is at sufficient depth to allow construction, temporary	Yes, trial holes have been undertaken to confirm depth of asset. All works have been agreed with SGN. SGN are happy that the Applicant's primary intention is not to divert the apparatus but appreciates that the DCO will need to contain the necessary power for diversion in case that is required once detailed design is complete.	Pursuant to article 10(5)(b): the consent of the Secretary of State is not required for the transfer or grant of the benefit of the order to Southern Gas Networks plc, for the purposes of undertaking Work Number 20.	This undertaker is seeking bespoke protective provisions. The Applicant considers that bespoke provisions can be agreed before the end of the examination. In the event that bespoke provisions are not agreed this undertaker will not be subject to any compulsory purchase powers resulting in a serious detriment to their undertaking due to the operation of Schedule 10, Part 1, Paragraph 6 which states that regardless of any provision in the land plans the undertaker must not acquire any apparatus otherwise than by agreement.

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
				power cables), 39, 48 (2) Works Nos. 20 as shown on sheet no. 6 and being the diversion of approximately 216 metres in length of Low-Pressure Gas Main pipeline (3) Works Nos. 20 (as shown on sheet no. 6 and being the diversion of approximately 216 metres in length of Low-Pressure Gas Main pipeline), 38	protection may be required for construction traffic. The Applicant is seeking powers to allow it to divert the gas main should detailed design and further surveying of the existing status of the pipeline show that this is necessary for the safe operation of that pipeline.			
Scottish & Southern Energy Power Distribution Limited	(1) 4/1b – Occupier (2) 4/2a – Occupier (3) 4/2b – Occupier (4) 6/4c – Occupier & Rights (5) 6/5 – Occupier	Within plots 5/3b, 5/3c, 6/4c, 6/5 SSE have a 11kV overhead line and underground cable requiring diversion. Within plots 4/1b, 4/2a, 4/2b	(1) Temporary (2) Temporary (3) Temporary (4) Permanent (5) Permanent Rights	(1) Work No 35: as shown on sheet no. 4 of the works plans and being the diversion of 50 metres of power cables. (2) Work No 35: as shown on sheet no. 4 of the works plans and being the diversion of	Within the same plots 5/3b, 5/3c, 6/4c, 6/5: the diversion of SSE apparatus is required to allow construction of the new southbound M3 off slip, the works consist of relocating approximately 150m of existing 11Kv overhead line to	These works are agreed with the utility provider and the Applicant is now agreeing a C4 cost estimate.	Pursuant to article 10(5)(a): the consent of the Secretary of State is not required for the transfer or grant of the benefit of the order to Scottish and Southern Energy Power Distribution Limited, for the purposes of undertaking Work Number 21, 35.	This undertaker is not seeking bespoke protective provisions. The Applicant considers this undertaker will not be subject to any compulsory purchase powers resulting in a serious detriment to their undertaking due to the operation of Schedule 10, Part 1, Paragraph 6 which states that regardless of any provision in the land plans the undertaker must not acquire any apparatus otherwise than by agreement.

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
		SSE have a low voltage line which the Applicant understands serves the highway infrastructure which runs over the top of these plots.		50 metres of power cables. (3) Work No 35: as shown on sheet no. 4 of the works plans and being the diversion of 50 metres of power cables. (4) Works Nos. 3, 9, 9a, 9b, 9c, 9e, 10, 11, 13, 21 as shown on sheet no. 6 and being the diversion of approximately 269 metres in length of power cables., 39, 44 (5) Works Nos. 21 as shown on sheet no. 6 and being the diversion of approximately 269 metres in length of power cables.	underground cabling Within plots 4/1b, 4/2a, 4/2b possibility of damage due to construction traffic over Long Walk to access the construction compounds.			
Telent Technology Services Limited	Where works are being done to Telent apparatus, this apparatus is held by Telent Technology Services Limited and relates to highway communication infrastructure within the strategic highway network. Telent are the maintenance provider for the NRTS network which is run on behalf of National Highways. NRTS is the fibre optic network of communication and control that National Highways uses to monitor English roads. The Applicant does not need to acquire and land or rights of Telent for the purposes of the Scheme as Telent are a maintenance provider who work on behalf of National Highways to provide the NRTS network. The works that will occur on Telent's apparatus will be done through raising diverting existing apparatus where required. Replacement apparatus will be within the highway boundary. The replacement and diversion will be done through recognised and agreed channels with Telent. Discussions have already occurred with Telent on the work required. The Applicant does not consider Telent to be a statutory undertaker under the Planning Act 2008.							

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
British Gas Trading Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							
Mobile Broadband Networks Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							
EE Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							
Cornerstone Telecommunications Infrastructure Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							
BT Limited / Openreach	(1) (6/1h) – Occupier (2) (6/6c) – Occupier (3) 7/2a – Occupier (4) 7/4b – Occupier (5) 7/4c – Occupier (6) 7/4e – Occupier	Plots: 6/1h, 6/6c, 7/4e, 7/4b, 7/4c, 7/2a have telecommunication equipment owned by BT Limited / Openreach requiring diversion.	(1) Permanent (2) Permanent (3) Permanent (4) Permanent (5) Permanent (6) Permanent	(1) Works Nos. 26 (as shown on sheet no. 7 of the Works Plans and being the diversion of approximately 499 metres in length of telecommunication equipment), 33 (2) Works Nos. 26 (as shown on sheet no. 7 of the Works Plans and being the diversion of approximately 499 metres in length of telecommunication equipment), 33, 38	Within plots 6/1h, 6/6c 7/4e, 7/4b, 7/4c, 7/2a the existing Openreach equipment is in direct conflict with the new gyratory construction and the proposed M3 southbound off slip and new Easton lane footway. To allow construction of the proposed cycleway and new gyratory, it is proposed to temporarily divert the existing Openreach equipment during construction and once construction is complete the new/permanent diversion will be	These works are agreed with the utility provider and the Applicant is now agreeing a C4 cost estimate.	Pursuant to article 10(5)(d): the consent of the Secretary of State is not required for the transfer or grant of the benefit of the order to Scottish and Openreach Limited, for the purposes of undertaking Work Number 26.	This undertaker is not seeking bespoke protective provisions. The Applicant considers this undertaker will not be subject to any compulsory purchase powers resulting in a serious detriment to their undertaking due to the operation of Schedule 10, Part 2 and in particular paragraph 16.

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
				(3) Works Nos. 3, 33 (4) Works Nos. 2, 3, 10, 10b, 12, 12b, 12c, 12d, 19, 22, 22b, 22c, 23, 24, 24a, 24b, 24c, 24d, 25, 25a, 26 (as shown on sheet no. 7 of the Works Plans and being the diversion of approximately 499 metres in length of telecommunication equipment), 27, 28, 29, 30, 31, 32, 32a, 33, 33a, 36, 39 (5) Work No. 2 (6) Work Nos. 22, 24, 25, 25a, 26 (as shown on sheet no. 7 of the Works Plans and being the diversion of approximately 499 metres in length of telecommunication equipment).	constructed.			

SCHEME INTERFACE WITH STATUTORY UNDERTAKERS								
Name of Statutory Undertaker	**Plot No. and description of interest in Land**	**Apparatus with an Interface**	**Proposed compulsory acquisition**	**Work [No.] and full description of work**	**Work Interface with statutory undertaker**	**Confirmation that this has been discussed with Statutory Undertaker**	**Consent to transfer benefit in the Development Consent Order**	**Relevant protective provisions**
SSE Services plc	No work to statutory undertaker apparatus and no acquisition of land or rights.							
Virgin Media Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							
Vodafone Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							
Hutchison 3G UK Limited	No work to statutory undertaker apparatus and no acquisition of land or rights.							