Essex County Council

Epping Forest District Council

ECC/EFDC LOCAL HIGHWAYS PANEL
Monday, 28th April, 2014

You are invited to attend the next meeting of the **Local Highways Panel**, which will be held at:

Committee Room 2, Civic Offices, High Street, Epping
on **Monday, 28th April, 2014**
at **6.30 pm** .

Glen Chipp
Chief Executive
Epping Forest District Council

Democratic Services Officer: Jackie Leither - Tel: 01992 564756
Email: democraticservices@eppingforestdc.gov.uk

Members:

County Councillors:

J Knapman (Chairman), Mrs R Gadsby, A Jackson, Mrs V Metcalfe, Mrs M McEwen, C Pond and J M Whitehouse

District Councillors:

R Bassett, K Chana, T Church, P Keska, Mrs J Lea, L Leonard and Ms S Watson

In attendance by invitation: District Councillor G Waller and County Councillor E Johnson

PLEASE NOTE THAT THIS MEETING IS ONLY OPEN TO MEMBERS OF THE PANEL

1. APOLOGIES FOR ABSENCE

2. MINUTES (Pages 3 - 8)

To confirm the minutes of the last meeting of the Local Highways Panel held on 27 February 2014.

3. SCHEME RECOMMENDATIONS 2012/13 (Pages 9 - 20)

Progress schedule attached.

4. SCHEME RECOMMENDATIONS 2013/14 (Pages 21 - 28)

Scheme lists updated by division for consideration attached.

5. NEW SCHEME PROPOSALS (Pages 29 - 42)

Schedule attached.

6. FEASIBILITY STUDIES AND DESIGNS (Pages 43 - 120)

Schedule attached.

7. ANY OTHER BUSINESS

8. DATE OF NEXT MEETING

ECC/EFDC LOCAL HIGHWAY PANEL
MINUTES

Committee:	ECC/EFDC Local Highways Panel	**Date:**	Thursday, 27 February 2014
Place:	Committee Room 2, Civic Offices, High Street, Epping	**Time:**	6.30 - 8.45 pm

Members Present:

County Councillors:

Councillors J Knapman, Mrs R Gadsby, A Jackson, Mrs V Metcalfe, Mrs M McEwen, C Pond and J M Whitehouse

District Councillors:

Councillors R Bassett, K Chana, T Church, P Keska, Mrs J Lea, L Leonard and Ms S Watson

Other Councillors: Councillors E Johnson and G Waller

Officers Present: K Durrani (Assistant Director (Technical)), S G Hill (Senior Democratic Services Officer), J Leither (Democratic Services Assistant), J Simmons (Highways Liaison Officer, ECC), D Sprunt (Principal Transportation Co-Ordinator - ECC) and P Wright (Design and Consultancy Manager – Essex Highways)

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35. MINUTES

RESOLVED:

That the minutes of the meeting held on 21 November 2013 be taken as read and signed by the Chairman as a correct record subject to amendments to the following paragraphs:

Item 29 (1) paragraph 1 to read as follows:

Councillor Jackson advised the Panel that his division would not be prepared to pay for a junction improvement scheme. He advised Members that as he had previously advised, the junction needed marking with white lines and the signage restored as part of a maintenance scheme, Councillor Jackson felt this was now an urgent matter to be considered.

Item 31 (1) paragraph 2 to read as follows:

Councillor Jackson queried why the Panel had to request Highway Rangers works through the Highways Department. The HLO reported that, as agreed with Essex Highways who provide the Highways Ranger service, that the requests had to be logged through Highway Enquires or the HLO. Councillor Jackson advised that the Local Highways Panel had the power to direct its liaison officers to instruct the Highways Rangers.

36. SCHEME RECOMMENDATIONS 2012/13

(1) Chairman to agree 20% Scheme Increase

The Chairman advised the Panel that at a recent meeting with the Cabinet Member, Councillor Bass, it was agreed that he, as Panel Chairman, would be able to agree a 20% increase on schemes up to a maximum of £10,000 to avoid schemes being further delayed.

(2) Scheme Delays

The Chairman expressed concerns regarding schemes that had been approved and given completion dates, which had either expired or were due to expire, but had not yet been started, he questioned why the feasibility studies had not been seen by Members. He advised County Officers that a better information system was needed and asked if they could explain why there were so many delays.

Peter Wright, Essex Highways Officer advised that there had been delays with schemes all over the County, this had been due to staff shortages with the Contractors, Ringway Jacobs which had now been addressed.

County Officer Jon Simmons advised that he would meet with each of the divisional pairs before the next meeting of the Local Highways Panel to update them on the current situation with the schemes.

AGREED:

(2) That County Officers would circulate the reports as and when they became available and meetings would be held with each division before the next meeting of the Local Highways Panel.

37. SCHEME RECOMMENDATIONS 2013/14

Members noted the Scheme Recommendations schedule for 2013/14 and asked County Officers when these schemes would be started and completed.

County Officer David Sprunt advised the Panel that the Schemes for 2013/14 would only go as far as the design and would be implemented in the year 2014/15.

County Councillor Johnson advised the Panel that schemes were running approximately a year behind schedule.

The Chairman wanted it noted that Item 5 LEPP133014 on the schedule was not a Loughton Scheme as recorded but a Chigwell Scheme. County Officer, Jon Simmons said that this would be amended and shown correctly on the updated schedule.

AGREED:

That County Officers would amend the scheme list to show Item 5 LEPP133014 as being a Chigwell Scheme.

38. NEW SCHEME PROPOSALS

The Chairman asked the Panel to consider the New Scheme Proposal Schedule and asked if they had any concerns. He advised Officers that Members needed to know

that the proposed schemes would happen and when the feasibility studies would be completed.

Councillor Bassett requested that the Chairman liaise with County Officers to make sure the feasibility study list was ready for in time to be published in Agenda for the next meeting of the Local Highways Panel.

County Officer, David Sprunt advised the Panel they would not have enough budget for all of the scheme proposals.

Councillor Church stated that the Panel would need all of the feasibility studies by the next meeting so that they could decide which schemes were priority.

AGREED:

That County Officers would ensure all feasibility studies on the New Scheme Proposal Schedule would be available at the next meeting in order that schemes could be prioritised.

39. PROGRAMME OF FUTURE MEETINGS

The programme of future meetings was noted.

40. SECTION 106

Members expressed concerns that they were still not clear on what S106 monies could be used for. At the last meeting of the LHP K Blackburn the S106 Officer for ECC advised that he would report back.

AGREED:

That County Officers would contact Mr Blackburn and ask him for an updated report.

41. ANY OTHER BUSINESS

(1) Controlled Parking Zones

County Councillor Metcalfe asked County Officers if schemes for a Controlled Parking Zone (CPZ) could be included in the remit of the LHP monies.

County Officers advised that the Cabinet Member would need to be consulted on this and that they would seek his advice and report back to the next meeting.

AGREED:

That County Officers would consult with the Cabinet Member and report back to the next meeting.

(2) Footpath Repairs

Councillor Watson asked where would the monies come from to repair footpaths as Buckhurst Hill had major problems with holes in tarmac on many footpaths.

County Officer David Sprunt advised that this would come from the maintenance budget and that a Maintenance Engineer would be invited to come to a future meeting.

AGREED:

That a Maintenance Engineer would be invited to a future meeting.

(3) Flooding Issues in the District

Councillor McEwen asked County Officers about the recent flood issues concerning the district and what steps had been put into place to deal with them.

County Councillor Johnson advised that £1 million had been put into a budget to deal with flooding and each district had been asked to submit a list of the five worst areas which would be dealt with as priority.

Kim Durrani advised that he would supply a list which is attached as Appendix 1 to these minutes.

AGREED:

That a list of the worst flooding issues in the district be attached to these minutes to be dealt with as priority.

42. DATE OF NEXT MEETING

The date of the next meeting was Thursday 17 April 2014. Officers advised that the feasibility studies may not be completed by that date and that it would be advisable to meet at the end of April. The Committee Secretary would liaise with the Chairman and County Officers for a suitable date around the end of April and circulate to members.

CHAIRMAN

Epping Forest District
Priority Flood Sites

The list of sites that Officers of the Engineering, Drainage & water Team (EDWT) have put forward to Essex County Council / Essex Highways for consideration.

A joint inspection of the sites took place recently and Essex Highways have commenced investigations and works in the same places. Officers from EDWT are also working with Essex Highways where the highway drainage system relies on third party ditches and watercourses to work effectively.

B194 Crooked Mile, Nazeing / Waltham Abbey
At various locations between the j/w St Leonards Road and Holyfield Farm. A combination of highway assets, ditches and watercourses.

B181 Epping Road, Jacks Hatch, Epping Upland j/w Parsloe Road
Issues with the ability of the highway culvert under Parsloe Road to cope during heavy rain, but more prevalent is a blocked or collapsed culvert approximately 50m west.

B181 Epping Road, Broadley Common j/w Common Road
Capacity of the highway culvert under the carriageway an issue and due to the topography the water can accumulate to a depth of around 300mm.

Greensted Road j/w Toot Hill Road, Greensted, Ongar
Water accumulates on one side of the carriageway during most rainfall events and increases to cover the whole road after heavier rain. Highway culvert believed to exist but unsure of location.

Roding Lane, Chigwell (rural section)
There is an historic grill over the mouth of a highway drain that was diverted when the M11 was constructed in the late 70's. Water accumulates here and then runs down and across the carriageway due to suspected tree root damage further down stream. Causes safety issues during cold weather due to icing.

B182 Bury Lane, Epping j/w B1393 High Road
Issues with a blocked gulley at the junction area. It does not pose an issue to vehicles but the water reaches over the footway and makes life very wet for pedestrians. High profile problem locally with numerous enquiries.

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ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
BUCKHURST HILL & LOUGHTON SOUTH DIVISION									
BH&LS - Minor Schemes									
1	LEPP002001	ITS (formerly DC1429)	Buckhurst Hill	Roding Lane, Palmerston Rd/ Loughton Lane, Albert Rd	Pedestrian facilities at signal junction - Feasibility Study	£5,000	18.9.12	29/04/14	Feasibility report (6.11.13) carriageway too narrow for ped. refuges. Passed to ITS for adding pedestrian phase to the signalised junction if possible. £3900 remaining. If possible ITS will combine with expected junction refurb. and resurface.
2	LEPP002001	DC1641	Buckhurst Hill	Westbury Road/ Palmerston Road	Review of all traffic measures put in place at mini roundabout - feasibility study	£12,000	18.9.12 (£5k) & 21.11.13 (£7k)	Awaiting programme date	Completed report sent to Cllrs 28.10.13. Works to enhance giveway and junction functionality est. +£7k. Rec. 21.11.13. CM approved 3.12.13. D&C advise the brief did not require an assessment into the need for existing one way on Westbury Rd. The wider impacts or removing the one way would need to be investigated by Transport Planning.
3	LEPP002002	DC1430	Buckhurst Hill	Farm Way/Forest Edge/Station Way	Traffic calming on Station Way/Farm Way, junction warning signs or VAS - Feasibility Study	£2,000	18.9.12	31.1.13	COMPLETE - Informed DC1644
4	LEPP002007	DC1644	Buckhurst Hill	Farm Way/Forest Edge/Station Way	Raised table at junction following feasibility study	£62,300	28.1.13	30/06/14	Residents consultation under taken and following receipt of objections CMA being drafted
5	LEPP003003	DC1692	Buckhurst Hill	Station Way near LUL Station, Buckhurst Hill	Feasibility study for pedestrian refuge island	£2,000	28.1.13	31.3.14	Completed - study
6	LEPP003004	DC1693	Loughton	Oakwood Hill j/w South View Road	Bollards to stop vehicles driving along footway	£4,000	28.1.13	31.3.14	Completed
7	LEPP003008	DC1928 (formerly ITS)	Loughton	A121 High Rd nr Spring Grove	Feasibility study into pedestrian refuge(s) or zebra crossing	£10,000	6.9.12	31/03/14	PV2 results eligible for a crossing. Was in design with ITS for a puffin. Link result to DC1805 2013-14 VAS scheme. Nov 2013 Cllrs cancelled puffin scheme as too expensive. ITS have passed back to D&C to investigate cheaper options - ped. refuges/ zebra
						£97,300			

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
	BH&LS - Bus stop improvements								
8	LEPP005015	PT	Loughton	Station Approach	Bus cage and no waiting plate	£3,000	28.1.13	14/03/14	Completed
						£3,000			
	BH&LS - Casualty Reduction Schemes								
9	LEPP001003	DC1424	Loughton	High Road j/w Forest Road	Pedestrian refuge. £5k Scheme cost to be split between LC and BH&LS. £2.5k ea	£0	18.9.12	25.4.13	Scheme not feasible. Initial investigation concluded did not actually meet criteria for a CR scheme and a refuge would impede turning vehicles unless costly kerb realignment considered which might not provide sufficient turning space anyway. Cancelled. £2.5k recycled for top ups. Cllrs informed 20.9.13
						£0			
	Total recommendations for BH&LS Division					**£100,300**			

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Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
CHIGWELL & LOUGHTON BROADWAY DIVISION									
C&LB - Minor Schemes									
10	LEPP002003	DC1392	Loughton	The Broadway - Thomas Willingale School	Pedestrian guard rail	£2,000	2.10.12	26.8.13	COMPLETE - August 2013
11	LEPP002002	DC1642	Chigwell	Manor Road/Vicarage Lane	Junction improvement	£10,000	2.10.12 (£30k) 18.6.13 (-£20k)	10.12.13	FS/design COMPLETE - 6.6.13 pause at design - transferred 20k to Manor Rd/Tomswood (approved CM 25.6.13) Report circ. To Cllr 20.12.13. Proposed Works would cost £118k added to potential Schemes list.
12	LEPP003007	DC1652	Loughton	Barrington Rd j/w Doubleday Rd & Ibbottson Path	Two dropped kerbs £2k	£2,000	2.10.12	31.3.14	Completed
						£14,000			
C&LB - Bus stop improvements									
13	LEPP005012	PT	Loughton	Oakwood Hill nr jw Chigwell Lane Stop 150042016001	Bus cage and no waiting plate	£1,200	28.1.13	1.11.13	COMPLETE - Budget insufficient (£600), top up £600 rec. 5.9.13, approved 12.9.13
14	LEPP005013	PT	Loughton	Oakwood Hill nr jw Chigwell Lane Stop 150042016002	Bus cage and no waiting plate	£1,200	28.1.13	1.11.13	COMPLETE - Budget insufficient (£600), top up £600 rec. 5.9.13, approved 12.9.13
15	LEPP005014	PT	Chigwell	Station Rd	Bus cage and no waiting plate. Existing bus cage does not align with shelter - move 20ft.	£600	28.1.13	21.11.13	COMPLETE - Design and new no waiting plate installed for enforcement (budget used). Existing cage re-marked by unknown party. Budget for marking in correct location insufficient, top up £600 required. LHP deferred 5.9.13 and decided no further action 21.11.13.
						£3,000			
C&LB - School Crossing Patrol Sites									
16	LEPP006006	DC1695	Loughton	Thomas Willingale Primary School, Willingale Road	Extend school keep clear markings to bus stop	£1,180	18.9.12	2014/15	Completed
17	LEPP006007	DC1696	Loughton	Hereward Primary School, Colebrook Lane	Parking restrictions opposite school to prevent parking on patrol site	£1,770	2.10.12	Awaiting programme date	In Design. May need TRO (£2k) and increased budget. Owing to formal consultation and TRO process delivery in 2014/15
						£2,950			

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
C&LB - Casualty Reduction Schemes									
18	LEPP001012	ITS	Chigwell	Manor Road/Tomswood Road	Improve visibility at junction and installation of traffic islands on Manor Road approaches.	£199,000	18.9.12 (£30k) 10.2.13 (£149k) 18.6.13 (£20k)	18/06/14	Capital works completed, traffic signal equipment to be installed. Complaints from resident delayed delivery. Site is currently "Give Way" junction
19	LEPP001003	DC1426	Chigwell	Gravel Lane	Chevrons, verge markers and lines.	£3,000	18.9.12	8.7.13	Completed
20	LEPP001007	DC1428	Chigwell	Pudding Lane	Improve drainage/possible resurfacing	£30,000	18.9.12	Awaiting programme date	Design completed, Drainage investigation report to feed into next step.
						£232,000			
Total recommendations for C&LB Division						**£251,950**			

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
EPPING & THEYDON BOIS DIVISION									
E&TB - Minor Schemes									
21	LEPP002005	DC1431	Coopersale Common	Between Brickfield and Institute Road	Pedestrian refuge island £8k	£8,000	18.9.12	17.5.13	Pedestrian refuge is not feasible due to insufficient road width. HLO requested of D&C if alternative options can be offered if budget remains. D&C sent study. Sent to Cllr 20.12.13 awaiting their instruction.
22	LEPP002003	TBC (formerly) IT353	Epping	B1393 High Road/Theydon Road	Junction improvement (tailbacks in all directions) - investigation into timings and lines	£5,000	2.10.12	Awaiting programme date	Initial investigation - no scope to improve timings and lines. Corp of London may give up land to widen junction for right hand turn (from London) if DC1810 gives up land next to war memorial. HLO informed ITS who have requested D&C take over. Study completed to be issued shortly.
23	LEPP003010	DC1654	Epping	Hemnall St j/w Grove Lane	Pedestrian refuge island. Speeders from Harlow direction make crossing Hemnall St from Grove Lane difficult	£7,500	27.2.13	Awaiting programme date	In design. Problems carriageway width, desire line, parking and land ownership. HLO requested CDPV2 and report for Cllr. Cllr updated 20.12.13
24	LEPP001014	DC1654	Epping	Lindsey Street/Centre Drive	Provision of poles for Parish Speed Indicator Devices. 1x Lindsey, 2x Centre Drive.	£2,000	27.2.13	28/03/14	Completed - VAS added to Potential Scheme list for Lindsey Street £6k
25	LEPP006010	DC1655	Epping	Ivy Chimneys	Feasibility study into clear crossing point/footway improvements	£1,000	27.2.13	31.10.13	COMPLETE (design) - D&C study suggests 2 build outs. Design £3k Works £18k. (X-ref results to 20 mph flashing light signs proposal on scheme list). Cllr to discuss next step with HLO & site visit
26	LEPP002010	DC1691	Coopersale Common	Garnon Mead	Dropped kerbs to improve access to piazza/shops	£8,000	27.2.13	31/03/14	Completed
						£31,500			

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Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
E&TB - Bus Stop Improvements									
27	LEPP005001	DC1432	Epping	Coopersale Turn, Epping Road	Install new wooden shelter	£7,500	18.9.12	10/02/14	Completed
28	LEPP005016	DC1694	Epping	Centre Drive j/w Ivy Chimneys	Bus cage and no waiting plate	£600	28.1.13	31.3.14	Completed
						£8,100			
E&TB - School Crossing Patrol Sites									
29	LEPP006002	DC1519	Epping	Epping Primary School, Coronation Hill	Signs and lines changes to prevent parking outside school including works.	£4,250	2.10.12	Awaiting programme date	Design complete. Original budget of £1770 not sufficient. £2480 top up approved 12.9.13
30	LEPP006003	DC1520	Epping	Ivy Chimneys Primary School, Centre Drive	Parking restrictions around corner from school to prevent parking on patrol site	£1,770	20.12.12	Awaiting programme date	Design complete and agreed with Cllr. Resident consultation Nov 2013. TRO may need top up and lengthen process. Linked to DC1694. Resident has objected
						£6,020			
Total recommendations for E&TB Division						**£45,620**			

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Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
LOUGHTON CENTRAL DIVISION									
LC - Minor Schemes									
31	LEPP002007	DC1434	Loughton	A1168 Rectory Lane/Westall Road	Junction improvement - investigation	£9,000	18.9.12 (£3k) 21.11.13 (£6k)	25.01.13	Report complete - Cllrs chose Box junction / keep clear option). £6k est. to complete. CM approved 3.12.13
32	LEPP002006	DC1433	Loughton	Loughton High Road/The Drive	Improvements to signalised junction - investigation	£10,000	18.9.12	Awaiting programme date	ITS reviewing previous study. Survey data being collected for junction modelling.
33	LEPP001008	DC1635	Loughton	Sandford Ave j/w Westall Rd	Two dropped kerbs £2k	£0	2.10.12	21.10.13	Dropped kerbs already in place (site visit 4.8.13). Done by former West Area. £2k recycled for top ups
34	LEPP001009	DC1636	Loughton	Colebrook Lane j/w Westall Rd	Two dropped kerbs £2k	£0	2.10.12	21.10.13	Dropped kerbs already in place (site visit 4.8.13). Done by former West Area. £2k recycled for top ups
35	LEPP001010	DC1637	Loughton	Harvey Gardens j/w Colebrook Lane	Two dropped kerbs £2k	£0	2.10.12	21.10.13	Dropped kerbs already in place (site visit 4.8.13). Done by former West Area. £2k recycled for top ups
36	LEPP001011	DC1638	Loughton	Conyers Way j/w Colebrook Lane	Two dropped kerbs £2k	£0	2.10.12	21.10.13	Dropped kerbs already in place (site visit 4.8.13). Done by former West Area. £2k recycled for top ups
37	LEPP002012	DC1517	Loughton	Traps Hill/Alderton Hill/Borders Lane	Mini -roundabout and pedestrian refuge islands	£50,000	1.11.12	Awaiting programme date	Design complete. Nov 2013 Cllrs agreed to proceed. HLO informed D&C Linked to DC1435.
38	LEPP002008	DC1435	Loughton	Alderton Hill	Pedestrian refuge island	£12,000	18.9.12	Awaiting programme date	Design complete. Nov 2013 Cllrs agreed to proceed. HLO informed D&C Linked to DC1517.
						£81,000			
LC - Casualty Reduction Schemes									
39	LEPP001003	DC1424	Loughton	High Road j/w Forest Road	Pedestrian refuge. £5k Scheme cost to be split between LC and BH&LS £2.5k each	£0	18.9.12	25.4.13	Scheme not feasible. Initial investigation concluded did not actually meet criteria for a CR scheme and a refuge would impede turning vehicles unless costly kerb realignment considered which might not provide sufficient turning space anyway. Cancelled - £2.5k recycled for top ups. Cllrs informed 2.9.13
						£0			
Total recommendations for LC Division						**£81,000**			

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Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
NORTH WEALD & NAZEING DIVISION									
NW&N - Minor Schemes									
40	LEPP002017	ITS	Nazeing	B194 Nazeing new Road/North Street/Middle Street	Junction improvement/road markings/signal timings - north/south traffic turning right across each leads to confusion	£5,000	2.10.12	Awaiting programme date	Engineer tried to optimise timings with existing equipment, but reinstated original timings after residents' complaints. Too much traffic for junction. Investigation for solution continuing. Nov 2013 - Cllrs confirmed solution should include new markings for north/south traffic turning right across each (flow arrows on surface of offset junction). HLO had advised ITS 31.7.13. Linked to DC1807 (2013/14). Study completed to be issued shortly.
Page 16	LEPP002005	DC1643	Nazeing	St Leonard's Road	Village gateway and repositioning of VAS	£15,000	2.10.12	Awaiting Programme date	In design
42	LEPP001013	DC1639	Sheering	Sheering Lower Road	Traffic calming feasibility study	£2,000	28.1.13	Awaiting programme date	In design
43	LEPP003005	DC1650	Roydon	Harlow Road nr jw High Street	Pedestrian crossing feasibility study	£1,000	28.1.13	28/02/14	Completed - feasibility study design £38k but does not meet PV² criteria
44	LEPP002008	DC1645	Roydon	Hamlet Hill	Relocate VAS post	£2,000	28.1.13	31.3.14	In design. Parish has agreed location. 10/02/14 Additional funding £1,500 required, total cost £3,500
45	LEPP002011	DC1647	Bumbles Green	Common Road/Waltham Road/Middle Street	Village Gateway treatments	£16,000	27.2.13	31.3.14	Completed
46	LEPP002012	DC1648	North Weald Bassett	Wellington Road/Hampden Close	Traffic Calming Options - Feasibility Study	£1,000	27.2.13	Awaiting programme date	In design

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
47	LEPP002013	DC1649	North Weald Bassett	A414 Canes Lane j/w Vicarage Lane	Junction improvement options - Feasibility Study	£1,000	27.2.13	9.10.13	COMPLETE - study concluded opening access to all directions would not be safe. Report sent to Cllrs 28.10.13. Cllrs to discuss with Parish.
48	LEPP001015	DC1640	Nazeing	~~Middle Street/St Leonards Road~~ Threeways junction & B181 Epping Rd & Water Lane	Existing Weight limit improvements - Feasibility Study	£4,800	27.3.13 (£1k) 21.11.13 (3.8k)	24/09/13	Study/designs complete (Oct 2013) - study recommended works - est. £3.8k Report sent to Cllrs 26.9.13. Nov 2013 - Cllrs advised location description was incorrect and requested amendments to design - £3.8k funds for works rec. to avoid further delays. CM approved 3.12.13. HLO has advised D&C re amendments and costs 19.12.13
						£47,800			
	NW&N - School Crossing Patrol Sites								
49	LEPP006008	DC1697	Roydon	Roydon Primary School, Epping Road	Extend school keep clear markings	£1,200	2.10.12	29/01/14	Completed
						£1,200			
	NW&N - Public Rights of Way								
50	LEPP001016	PRoW	North Weald Bassett	PRoW 36 Byway	Surface and drainage improvements.	£50,000	27.2.13	31/03/14	Completed
						£50,000			
Total recommendations for NW&N Division						**£99,000**			

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
ONGAR & RURAL DIVISION									
O&R - Minor Schemes									
51	LEPP002010	DC1513	Fyfield	B184 Ongar Rd/ Dunmow Rd	Two solar powered VAS	£14,000	1.11.12	Awaiting programme date	Budget insufficient, top up £5k rec. 5.9.13, approved 12.9.13. Nov 2013 - locations of both VAS agreed with Parish. Sent for programming for works. Resident was concerned about proposed location alternative site found.
52	LEPP002011	DC1516	Moreton	Little Laver Road	Kerbing to control/divert excess water	£5,000	1.11.12	31/03/14	Completed
53	LEPP003006	DC1651	High Ongar	High Ongar Primary School, The Street	Relocate pedestrian guard rail to o/s new school entrance	£2,000	28.1.13	31.3.14	Completed
54	LEPP002009	DC1646	Moreton	o/s School, Church Road	Vehicle Activated Sign	£7,000	28.1.13	Awaiting programme date	£3.5k Budget insufficient, top up £3.5k rec. 5.9.13, approved 12.9.13. Parish confirmed location. Speed survey not done originally. New survey failed eligibility, therefore against policy. Scheme to be cancelled or case made for Cabinet Member Action. Instruction required from Div. LHP Member
						£28,000			
O&R - Casualty Reduction Schemes									
55	LEPP001001	DC1422	Theydon Garnon	Mount Road/Banks Lane	Junction re-alignment, signs/lines	£30,000	18.9.12	Awaiting programme date	Added reflective sign to design. D&C advise part of works is on common land and will require complex legal process and public consultation. Delivery delayed.
						£30,000			
Total recommendations for O&R Division						**£58,000**			

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
WALTHAM ABBEY DIVISION									
WA - Minor Schemes									
56	LEPP007005	ITS0035	Waltham Abbey	A121 Highbridge Street/B194 Beaulieu Drive	Historic scheme - Junction improvements/pedestrian and cyclist refuge - investigation	£5,000	2.10.12	28/03/14	Completed - study Options added to Potential Scheme list
57	LEPP002006	DC1690	Waltham Abbey	Roundhills	Elderly crossing sign £1.5k	£0	2.10.12	20.9.13	Scheme not feasible. Cancelled after consulting LHP Member.
58	LEPP002013	DC1518	Waltham Abbey	Crooked Mile, near Saxon Way	Signal controlled crossing - feasibility study	£5,000	18.9.12	24.4.13	Report informed crossing scheme below
59	LEPP002013	ITS (DC1518)	Waltham Abbey	Crooked Mile, near Saxon Way	Funding towards implementation of signal controlled crossing design and works. Provisional estimate for whole scheme £177k	£51,620	27.2.13	Awaiting scheme top-up	CDPV2 survey met eligibility criteria for crossing (Aug 13). Recommended 5.9.13. Approved 12.9.13 from 2012-13 budget
60	LEPP003009	DC1653	Waltham Abbey	Crooked Mile nr Harold Crescent	Pedestrian refuge island - amend existing splitter island	£10,500	18.9.12 (£7.5k) 21.11.13 (£3k)	2014/15	Completed - design
						£72,120			
WA - School Crossing Patrol Sites									
61	LEPP006009	DC1698	Waltham Abbey	Upshire Primary School, Upshire Road	Replace patrol plate with school plate	£590	2.10.12	31.3.14	Completed
						£590			
WA - Casualty Reduction Schemes									
62	LEPP001002	DC1423	Waltham Abbey	Claypit Hill	Additional 30mph road markings	£2,000	18.9.12	19.7.13	Complete 28.8.13
63	LEPP001006	DC1427	Waltham Abbey	Sewardstone Road/Quaker Lane	Feasibility study. Increase intergreen timings £4k	£0	18.9.12	31.5.13	Not feasible (Sept 2013). Initial findings showed intergreen timings at max. Review of collision data does not actually meet CR criteria.
						£2,000			

ECC/Epping Forest District LHP - Scheme Recommendations 2012/13 (Version 16) Report 2

Ref.	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	Expected complete	Status
Total recommendations for WA Division						**£74,710**			

All divisions	**£710,580**

	new info
	complete
	action
	cancelled
CM	Cabinet Member
TRO	Traffic Regulation Order
D&C	Design & Consultancy
HLO	Highways Liaison Officer
PIC	Personal Injury Collisions
VAS	Vehicle Activated Sign
SID	Speed Indicator Device
EH	Essex Highways
ITS	Integrated Traffic Systems & Congestion Team
PT	Passenger Transport

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
BUCKHURST HILL & LOUGHTON SOUTH DIVISION										
Minor Schemes										
1	LEPP132026	DC1788	Buckhurst Hill	Church Rd, ~~Russell Rd~~ Beech lane, Stag Ln, A121 High Road	Feasibility study, surveys, prelim. designs & costings re problems congestion, parking, speeding in adjacent streets	£3,000	6.6.13	25.6.13	01/08/14	In design. HLO requested D&C prioritise (6.9.13)
2	LEPP132047	TBC	Loughton	Oakwood Hill, Loughton, IG10. Between River Way and L. Alderton Hall Ln	FEASIBILITY STUDY / DESIGN - Investigate improvements to refuge to give protection for the school crossing patrol & VAS signs both approaches. Any other options engineer deems appropriate. E.g. additional lining, signing, rumble strips.	£2,500	21.11.13	3.12.13	Awaiting programme date	Shared LC. Fatal accident 10.10.13 pedestrian (pensioner). Concerns over speeding and standard of existing pedestrian refuge. Speed survey results not eligible for speed limit VAS
3	LEPP132046	TBC	Buckhurst Hill	Albert Road nr j/w Lower Queen's Road	DESIGN - Pre-School at St Stephens Church on Lower queens Road. Concerns about pedestrian safety on the footway. Estimated Cost £2,500 Des/Sup £500.	£500	21.11.13	3.12.13	03/05/14	Validation recommends: Guarding would be counterproductive and would act a 'pen'. Add 9 bollards along the frontage of St Stephens Church.
						£6,000				
School Crossing Patrol Sites										
4	LEPP134017	DC1805	Loughton	A121 High Rd nr j/w Spring Gr. - Oaklands Sch.	VAS near j/w Albion Hill	£8,500	6.6.13	25.6.13	31.3.14	Link to DC1928 (2012-13) crossing. Speed survey not done prior to validation. Failed eligibility on 2 recent speed surveys. Therefore against policy. Cancel or make a case for Cabinet Member Action (CMA).
						£8,500				
Total recommendations for BH&LS Division						**£14,500**				

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
CHIGWELL & LOUGHTON BROADWAY DIVISION										
Minor Schemes										
5	LEPP133014	TBC	Loughton	Chigwell Primary School, 50 High Rd, IG7 6DW	DESIGN & TRO -To provide access from disabled bay to path. Relocate disabled bay and install dropped kerb and connecting path.	£1,000	5.9.13	12.9.13	30/09/14	Works est. £2.5k - rec 5.9.13, CM approval deferred to 2014-15 budget
6	LEPP132051	TBC	Chigwell Row	nr Chigwell Row Primary School, Lambourne road	DESIGN - Speeding concerns Validation recommendation - flashing lights sign to diagram 545 and sub plate with new combination sign 545 plus 'School 20 when lights show' plate part time advisory 20mph limit. Est. £3,700 total	£1,000	21.11.13	3.12.13	30/06/14	
						£2,000				
Bus Stop Improvements										
7	LEPP136014	TBC	Chigwell	Brook Parade, High Road, Chigwell	WORKS - Provide seating to half of the shelter	£1,500	21.11.13	3.12.13	11/07/14	
						£1,500				
Total recommendations for C&LB Division						**£3,500**				

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
EPPING & THEYDON BOIS DIVISION										
	Minor Schemes									
8	LEPP132019	DC1810	Epping	Lindsey St junction by war memorial	feasibility study, prelim. designs & costings - improve junction - possibly change highway rights, remove carriageway or change to footway	£2,000	6.6.13	25.6.13	18/02/14	Completed - feasibility study four options added to Potential Schemes List
9	LEPP132020	DC1811	Epping	Bower Hill at bridge	Feasibility study, prelim. designs & costings - safety measures for pedestrians - raised kerb & lining	£1,000	6.6.13	25.6.13	Awaiting programme date	Initial findings - need permission from E&O Railway for potential works.
10	LEPP132021	DC1787	Theydon Bois	B172 Abridge Rd	Feasibility study, prelim. designs & costings to assess speed reduction options	£2,000	6.6.13	25.6.13	11/04/14	In design
11	LEPP132022	DC1782	Fiddlers Hamlet	Mount Rd junction Coopersale St	Detailed design & costings - road markings and ghost island to define junction	£2,000	6.6.13	25.6.13	18/04/14	In design
						£7,000				
	Casualty Reduction Schemes									
12	LEPP131019	DC1806	Epping	B1393 High St - Palmers Hill j/w Stonnards Hill	Changes to lamp columns and signing improvements	£12,000	6.6.13	25.6.13	Awaiting programme date	HLO has informed D&C to link to DC1810
13	LEPP131022	TBC	Epping/ Epping Upland	B181 Lindsey St - Epping Rd j/w B182 Bury Lane	Traffic assessment, DESIGN to redesign junction to mitigate collisions (est. £36k incl. works) Design = £3.5k split ETB & NWN	£1,750	5.9.13	12.9.13	30/04/14	2 x £16.25k est. for works (5.9.13). Decision deferred till design complete
						£13,750				
	PRoW									
14	LEPP138001	PRoW	Epping/ Coopersale	PRoW 18 Between Vicarage Road, Coopersale and Stonnards Hill Recreation Ground	WORKS - Resurface with planings. Well-used Footpath 18 in my division.	£20,000	5.9.13	12.9.13	TBC	Cllr to approach landowners – Epping Town Council and Epping Forest conservators to seek their approval and co-operation - feed back required
						£20,000				
	Bus Stop Improvements									
15	LEPP136015	TBC	Epping	Bower Hill, nr j/w Allnuts Rd & Bower Vale.	WORKS - Formally mark 3 locations on hail and ride route with a bus stop flag and pole. Currently drivers not stopping	£3,000	21.11.13	3.12.13	30/06/14	
						£3,000				
Total recommendations for E&TB Division						**£43,750**				

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
LOUGHTON CENTRAL DIVISION										
	Minor Schemes									
16	LEPP132028	DC1790	Loughton	Alderton Hall Ln, south of The Lindens	Feasibility study, prelim. designs & costings - "Jockey Rail" protect verge from parking	£1,500	6.6.13	25.6.13	01/08/14	
17	LEPP132029	DC1789	Loughton	Debden Ln (Ripley View to Ripley	Feasibility Study, prelim. designs & costings - 20 mph limit	£2,000	6.6.13	25.6.13	01/08/14	
18	LEPP132030	DC1791	Loughton	Staples Rd / York Hill	Feasibility study, designs & costings (changes to kerbs to prevent u turns, drainage, bollards and bund. Look into further measures for vicinity- j/w York Hill and school sign).	£2,000	6.6.13	25.6.13	Awaiting programme date	In design. Works est £8k (rec. 6.6.13) CM approval deferred to 2014-15 budget. NB: school expansion planned.
19	LEPP132015	TBC	Loughton	Millsmead Way & Harwater Dr. junction, IG10	DESIGN - corner protection - vehicles mounting kerb and parking irresponsibly causing verge damage & congestion	£2,000	5.9.13	12.9.13	02.04.14	Study completed -£10k est. for works. Scheme added to Potential Schemes List
20	LEPP133013	TBC	Loughton	Cleland Path & England's Lane junction	DESIGN - dropped kerbs and tactile paving for disabled access	£1,000	5.9.13	12.9.13	Awaiting programme date	£5k est. for works (rec. 5.9.13) CM approval deferred to 2014-15 budget.
21	LEPP132038	TBC	Loughton	Former Epping College entrance off Newmans Lane, Loughton	FEASIBILITY STUDY & prelim. DESIGN - for potential S106 funded scheme (S106 cannot be used for study) gate solution to detachable bollards that keep getting knocked down	£2,000	5.9.13	12.9.13	30/06/14	
22	LEPP132047	TBC	Loughton	Oakwood Hill, Loughton, IG10. Between River Way and L. Alderton Hall Ln	FEASIBILITY STUDY / DESIGN - Investigate improvements to refuge to give protection for the school crossing patrol & VAS signs both approaches.	£2,500	21.11.13	3.12.13	Awaiting programme date	Shared BH&LS. Fatal accident 10.10.13 pedestrian (pensioner). Concerns over speeding and standard of existing pedestrian refuge. Speed survey results not eligible for speed limit VAS
						£13,000				
	Bus Stop Improvements									
23	LEPP136017	TBC	Loughton	Lindens, Alderton Hall Lane, Loughton	WORKS - bus shelter for elderly residents (wooden £8k metal £5.5k). Will need resident consultation.	£5,500	21.11.13	3.12.13	30/04/14	
						£5,500				
	Funds for NEPP									
24	LEPP137006	TBC	Loughton	Oakwood Hill j/w Chigwell Lane	Parking restrictions for congestion. Funds to be transferred to NEPP. HLO has asked Network Management if they have funds.	£5,000	21.11.13	3.12.13	2014/15	Process for transfering to NEPP being established
						£5,000				
Total recommendations for LC Division						**£23,500**				

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
NORTH WEALD & NAZEING DIVISION										
Minor Schemes										
25	LEPP132016	DC1785	Epping Upland	B181 junction with Upland Rd to Chequers	Feasibility study, prelim. designs & costings - survey utilities, options for calming traffic, changing priorities and reducing speeds at accident spot	£2,000	6.6.13	25.6.13	04/07/14	In design. Nov 2013 - Cllrs report that lorries are mounting kerb and new 40 mph signs appear to have gone in despite request to reduce to 30.
26	LEPP132017	DC1809	Sheering	Back Lane	Feasibility study, prelim. designs & costings - investigate drainage issues & options to prevent residents parking on verge	£1,500	6.6.13	25.6.13	Awaiting programme date	In design
27	LEPP132018	DC1786	Nazeing	Meadgate Road, Sedge Green	Feasibility study, prelim. designs & costings - signage - not suitable for lorries	£1,000	6.6.13	25.6.13	28.3.14	Completed -study
28	LEPP130311	DC1813	Nazeing	Middle St - link Bumbles Green to PROW FP59	Feasibility study, prelim. designs & costings for walkable verge	£2,000	6.6.13	25.6.13	21.03.14	Walkable verge added to Potentail Scheme list - £13,830
29	LEPP132034	TBC	Epping Upland	Cobbins Bridge, B181	FEASIBILITY STUDY / DESIGN - Priority working over bridge. Bridge too narrow for cars to pass. Parapet gets damaged	£3,500	21.11.13	3.12.13	Awaiting programme date	
						£10,000				
Casualty Reduction Schemes										
30	LEPP131020	DC1807	Nazeing	B194 Marsh Hill - Waltham Rd j/w St Leonards Rd	Changes to lamp columns and signing and marking improvements	£10,000	6.6.13	25.6.13	Awaiting programme date	In design. Linked to LEPP002017 (2012-13)
31	LEPP131022	TBC	Epping/ Epping Upland	B181 Lindsey St - Epping Rd j/w B182 Bury Lane	Traffic assessment, DESIGN to redesign junction to mitigate collisions (est. £36k incl. works) Design = £3.5k split ETB & NWN	£1,750	5.9.13	12.9.13	Awaiting programme date	2 x £16.25k est. for works (5.9.13). Decision deferred till design complete. Split in costings to be confirmed.
						£11,750				
	Bus Stop Improvements									
32	LEPP136011	TBC	Nazeing Common	King Harolds Head, Nazeing Common	WORKS - Bus pole and timetable case. Formally mark designated bus stop as buses are often refusing to stop.	£1,000	5.9.13	12.9.13	TBC	BSI Officer advises (6.12.13) that a road safety assessment has recommended the stop not be marked afterall because of visibility issues and proximity to j/w Belchers Lane. BSI Officer advises that £200 staff time has already been charged to scheme. awaiting update from Passenger Transport Team
						£1,000				
Total recommendations for NW&N Division						**£22,750**				

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
ONGAR & RURAL DIVISION										
Minor Schemes										
33	LEPP132023	DC1783	High Ongar	The Street j/w Mill Lane	Surveys prelim. designs, costings and works - flashing 20 signs near school	£3,700	6.6.13	25.6.13	Awaiting programme date	In design - needs non-standard VAS
34	LEPP132024	DC1784	Chipping Ongar	Milton Cr, Shelly Primary School	Surveys, design & works - flashing 20 signs near school	£3,700	6.6.13	25.6.13	Awaiting programme date	In design - needs non-standard VAS
35	LEPP132025	DC1804	Stanford Rivers	A113 London Rd	VAS and slow down sub plate	£8,500	6.6.13	25.6.13	Awaiting programme date	Speed survey eligible. Parish in discussion with Technician re preferred location.
36	LEPP133012	DC1814	Chipping Ongar	The Borough	Feasibility study, prelim. designs & costings- new footway on school route, check boundaries, statutory undertakers' apparatus and verges	£5,000	6.6.13	25.6.13	Awaiting programme date	Report by mid-January. Initial findings - road too narrow for new footway unless Jewsons give up land. D&C to approach Jewsons. After discussion with Cllrs, HLO suggested priority working and narrowed carriageway to D&C (19.12.13)
37	LEPP132042	TBC	Abbess Beauchamp/ Berners Roding	B184 Dunmow Rd	WORKS - 1 solar powered VAS to reduce speeders.	£7,000	5.9.13	12.9.13	Awaiting programme date	
38	LEPP132043	TBC	Chipping Ongar	Primary Sch. Greensted Rd	Survey, DESIGN and WORKS - validated scheme - flashing lights sign to diagram 545 and sub plate with new combination sign 545 plus "School 20 when lights show" plate. Part time advisory 20 mph limit. Solar if possible. (2 similar schemes approved 25.6.13)	£3,700	5.9.13	12.9.13	Awaiting programme date	
39	LEPP132039	TBC	Stanford Rivers	A113 Romford Rd, Bridge Farm, Stanford Rivers	FEASIBILITY STUDY - to a drainage scheme re flooding at bridge	£2,000	5.9.13	12.9.13	30/04/14	
40	LEPP132040	TBC	Bovinger	Bobbingworth Mill, Bovinger	FEASIBILITY STUDY - for village gateways/speed signage for village	£2,000	5.9.13	12.9.13	Awaiting programme date	
41	LEPP132041	TBC	Abridge	B172 Abridge Rd, bridge over Roding	FEASIBILITY STUDY - to investigate priority working/ road markings. Congestion at peaks.	£2,000	5.9.13	12.9.13	Awaiting programme date	
						£37,600				
Bus Stop Improvements										
42	LEPP136016	TBC	High Ongar	Church, The Street, High Ongar	WORKS - Wooden bus shelter for elderly residents (£8k) in conservation area.	£8,000	21.11.13	3.12.13	2014/15	Completed
						£8,000				
Total recommendations for O&R Division						**£45,600**				

ECC/Epping Forest District LHP - Scheme Recommendations 2013-14 (Version 16) Report 3

Ref	Scheme code	Design code	Town	Location	Description	Budget	Recommend date	CM approved date	Expected complete	Status
WALTHAM ABBEY DIVISION										
Casualty Reduction Schemes										
43	LEPP131021	DC1808 ITS0035	Waltham Abbey	A121 Station Rd - Meridian Way j/w B194 Highbridge St & Beaulieu Dr.	Feasibility study, prelim. designs & costings - 14 PICs - assess signalling data and options for junction improvement incl. impact of proposed retail park	£10,000	6.6.13	25.6.13	31/03/14	Completed study - Options added to Potential Schemes list
						£10,000				
Bus Stop Improvements										
44	LEPP136012	TBC	Waltham Abbey	Saxon Way stop, Crooked Mile	DESIGN & WORKS - 2 bus cages to prevent parked cars blocking access to stops.	£2,000	5.9.13	12.9.13	On Hold	Residents consultation received objections. LHP to advise how to proceed with scheme.
						£2,000				
Total recommendations for WA Division						**£12,000**				

Recommendations for all divisions	**£165,600**

	new info
	complete
	action
	works pending CM approval
CM	Cabinet Member
TRO	Traffic Regulation Order
D&C	Design & Consultancy
HLO	Highways Liaison Officer
PIC	Personal Injury Collisions
VAS	Vehicle Activated Sign
SID	Speed Indicator Device
EH	Essex Highways
ITS	Integrated Traffic Systems & Congestion Team
PT	Passenger Transport

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ECC/Epping Forest District LHP - Proposed Scheme List 2013-14 (Version 16) Report 4

Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
BUCKHURST HILL & LOUGHTON SOUTH DIVISION										
BH&LS - Minor Schemes										
1	LEPP132033		Loughton	Parndon House, Valley Hill	Cars parked on verge causing damage. Investigate laybys or measures to restrict parking on frontages	£4,000	July 2013	Cllr	Green	Option for £4k feasibility study for laybys and or frontings to verges. Div. Member to discuss with town Cllr
						£4,000				
BH&LS - Bus Stops										
2	LEPP135019		Loughton	150042016011, Oakwood Hill, adjacent to junction with South View	Install new wooden shelter to replace existing one in disrepair.	£8,500	Nov 2013	EFDC	Green	Supported by EFDC. Cllr to consider for LHP recommendation
						£8,500				

ECC/Epping Forest District LHP - Proposed Scheme List 2013-14 (Version 16) Report 4

Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
CHIGWELL & LOUGHTON BROADWAY DIVISION										
C&LB - Minor Schemes										
3	LEPP132060		Loughton	Ibbetson Path j/w Westall Rd	Install no entry from Westall Rd 7.30-9.30 am to prevent morning rat run		Nov 2013	Cllr JK	Amber	Possibly shared with LC. Submitted for validation
4	LEPP132061		Chigwell	Forest Lane j/w Manor Rd B173	Install no entry from Manor Rd 7.30-9.30 am to prevent morning rat run and traffic shooting across from New Forest Lane		Nov 2013	Cllr JK	Amber	Submitted for validation
5	LEPP142002		Chigwell	Vicarage Lane j/w Manor Road	Junction improvements	£118K		Cllr JK	Green	This is the scheme resulting from Feasibility Study under LEPP002015
						£118,000				
C&LB - Casualty Reduction Schemes										
6	LEPP131023		Chigwell	A1168 Chigwell Lane j/w M11 North-Bound Off-slip (Junction 5)	Preliminary design and investigation - Reduce A1168 west bound to one lane on approach to M11 slip road, signage improvements and street lighting assessment. Est. for detailed design and works £30k	£3,000		CRT	Green	CR Team chased status 23.10.13. Advised no budget till 2014/15. Cllr advised original scheme sent back for better solution. New retail park planned which might include a solution. CR Team resent. HLO circulated to divisional LHP member 20.12.13.
						£3,000				
C&LB - Bus Stops										
7	LEPP135021		Chigwell	Bus Stop 1500IM379 opposite brook Parade, High Road Chigwell	Metal Shelter with seating	£5,500	Nov 2013	Chigwell Parish Council	Green	No consultation required. Nov 2013 - Cllr rejected as another shelter around the corner. BSI Officer advises that other shelter is on a different route
						£5,500				

ECC/Epping Forest District LHP - Proposed Scheme List 2013-14 (Version 16) Report 4

Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
EPPING & THEYDON BOIS DIVISION										
E&TB - Minor Schemes										
8	LEPP132064		Epping	Theydon Road	Properties on a bend with limited visibility. Residents at Holly cottages having problems accessing their properties			Cllr JW	Red	Extending speed limit rejected. Against policy. Cllr to consider redefining problem
9	LEPP006010		Epping	Ivy Chimneys nr School	20 limit outside school - Scheme validated - Recommendation flashing lights sign to diagram 545 and sub plate with new combination sign 545 plus 'School 20 when lights show' plate part time advisory 20mph limit. £3.7k (old estimate)	£3,700		Town council	Green	Linked - DC1644 design for build outs for easier crossing - complete. Cllr. JW to discuss with HLO. On hold pending installation of DC1655 & ideas for parking restrictions on Centre Drive
10	LEPP132037		Epping	Cottis Lane, High St B1393	Narrow lane off High St used as short cut. Danger to pedestrians and congestion. Close or restrict access	£10,000	July 2013	Cllr JW	Green	Validation results 27/01/14 - Suggested Feasibility study to fully consider options, with Public Consultation on any proposals
11	LEPP132048		Epping	Bury Lane & High Rd Epping	St Johns School has relocated (Sept 2013). New school warning signs required	£5,000	Sept 2013	School	Green	Scheme validated 27/01/14 - two existing "new Road layout" signs on Bury Lane either side of school access, Lower Bury Lane/High Road relocate existing sign and ne sign, allowing for external lighting
12	LEPP132049		Epping	Bury Lane, Epping	St Johns School has relocated (Sept 2013). For the existing 40 to be reduced to 30 (Highfield Green to the cemetery)	£420	Sept 2013	School	Green	Scheme validation process requires two speed surveys
13	LEPP133015		Epping	Hemnall St & High St Epping	New footway on east side of Hemnall St to the bend where pupils can cross to the existing footway on the south east. If possible, move the pedestrian refuge closer to Hemnall St to improve chances of pupils using it to access the proposed east side footway.	£5,000	Sept 2013	School	Green	Scheme Validated 27/01/14 - Feasibility/Design Study due to complexity of site
14	LEPP001014	New	Epping	Lindsey Street	VAS site	£6,000		Cllr	Green	

ECC/Epping Forest District LHP - Proposed Scheme List 2013-14 (Version 16) Report 4

Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
E&TB - Minor Schemes (continued)										
15	LEPP132019	New	Epping	War Memorial, Lindsey Street	Change link road to Option 1- to 2.5m footway, Option 2 - to grass/remove highway rights, Option 3 - remove highway rights and realign Lindsey Street jw high Street, Option 4 - make one-way to vehicles	Option 1 - £20k + legal costs Option 2 - £25k + legal costs Option 3 - £15k + legal costs Option 4 - TBC		Cllr	Green	
						£90,100				
E&TB - Casualty Reduction Schemes										
16	LEPP131024		Theydon Bois	B172 Coppice Row (Wakes Arms to Piercing Hill)	Preliminary design and investigation for significant signage improvements and substantial vegetation cut back to reduce collisions. Est. for detailed design and works £30k	£3,000	Nov 2013	CRT	Green	HLO circulated to divisional LHP member 20.12.13.
						£3,000				

ECC/Epping Forest District LHP - Proposed Scheme List 2013-14 (Version 16) Report 4

Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
LOUGHTON CENTRAL DIVISION										
LC - Minor Schemes										
17	LEPP132050		Loughton	A121 Church Hill j/w Kings Green/York Hill/Pump Lane	HGVs, especially international drivers, accessing residential roads in Loughton north of A121. 3 junctions highlighted by Cllr in the conservation area.	Option 1 £4,500 or Option 2 £15,000	Nov 2013	Cllr CP	Green	Scheme Validated 27/01/14 - at each of three junctions - Option 1 - Two Unsuitable for HGVs signs, Option 2 - Two 7.5T Weight Limit and Except for Loading signs (need to check TRO)
18	LEPP132060		Loughton	Ibbetson Path j/w Westall Rd	Install no entry from Westall Rd 7.30-9.30 am to prevent morning rat run		Nov 2013	Cllr JK	Amber	Possibly shared with CLB. Submitted for validation
19	LEPP132051		Loughton	The Drive j/w A121	Improved signage for no through road. Vehicles turn off the High Rd looking for shortcuts.		Sept 2013	Cllr CP	Amber	Submitted for validation
20	LEPP133013	New	Loughton	Millsmead Way j/w Harwater Drive	Study suggest localised hardening of verges	£10,000		Cllr	Green	
						£25,00				
LC - Bus Stops										
21	LEPP135018		Loughton	Bus Stop 42014003 The Lindens on Alderton Hall Lane	Provide bus cage and associated parking restriction	£2,500	Jan 2014	Member of public	Green	LHP previously agreed metal shelter at this stop, following feedback now requires bus cage.
						£2,500				
LC - PRoW										
22	LEPP138002		Loughton	Shaftesbury Rd to Forest Rd	PRoW resurface. Highly used by locals and school children. Impassable in bad weather		July 2013	Cllr	Amber	1.8.13: PRoW Team waiting for Conservators to respond re permission. OK if bonded resin. PRoW to cost

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
LC - Casualty Reduction Schemes										
23	LEPP131025		Loughton	A121 Golding's Hill (Wakes Arms to Baldwin's Hill)	Preliminary design and investigation for significant signage improvements and substantial vegetation cut back to reduce collisions. Est. for detailed design and works £40k	£3,000	Nov 2013	CRT	Green	HLO circulated to divisional LHP member 20.12.13.
						£3,000				

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
NORTH WEALD & NAZEING DIVISION										
NW&N - Minor Schemes										
24	TBC		Nazeing/ Bumbles Green	Back Lane j/w Nazeing Common	Junction Improvements. Due to the speed of vehicles along Nazeing Common they feel that there is insufficient time for vehicles to pull out of Back Lane safely.			Cllr RB	Red	Scheme validated - recommendation not to proceed with scheme no accident history could cause extra signage. Speed survey Sept 2013 - results 47-49mph in 60. Cllrs to consider.
25	LEPP132045		North Weald	Emberson Way, outside North Weald Library car park	Parking on verge causing damage to verge, pavement and obstruction close to junction and entrance to library car park. Repair verge and pavement and instate 2 bollards, to match, if possible, existing bollards on Emberson Way closer to junction.	£2,000	Aug 2013	Cllr AJ	Green	Scheme Validated 27/01/14 - install three concrete bollards
26	LEPP132056		Nazeing	North St, Pecks Hill, Sedge Green.	Solutions to speeding concerns and volume HGV flouting weight limit. Request for Speed Reduction / HGV Prevention / VAS		Nov 2013	Cllr RB	Amber	Speed survey ordered on North St just south of Lake Rd. Sent for validation
27	LEPP132055		Nazeing	Middle St (30mph) near Hoe Lane, EN9 2LG	Speeding concerns at accident black spot - request for speed reduction / traffic calming / VAS		Nov 2013	Cllr RB	Amber	Speed survey ordered. Sent for validation
28	LEPP138003		Roydon Hamlet	Tinkers Lane off Tylers Road	Access ? Tinkers Lane is a PRoW Bridleway 203-37. 40 mph limit applies along Tylers Rd.		Nov 2013	Cllr AJ	Amber	Extent of highway results returned. Cllr to define scheme request
29	LEPP132057	NEW	Roydon	Epping Rd	On behalf of blind/partially sighted resident request for 2 blind/disabled person warning signs and 2 slow roundels on road		Nov 2013	Essex Cares/ Parish	Amber	Sent for validation
30	LEPP132062	NEW	Nazeing	Nazeingbury Parade, Nazeing Road	Parking on carriageway causing congestion/safety issues			Cllr	Red	Validation advises that query is sent to Parking Partnership
31	LEPP130311	NEW	Nazeing	Middle St - link Bumbles Green to PROW FP59	No pedestrian link	£13,830		Cllr	Green	Walkable verge can be put in
						£15,830				

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
NW&N - Bus Stops										
32	LEPP145001		North Weald Bassett	The Talbot, High Road	New shelter, top up of £3k to remaining S.106 monies	£3,000	April 2014	Member of public	Green	Supported by Parish Council.
						£3,000				
NW&N - Casualty Reduction Schemes										
33	LEPP131026		Broadley Common	B181 Epping Rd j/w Common Road	Preliminary design and investigation for junction improvements to reduce collisions. Est. for detailed design and works £30k	£3,000	Nov 2013	CRT	Green	HLO circulated to divisional LHP member
34	LEPP131027		Nazeing	Sedge Green j/w Dobbs Weir Rd	Preliminary design and investigation for bollards to prevent parked cars obstructing visibility - to reduce collisions. Est. for detailed design and works £4k	£1,000	Nov 2013	CRT	Green	HLO circulated to divisional LHP member
						£4,000				

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
ONGAR & RURAL DIVISION										
O&R - Minor Schemes										
35	TBC		Stapleford Abbotts	B172, Abridge and Stapleford Abbotts	Removal of weight restriction. Why needs defining.			Historic scheme list	Red	Likely lead to rat running of London traffic towards the A414 via Ongar. Also the Police cannot enforce the weight restriction on Hook Lane owing to the signage. Officers have looked at the signage and it can not be signed any differently. ECC Legal Department have looked at the TRO and it appears that old Epping TRO needs to be amended to enable enforcement. Awaiting freight management strategy. Cllrs to consider archiving
36	LEPP132035		Stanford Rivers	A113 London Road j/w Shonks Mill Road	Junction improvements. Accidents occur at this location			Parish Council/ Cllr PK	Amber	Summer 2013 - VALIDATION - rejected request. A113 is a Priority Route - to reduce the speed limit would be against policy and would require sign-off by Cabinet Member. request. Junction improvements deemed not necessary. HLO to send for re-validation to assess measures to calm traffic/ advance warnings from Ongar coming over the brow. e.g. junction ahead VAS. Validation submitted 19.12.13
37	TBC		Moreton, Bobbingworth and the Lavers	Bridge Road, Moreton	HGV restriction on bridge			Parish Council	Red	Scheme validation - feedback from Structures team this bridge is not structurally weak and has no abnormal load ban. If required would need an Environmental Weight Limit on a length of road but any restriction needs to be looked at its effect upon surrounding areas. Cllrs to consider archiving
38	TBC		Moreton, Bobbingworth and the Lavers	Pedlars End	New footway. Needs defining.			Parish Council	Amber	Validation for feasibility study would be required. Cllrs to consider archiving
39	TBC		Ongar	Greensted Road, Chipping Ongar	Two VAS / speed reduction to 30mph			Parish Council	Amber	VAS subject to suitable locations being found. On hold pending effectiveness of forthcoming school flashing signs scheme
40	TBC		High Ongar	A414 Chelmsford Road	Safety review. Accidents at Milestones. Needs defining.			Parish Council	Amber	Validation for feasibility study would be required. Cllrs to consider archiving
41	TBC		High Ongar	Mill Lane	Relocate Not suitable for HGV's sign to Hallsford Bridge Road.			Parish Council	Amber	TRO would need to be amended. Validation would be needed. Cllrs to consider archiving

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
O&R - Minor Schemes (continued)										
42	TBC		Abridge	New Farm Drive opp. j/w Knights Walk	Incorporate verge into narrow carriageway - incorporated into public highway.			Councillor and Parish Council	Amber	Would need to establish if owner happy to give verge over to highway, no response from resident. Cllrs to consider archiving
43	LEPP132036		Ongar	117 High St, Jasmine House	Cars park on pavement close to entrance of 117 High St, restricting access. Investigate feasibility of bollards either side of entrance	£2,500	July 2013	Cllr PK	Green	Scheme Validated 27/01/14 - four cast iron bollards to match existing, two o/s 117 and two O/s Post Office. Could displace parking further down road.
44	LEPP132058		Fyfield	Brickyards layby, Dunmow Rd, CM5 0NW	Request for white lining and signage to prevent lorries etc parking over runways to properties and blocking exit/access		Nov 2013	Cllr MMc	Amber	Supported by Fyfield PC. Boundary check requested and sent for validation 19.12.13. This might be a parking partnership issue (NEPP). If so needs submitting to Highway Enquiries.
45	LEPP132059		Stapleford Tawney	Tawney Lane / Old London Road,	Request to correct negative camber on the bend to correct dangerous road conditions in wet and icy conditions. Also remove a section of the old London Road which attracts rubbish dumping		Nov 2013	Cllr MMc	Amber	Supported by STPC. Sent for validation
						£2,500				
O&R - Bus Stops										
46	LEPP135020		Ongar	Bus stops IM1428 and 21013003 high street Ongar - near station	2 wooden shelters. Bus stops close to Ongar station and well used, also outside an assisted living development ad used by older people	£17,000	Nov 2013	Member of public	Green	Supported by Ongar Town Council. BSI Officer to discuss S106 with OTC
						£17,000				
O&R - Public Rights of Way										
47	LEPP1408001	New	Ongar	PRoW FP03 - Loves Lane Recreation Ground Ongar	Surface improvements	£8,000	March 2014	PRoW team	Green	Supported by PRoW team, heavily used PRoW.
48	LEPP148002	New	Ongar	PRoW Byway 28 - Curtis Mill Lane, Stapleford Abbotts	Surface/drainage improvements over 1300m	£155,600	March 2014	PRoW team	Green	Supported by PRoW team, heavily used PRoW.
49	LEPP148003	New	Ongar	PRoW Byway 1 - North Lane, Moreton	Surface/drainage improvements over 1000m	£50,000	April 2014	PRoW team	Green	Supported by PRoW team, heavily used PRoW.
						£213,600				

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
WALTHAM ABBEY DIVISION										
WA - Minor Schemes										
50	TBC		Waltham Abbey	Honey Lane (east of Wood Green Road), Waltham Abbey	Difficult to cross road/Speeding. Speed Control Measures. On PR2 40 mph road - limited frontages several sections. Suggestions for footpath & VAS			Cllrs	Amber	Problem need defining. Suggest site visit, speed survey, validation
51	LEPP132053		Waltham Abbey	Crooked Mile, Waltham Abbey - junctions of Saxon Way and Monkswood Ave.	Improved signage for 2 cul de sacs. Vehicles turn off the busy Crooked Mile into Saxon Way and Monkswood Ave looking for shortcuts. However they are dead ends. This is a particular problem when lorries are involved which get stuck.		Sept 2013	Cllr JL	Amber	Proposal to add another cul de sac sign on a post to each side road entrance on the opposite side to the existing faded signs. New signs could replace the existing ones. Investigation into the advance warning sides on Crooked Mile for each side road in both directions either 2 combining messages for both side roads, or 4 with separate messages, e.g. “No through road Saxon Way 50 yards [arrow]". Sent for validation
52	LEPP132054		Waltham Abbey	Crooked Mile (B194), from junction of Waltham Rd - Marsh Hill & St Leonards Rd to Waltham Abbey	Reduce limit to 40 mph. B194, according to Cllrs, is 50 mph and there have been numerous accidents. (Google shows 60 and 40 as one enters WA but this might have changed since Google mapped it in 2009). PR1 route. PICs in last 3 years: 16 slight 8 serious 1 fatal		Sept 2013	Cllr JL	Amber	Sent for validation
53	TBC		Waltham Abbey	Parklands approaching the B194 roundabout	VAS		Sept 2013	Cllrs	Amber	Cllrs to complete a scheme request template. It will need a speed survey. For a VAS the average speed must be more than 5mph above limit.
54	LEPP132052		Waltham Abbey	Margherita Rd	Improved signage for cul de sacs. Vehicles turn off the Honey Lane looking for shortcuts. However they are dead ends. This is a particular problem when lorries are involved which get stuck.		Nov 2013	Cllr RG	Amber	Rangers cut back vegetation around existing signs and submitted new signage for validation
55	LEPP002013	New	Waltham Abbey	Crooked Mile, near Saxon Way	Funding towards implementation of signal controlled crossing design and works. Provisional estimate for whole scheme £177k	£125K		Cllrs	Green	Scheme top up £52k previously recommended

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status
WA - Minor Schemes (continued)										
56	LEPP007005	New	Waltham Abbey	A121 Highbridge Street/B194 Beaulieu Drive	Junction and Signal improvements - (1) Left turn filter lane, (2) Signs/Lines, (3) right turn facility, (4) investigate co-ordination with Herts CC signals	(1) £11.2K (2) £14.5K (3) £4.7K (4) £9.2K		Cllrs	Green	
						£164,600				

Potential Schemes Summary			
Division	**Scheme**		**Total Scheme Costs**
	Type	**Cost**	
Buckhurst Hill & Loughton South	Minor	£4,000	£12,500
	Bus Stop Improvements	£8,500	
Chigwell & Loughton Broadway	Minor	£118,000	£126,500
	Casualty Reduction	£3,000	
	Bus Stop Improvements	£5,500	
Epping & Theydon Bois	Minor Schemes	£90,100	£93,100
	Casualty Reduction	£3,000	
Loughton Central	Minor	£25,000	£30,500
	Bus Stop Improvements	£2,500	
	Casualty Reduction	£3,000	
North Weald & Nazeing	Minor	£15,830	£22,830
	Bus Stop Improvements	£3,000	
	Casualty Reduction	£4,000	
Ongar & Rural	Minor	£2,500	£233,100
	Bus Stop Improvements	£17,000	
	ProW	£213,600	
Waltham Abbey	Minor	£164,600	£164,600
Total for Epping Forest D istrict			£683,130

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Ref No.	Scheme code	NEW	Town	Location	Description	Est. Budget	Requested date if known	Requested by	RAG	Status

	new info	HLO	Highways Liaison Officer
Green	meets policy	PIC	Personal Injury Collisions
Amber	requires further information	VAS	Vehicle Activated Sign
Red	against policy	SID	Speed Indicator Device
CM	Cabinet Member	EH	Essex Highways
TRO	Traffic Regulation Order	ITS	Integrated Traffic Systems & Congestion Team
D&C	Design & Consultancy	PT	Passenger Transport

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ECC/Epping Forest District Local Highways Panel

Feasibility Studies and Designs – April 2014

a. Buckhurst Hill & Loughton South

Page 2 - DC1692 - Feasibility Study – Pedestrian Crossing Facilities

Station Way, Buckhurst Hill

b. Epping & Theydon Bois

Page 16 – DC1670 – Feasibility Study – Vehicle Activated Signs

Lindsey Street/Centre Drive, Epping

Page 25 – DC1810 - Feasibility Study – Footway construction

War Memorial, Lindsey Street, Epping

c. Loughton Central

Page 31 – DC1959 - Design – Pedestrian crossing point

Cleland Path/England's Lane, Loughton

d. Nazeing & North Weald

Page 32 – DC1813 – Feasibility Study – Walkable Verge

PROW FP59 Middle Street, Bumbles Green

e. Waltham Abbey

Page 46 – DC1808/ITS0035 – Feasibility Study – Junction Improvements

A121 Meridian Way and B194 Highbridge Street, Waltham Abbey

Feasibility study

Station Way, Buckhurst Hill
Pedestrian Crossing Facilities Feasibility Study

Job Number:	**DC1692**
Doc Ref:	**Feasibility Report**
Author:	**Jamie Twinn**

Document History

Revision	Purpose	Originated	Checked	Approved	Date
N/A	Draft for approval	JT	SM	CB	05.02.14

1. Introduction

1.1 Project Background

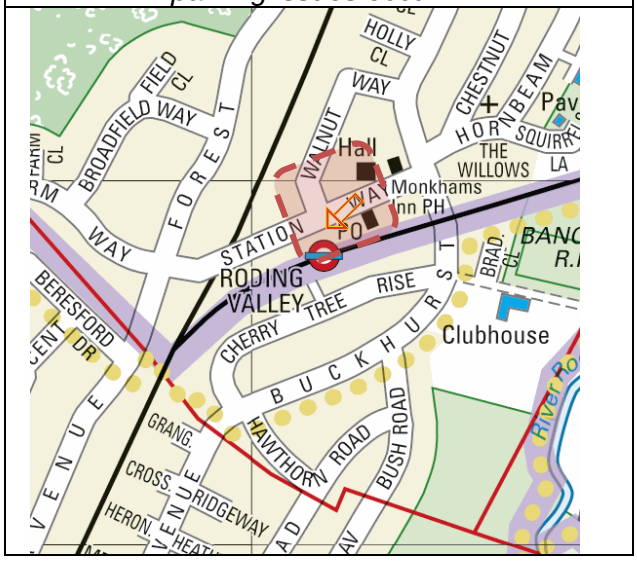
Funding for this scheme has been approved by the Epping Local Highways Panel. County Cllr. Valerie Metcalfe and District Cllr. Sylvia Watson have asked for the feasibility of a pedestrian refuge island to be considered at this location. The proposal will look at options for providing a dedicated crossing point between the parade of shops and Roding Valley tube station.

2. Existing Conditions

2.1 Location / Land Use

- Station Way, Buckhurst Hill, is classified as a minor road. Figure 1.1 below provides detail of the site location

Fig 1.1 Location Plan and highlight area parking issues occur



- Station Way has an equal split of commercial and resident units, with the commercial units congregating around the centre of the road – outside Roding Valley tube station.

- Station Way and Walnut Way are staggered junctions which means providing a suitable location for crossing facilities is potentially more difficult.

- Station Way is a two way road; there is a typical footprint of groups of parked vehicles parking partially on the footway on both sides of the carriageway to the East of the station. To the West of the station vehicles park off the footway and only on the southern kerb line.

Eastern side of Station, parking patterns	*Western side of Station, parking patterns*
	

2.2 Traffic Flows & PV² Survey Results

- A representative PV² Survey was undertaken at this location on the 27th Feb 2014, the results of which are detailed in fig. 2.1 below. Observations were made for a 2 hour PM peak period beginning at 15:34.

Period Ending	Westbound Traffic Count	Eastbound Traffic Count	Total Both Directions (V)	Pedestrians (P)
15:34-17:34	652	857	1509	115

PV2 Calculation

Qualifying Criteria $PV^2 > 2*10^8$

PV^2 $115(1509^2)$

$= 261864315$

$> 2*10^8 = 2000000000$

$\therefore$ **Observed PV^2 is larger than $2*10^8$ which meets the qualifying criteria**

Figure 2.1 – PV^2 results and Analysis

2.3 Site Observations

- The site was visited on the 21st Aug 2013 and the results of this site visit were recorded in the figure 2.2 below.

Site Assessment Record	
Engineer	*Jamie Twinn*
Date	*21-Aug-13*
1.1 Site Location	Station Way, Buckhurst Hill
OS Coordinates	541,580,192,934
1.2 Carriageway Type	Single Carriageway
1.3 Carriageway Width	7.3m
1.4 Footway Width	5.4m
1.5 Road Lighting Standard	The street lighting facilities at this site were not formally tested in accordance with BS 5489 from a luminosity perspective. Although, the site seems to be generally well lit, and operates on a mainly single sided lighting system. If a crossing were to be feasible it is likely that the existing lamp column outside the parade of shops 38-50 Station Way would need to be relocated.
1.6 Nearby Junctions	The nearest significant traffic junction is 150m east of the site, there are no other crossing facilities for pedestrians until this junction.
1.7 Other nearby Crossing facilities	The nearest crossing facility to the west of the site is a refuge island 200m away
1.8 Waiting/Load/Stopping Restrictions	The site has some Double Yellow Lines on the junction of Station Way/Walnut Way and a disabled bay outside no. 50 Station Way. Other than this it is mainly unrestricted and occupied by either residents or parked vehicles for access to the tube. There is currently a consultation process being undertaken into the parking facilities at this site which will impact on the site observations and requirement for crossings.
1.9 Road Surface Conditions	Whilst no skid resistance test have been undertaken at this location, the surface looks well maintained and adequate.

Figure 2.2 – Site Assessment Record

2.4 Collision Analysis

- There has been one reportable PIC involving pedestrians at this location in the last 5 years, the details of which are listed in Table 2.1 below. This collision may have been mitigated by the presence of some form of crossing facility. Although, the number of collisions at this site are lower and statistically proportionate to through-put of pedestrians observed at this location.

Involving	Severity	Date/Time	Conditions	No. of Casualties
Car and Pedestrian	1 Serious	22nd Oct 2011 @ 13:30	Dry	1 Pedestrian

Table 2.1: 60 months PICs Station Way, Buckhurst hill

2.5 Statutory Services

- There are multiple statutory services buried in the footway at this location. These would conflict with any dropped kerb installations at this site and increase the cost of any construction works. If kerb realignment works were to be required at this location there would be a high chance of conflict with stats of which would probably lead to the requirement for redirection of the services.

- There are also some statutory services which run perpendicular as well as along the footway to the footway. These would conflict with refuge island location as well as conflict with dropped kerb installation. The presence of these stats may result in additional cost through the diversion of statutory undertaker's plant.

2.6 Linked Schemes – DC349 Buckhurst Hill Parking Review

- In parallel to these works, there is a major parking review being undertaken in Buckhurst Hill, of which some parking restrictions are being considered on Station Way which may affect some of the solutions being put forward in this study. Therefore, this feasibility study should not be finalised until the parking restrictions are decided and are on the ground. The measures being taken forward may effect any conclusions that are drawn in the meantime.

3. Feasibility Study Requirement

3.1 Brief Requirement

- The brief for this scheme was to undertake an initial investigation into improving the pedestrian crossing facilities along Station Way; the main mandate was to explore the option for a pedestrian refuge at this location.

3.2 Site photos

View from western side of Station, looking east.	*View level with central island, Roding Valley tube Station.*	*View from eastern side of Station, looking east.*
		

4 Option 1 – Refuge Island

4.1 Design Introduction – *as illustrated in Appendix B*

- This option looks into the feasibility of introducing a central reservation on Station Way to the east of it's junction with Walnut Way, the location identified in appendix B is likely to be the closest possible to meet the observed pedestrian desire lines.
- This design looks at installing a 1.2m clear width for waiting pedestrians, in accordance with the minimum allowed *(Paragraph 3.2, LTN 2/95 – The design of pedestrian crossings).*
- This leaves a carriageway width of 3.0m in both directions, which does not meet policy and would not be fit for purpose.
- The refuge would require 1:20 taper markers (minimum allowable) to Diagram 1040 of the Traffic Signs Regulations and General Direction (TSRGD). These limit where the refuge island can be located as the taper markings should not run across side roads, in this case Walnut Way.
- This option would require some form of Yellow Line restriction to protect access through the site and the sight lines of pedestrians. The only options at this location would be Double Yellow Lines as we are utilising the minimum requires which inherit access difficulties issues.

4.2 Advantages

- Safely allows pedestrians to wait in the centre of carriageway for a break in the traffic.

4.3 Disadvantages

- Would require yellow lining work to protect pedestrian sightlines, ideally in the form of No Waiting & No Loading At Any Time. This would be controversial and may have a high likelihood of strong objections from the commercial outlet owners at this location.
- Implementation of this scheme would also require the removal of the disabled parking bay at this location, which is likely to be controversial with the owner.
- 3.0m carriageway width is not enough for this type of road, it would need to be at least 3.65m, this would have to be increased to 4.0m if buses utilise this road.
- The staggered junction and taper lengths restrict where the island can be located and take it away slightly from the most common pedestrian desire lines.

4.4 Option Evaluation

- This is not feasible as the remaining widths of carriageway are inadequate. It is unlikely that kerb realignment can be undertaken at this site. Although, the full feasibility of kerb realigning and how this effects the scheme feasibility would not be known until the detailed design is undertaken. Either way this would likely increase the cost of the project exponentially.

5. Option 2 – Zebra Crossing

5.1 Design Introduction *- as illustrated in Appendix C*

- Option 2 looks in to the feasibility of installing a Zebra crossing in accordance with the design outlined in Appendix C. This option would require the existing disabled bay to be removed as well as adjusting the Yellow lines in place at this site to tie up with the extents of the Zig-Zags. This would require the installation of dropped kerbs and tactile facilities either side of the crossing.

5.2 Advantages

- Provides a safe crossing point for pedestrians.

5.3 Disadvantages

- Will likely cause delays to the journey times of through traffic at peak times.
- Crossing location is limited by the staggered junction nearby; this therefore means the crossing location is away from the pedestrian desire lines.
- Implementation of this scheme would require the removal of the disabled parking bay at this location, which is likely to be controversial with the owner.
- Would require the installation of Zig-Zags and extension of yellow lines outside the parade of shops, this is likely to be controversial with the shop owners at this location.
- This option would be more expensive than option 1; Internal Essex CC guidelines (LHP Terms of Reference & Members' guide- July 2013) approximate the cost of Zebra crossing facilities to be around £25k. The unknown cost of the work required diverting stats and design work is likely to increase this cost significantly.

5.4 Option Evaluation

- The cost of the above scheme would not justify the limited benefits that may result from its implementation. The feasibility of this option will also not be fully known until the completion of a detailed design has been completed. This in turn increases the risk of remedial or abortive work being required. There are also no guarantees the schemes implementation would solve the pedestrian safety issues at this site entirely.

6. Option 3 – Do Nothing

6.1 Design Introduction

- Whilst it is understood that there may be times where pedestrians would benefit from some form of crossing facilities at this site, there are inherit issues with the geometry and function of the site setup which inhibit the implementation of any solution. The carriageway at present is 7.4m wide on average; this does not provide enough space to justify the installation of a refuge island which would restrict the carriageway width for vehicles even further. The demographics of this site do not lend themselves towards installing a zebra crossing. Therefore, the option of doing nothing or no change becomes an important option to explore as part of this report.

6.2 Advantages

- The other options would require some form of Zig-Zag/At Any Time restriction to protect pedestrian sight lines around any crossing point. These restrictions would not be welcomed by the shop owners at this location and would lead to a complicated and controversial engagement.
- Collision stats do not suggest there is a major issue at this site from a safety perspective. There would not be any guarantee that a crossing point would reduce the risk on a pedestrian incident, as it would be likely the that the only feasible location for a crossing point would not met the ideal location the general public would require, which may lead to an adherence issue and people still crossing in undesignated locations.
- Doing nothing would reduce the chance of abortive work/ remedial work being required at this location. This may not be viewed as a suitable and adequate use of public funds.
- There is currently a parking study being undertaken at this location as previously mentioned in paragraph 2.6 of this report. As a result Option 1 or 2 should not be taken forward prior to the completion of the parking study.

6.3 Disadvantages

- The perceived problem will remain.

6.4 Option Evaluation

- Doing nothing would be the best option to take at the present time. The only other feasible option is for the installation of a Zebra crossing at this location. Although, the negatives strongly outweigh the positives for this option. Therefore, the only feasible option is to keep the site as it is at present.

7. Other Options: discarded during the design process

7.1 Puffin Crossing

- The possibility of introducing a puffin was explored at this location. Although, pedestrian volumes were not high enough to justify this facility. The cost of would likely exceed £140k (source = LHP Terms of Reference & Members' guide- July 2013).

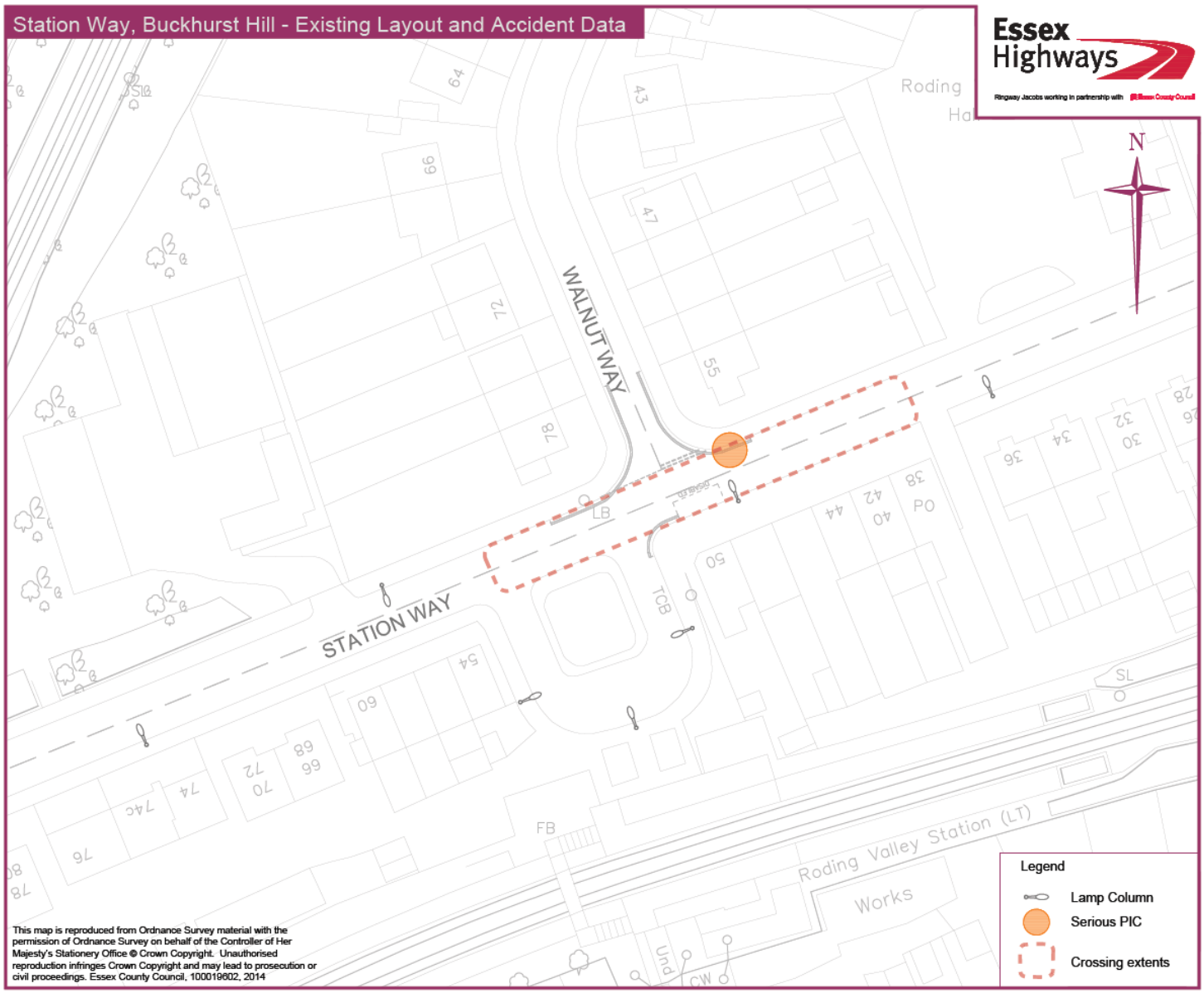
7.2 Footway Realignment Works

- Footway re-alignment work was considered at this site. Although, pinch points at this location look likely to make any major kerb re-alignment works very difficult, the presence of excessive levels of statutory services at this location as indicated in paragraph 2.5 of this report are likely to increase the cost of the project exponentially.

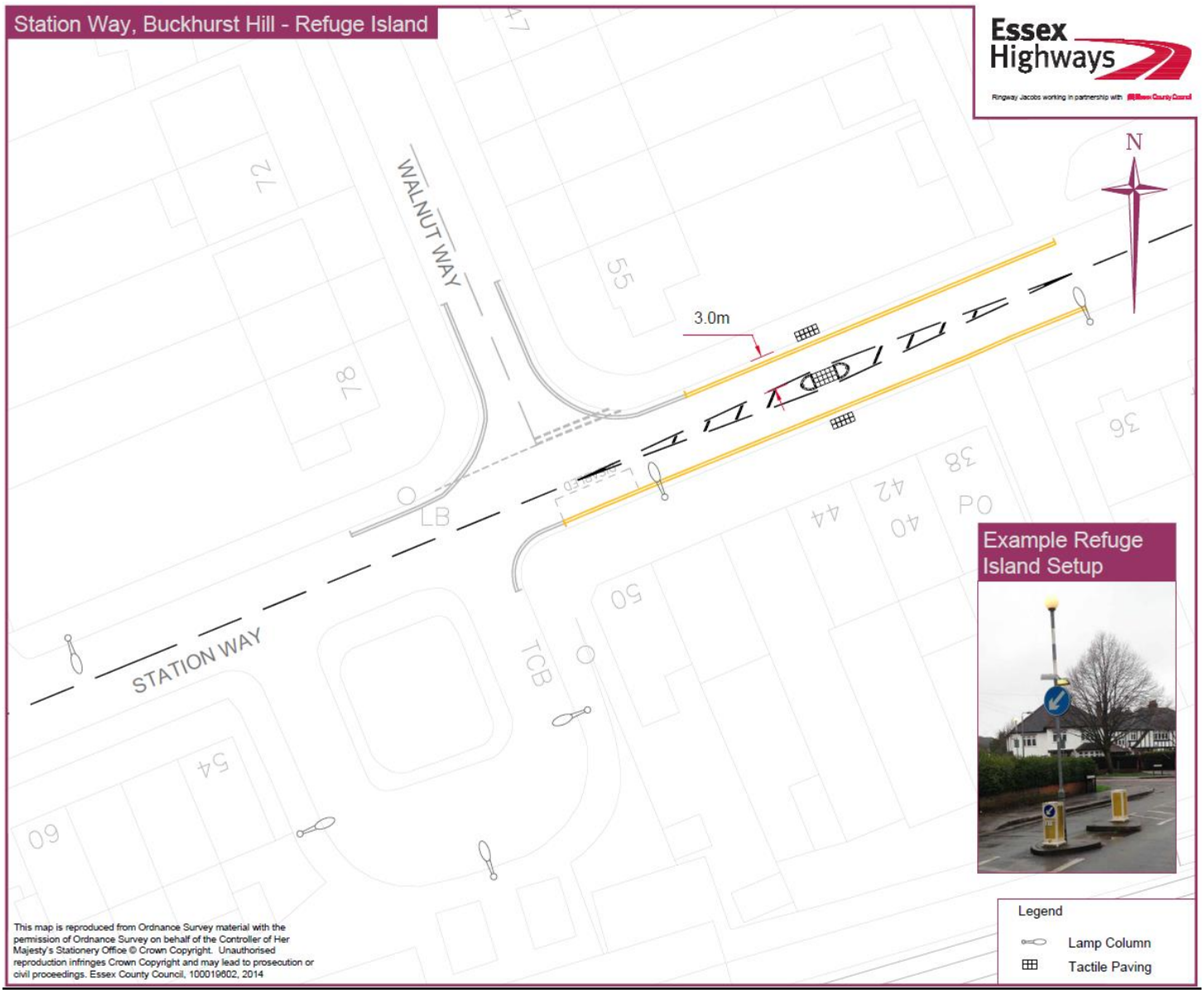
8. Conclusions and Recommendations

It is recommended that Doing Nothing (Option 3) at this location would be the best option to follow in this instance. From an engineering perspective it does not look possible to fit a refuge island at this site, in line with the concerns raised earlier in this report. A zebra crossing at this location is likely to be very controversial, costly and may require abortive and/or remedial works. It is not likely to provide the holistic solution required mainly due to the fact it is not possible to align the designed location of crossing with the general demand identified by observed pedestrian desire lines. Therefore, we have no guarantees that the implementation will have any impact on the safety of pedestrian facilities at this site.

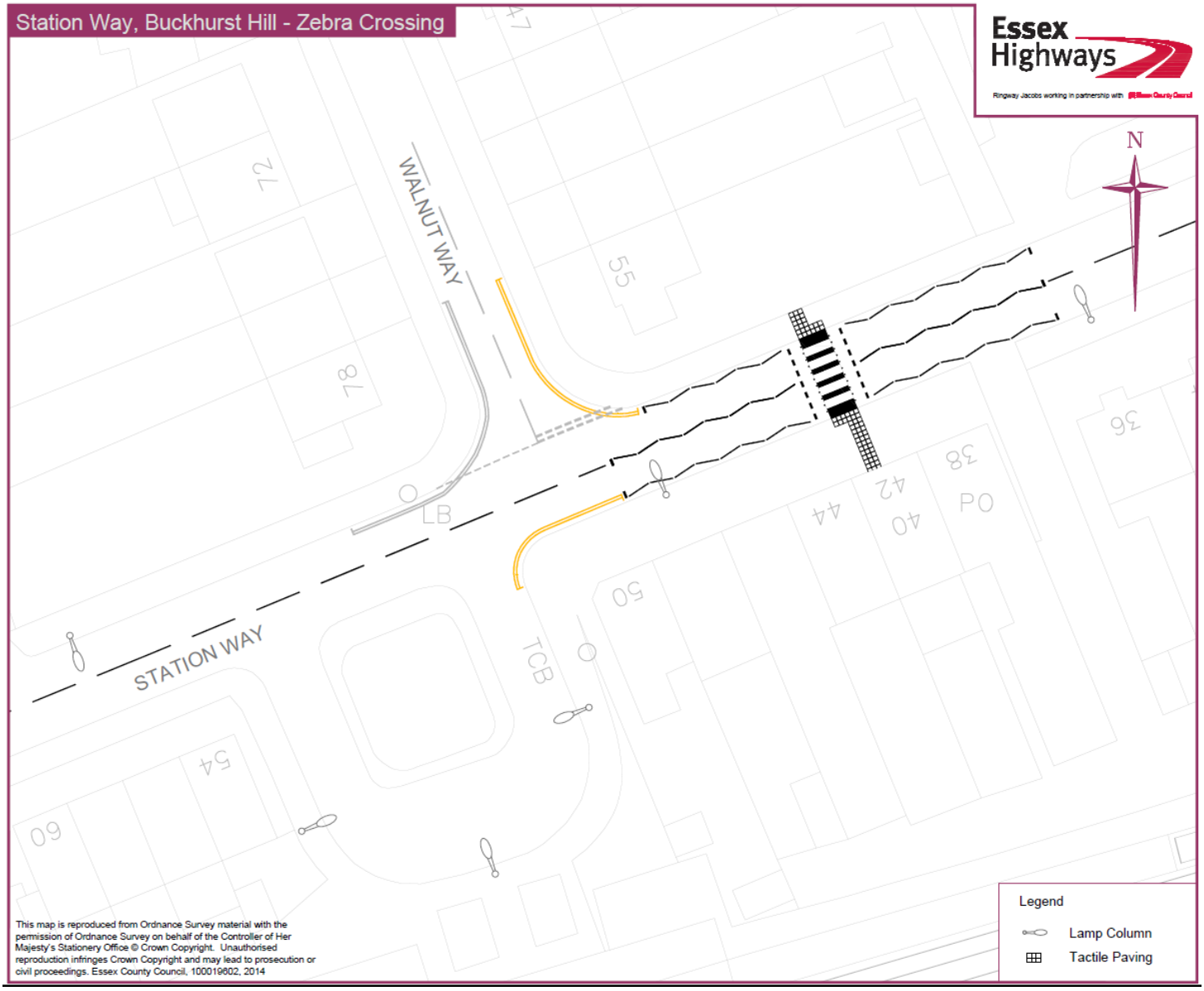
Appendix A: Existing Layout Plan



Appendix B: Option 1 Layout



Appendix C: Option 2 Layout



VAS Feasibility study

Lindsey Street/Centre Dive - Epping

Job Number:	**DC1670**
Doc Ref:	**Feasibility Report**
Author:	**Jamie Twinn**

Document History

Revision	Purpose	Originated	Checked	Approved	Date
N/A	Draft for approval	JT	ADJ	CB	11.03.14

1. Introduction

1.1 Project Background

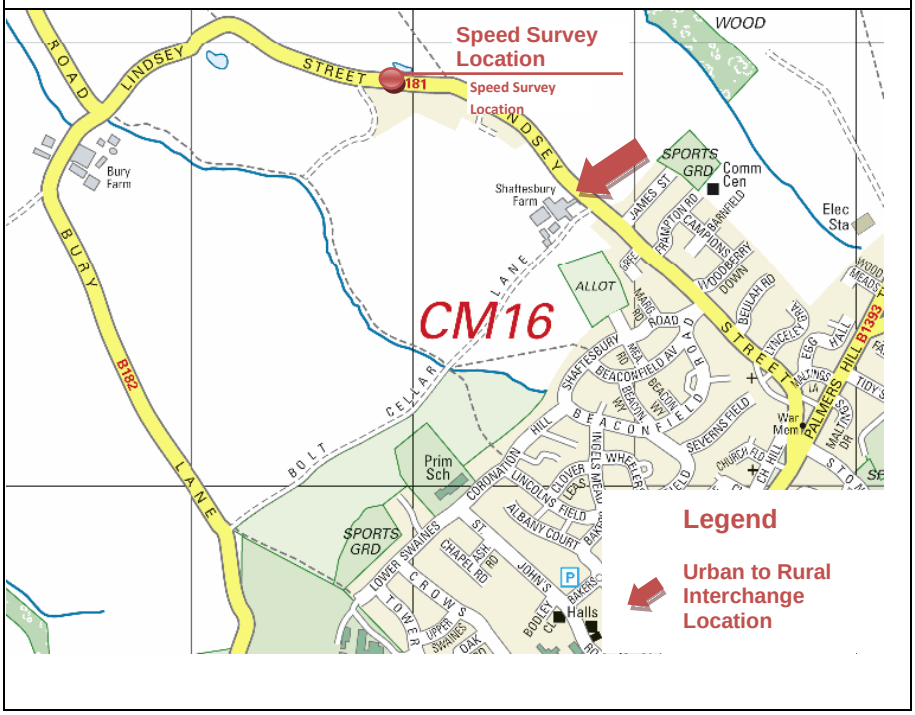
Funding for this scheme has been approved by the Epping Forest Local Highways Panel and requires a feasibility study to be undertaken to investigate the speeding issues observed on Lindsey Street and Centre Drive, Epping. Local residents have raised concerns over vehicles speeds along these routes to Cllr. Whitehouse, who raised the request for this scheme.

2. Existing Conditions – *Lindsey Street*

2.1 Location / Land Use

- Lindsey Street, Epping is a two way single carriageway and is a priority route 2 (PR2). It has junctions with the High Street in the South and Epping Road (also a PR2 route) which leads to Harlow and Epping. The current speed limit of this road is 30 mph.
- The road changes from urban to rural at the location indicated on Fig. 1.1 below. Drivers travelling northbound begin to build up excessive speed at this point. Further down Lindsey Street there are natural traffic calming features such as residential parking and residential units on both sides of the carriageway which bring down the average speeds observed.
- Fig 1.1 below shows a map of Lindsey Street and the surrounding area.

Fig 1.1 Lindsey Street location plan and speed survey location



2.2 Speed Survey Results

- A seven day speed survey for Lindsey Street was carried out between 6th-12th August 2013; the survey was taken from a point to the north of Lindsey Street's junction with James Street at a location where the road becomes more rural in nature as indicated in Fig 1.1. A summary of speed survey results are below:
    - NW bound average: Weekday 39.5 mph; 7 day 39.8 mph *(meets +5 mph mean speed criteria)*
    - SE bound average: Weekday 32.1 mph; 7 day 31.6 mph *(does not meet +5 mph mean speed criteria)*

2.3 Site Observations

The following observations were made during a site visit to Lindsey Street, conducted on the 18th July 2013 at 3pm:

- The presence of overhanging vegetation on Lindsey Street is potentially obstructing any proposed sign location.
- Existing residential parking and the presence of residency on both sides of the road on the carriageway to the South of Lindsey Street does naturally slow the average speed of traffic.

2.4 Statutory services

As part of the investigation of this project, a statutory undertaker's plant request was made; this highlighted multiple potential conflicts at the site. These potential conflicts may result in complications for installing the new post, and may even result in additional cost being incurred. Although, the details of this would be unknown until the actual sign post location is decided as part of the detailed design works.

2.5 Photographs - *(Lindsey Street)*

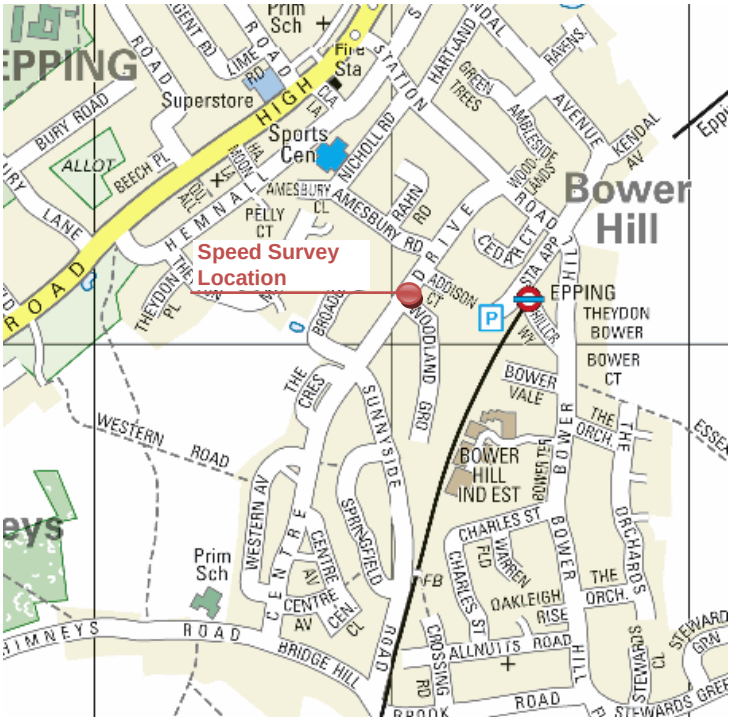
Lindsey Street towards junction with Epping Road	*Rural section of Lindsey Street and survey location- Lindsey Street*
	

3. Existing Conditions – *Centre Drive*

3.1 Location / Land Use

- Centre Drive, Epping is a two way single priority route 2 carriageway (PR2). Its main junctions are with Ivy Chimney's Road and Station Road. It is located near Epping tube station. The current speed limit of this road is 30 mph.
- The road benefits from natural traffic calming features in the form of residential parking, which spans from its junction with Ivy Chimneys road to a point opposite its junction with The Crescent.
- Fig 3.1 below shows a map of Centre Drive and the surrounding area.

Fig 3.1 Centre Drive location plan and speed survey location



3.2 Speed Survey Results

A seven day speed survey was carried out from 4th-10th February 2014; the survey taken from a point between the side road junctions of Woodland Grove and Addison Court along Centre Drive, as indicated in Fig 3.1. A summary of the speed survey results are below:

- NE bound average: 5 day 30.9 mph; 7 day 31.1 mph *(does not meet +5 mph mean speed criteria)*
- SW bound average: 5 day 30.6 mph; 7 day 30.4 mph *(does not meet +5 mph mean speed criteria)*

3.3 Site Observations

The following observations were made during a site visit to Centre Drive, conducted on the 18th July 2013 at 2pm:

- The presence of overhanging vegetation on Centre Drive is potentially obstructing any proposed sign location.
- Existing residential parking from The Crescent towards it's junction with Ivy Chimneys Road does provide natural traffic calming effects for that section of Centre Drive.

3.4 Statutory services

As part of the investigation of this project, a statutory undertaker's plant request was made; this highlighted multiple potential conflicts at the site. These potential conflicts may result in complications for installing the new post, and may even result in additional cost being incurred. Although, the details of this would be unknown until the actual sign post location is decided as part of the detailed design works.

3.5 Photographs - (Centre Drive)

Start of residential parking opposite The Crescent	*View looking North along Centre Drive*	*Speed survey location - Centre Drive*
		

4. VAS feasibility requirements

4.1 Brief requirement

- The project brief required an investigation into the feasibility of incorporating three Vehicle Activated Signs (VAS) and new posts both the sites listed above. One VAS on Lindsey Street for northbound traffic at the point where the road becomes rural in nature, and two VAS on Centre Drive in both directions past the residential parking observed at the southern most junction of The Crescent until Addison Court.
- In accordance with the Essex County Council Speed Management Strategy any proposed VAS sign would have to meet the following criteria;
  1. Is there a proven speeding issue at this site
  2. Has the existing speed limit been in place for 12 months
  3. The average speed is more than 5mph above the posted limit
  4. The sign is more than 70 metres inside the existing speed limit
  5. The signs will be powered by wind/solar wherever possible
  6. Is there sufficient space to safely install the device
  7. Can the device be secured at the site
  8. Is there a visibility of between 50m and 100m from which the drivers will be able to clearly see the device (enabling a 3 second view from the approach)

5. Economic Analysis

5.1 Approximate cost of a VAS sign

- The Table 5.1 below shows a estimated works cost based on previous schemes using Solagen as or supplier for the construction and installation of a VAS. Please note that this does not include any ongoing maintenance cost, though the VAS sign itself comes with a five year warranty. There is also the option to purchase an extended warranty from the supplier direct, to cover future maintenance.

Table 5.1 Approximate cost per unit VAS Sign - correct as of Sept 2013

	Quant	Unit	Supply Chain Composite Rate	Total Supply Chain Cost
SERIES 100 PRELIMINARIES				
TSM				
CAT scan	1.0	item	117.65	117.65
Install new flagpole and sign				
89mm diameter galvanised post	5.20	m	18.38	95.55
Concrete ST5 foundation (Inc. excavation - in house)	1.35	m^3	306.25	413.44
Solagen VAS sign (roundel and triangle)	1.0	item	4794.00	4,794.00
OPTIONAL EXTRA.. Solagen VAS sign (roundel and triangle) SLOW DOWN text an for additional £1000 /sign				
Total Cost				**5,420.64**

- Total cost listed above excludes cost for design and supervision.

- The costs above do not include any potential requirement for diverting or relocating stats, nor do they include the cost of trenching from existing UKPN connections if mains power is deemed to be the correct solution to power the sign.

6. Recommendation

6.1 Lindsey Street

We recommend a VAS sign is installed for vehicles travelling in the northbound direction only along Lindsey Street; this matches the requirement of the project brief. The detailed design should look at locating the VAS sign at a point where Lindsey Street becomes more rural in nature. Although, the VAS would be most effective if located within an area with residential activity on one side of the carriageway, thus reducing the risk of a vehicle vs pedestrian collision. Therefore, It is suggested locating the VAS at a point just south of where the speed survey was undertaken as indicated in figure 1.1 may be beneficial. The speed survey results for Lindsay Street listed in paragraph 2.2 show that this site could benefit from some form of traffic calming measures implemented to reduce average speeds, of which a VAS looks like a suitable solution. However, there are some potential conflicts with overgrown vegetation at this site which should be avoided in the design.

6.2 Centre Drive

The average speeds listed for Centre Drive in paragraph 3.2 do not meet the qualifying criteria for installation of VAS. Both sides of the carriageway at this location are below the average speed required to justify a VAS sign (qualifying criteria = 35.0mph).

DC1810 – Lindsey Street, Epping – Footway Construction

1.0 **Brief**

1.1 This scheme has been Identified by Epping Town Council and the Local Highway Panel to consider improving the existing junction layout of the B181 Lindsey Street with the B1393 in Epping and improve the view to the War Memorial.

1.2 The subject of this feasibility study is to investigate the removal of the highway rights and change the use of the carriageway adjacent to the War Memorial and to see what improvements can be made to the junction of the B181 Lindsey Street / B1393 High Street.

1.3 Design & Consultancy Group has been commissioned to look at the site and investigate the feasibility of carrying out improvements works.

2.0 **Initial site investigation**

2.1 An initial site visit was undertaken at 10:30hrs on Thursday 17th October 2013.

2.2 A site survey sketch was completed.

2.3 Site photographs were taken and uploaded onto the network.

2.4 Observations:

a) B181 Lindsey Street is a PR2 road
b) B1393 High Street is a PR1 road that is heavily trafficked with 62 vehicles counted in a 3 minute period.
c) B1393 is also a bus route.
d) War Memorial link road is 3.8m wide and the verge is heavily overrun by vehicles.
e) The War Memorial has a footpath but it does not connect to the existing footway system.
f) The current highway boundary limit is being used to its maximum.

Photographs: Looking north westbound on Lindsey Street link road

Photographs: Looking southeastbound on Lindsey Street link road

Photographs: Looking northeastbound on B1393 High Street

3.0 **Options**

Option 1

3.1 One option put forward for this scheme is shown on the Outline Design drawing referenced DC1810/000/001.

3.2 This option includes changing the existing link road to a 2.5m wide footpath, with the remainder having highway rights removed and being returned to grass.

The Level 1 budget cost estimate can be broken down to general areas as:-

Civil Works (Including RJ fee & overhead)	£18,500
D&C Design and Supervision	£1,500
Removal of highway rights legal process	TBA

3.3 **Option 2**

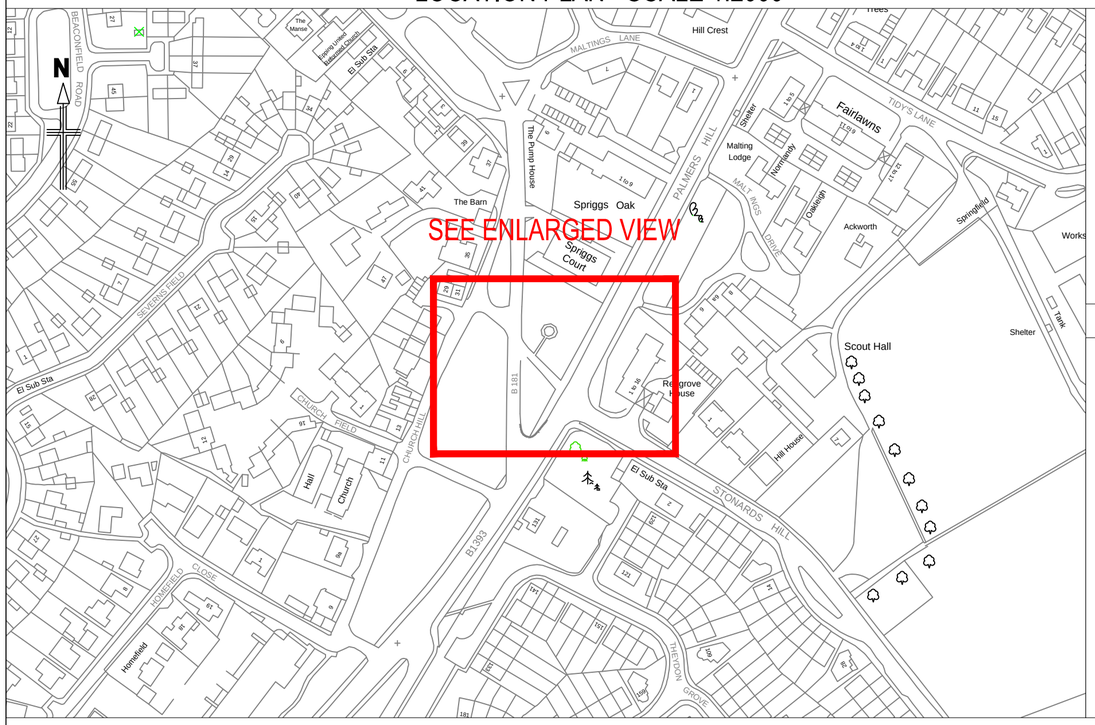
3.4 Another option for this scheme would be to turn the whole existing link road to grass and totally remove highway rights over the area.

3.5	The Level 1 budget cost estimate can be broken down to general areas as:- Civil Works (Including RJ fee & overhead) £23,500 D&C Design and Supervision £1,500 Removal of highway rights legal process TBA
3.6	**Option 3**
3.7	In removing vehicle access along the existing link road, it would seem sensible to alter the alignment of the junction of B181 Lindsey Street with the B1393 High Street to assist larger vehicles making the left turn onto the High Street/Palmers Hill. This option is shown on the Outline Design Drawing referenced DC1810/000/002. This option includes realigning the kerb line and making the carriageway slightly wider. To enable this scheme some of the Epping Conservators grassed area would need adding to the highway and it is envisaged that the agreement for this could be combined with one of Options 1 or 2 above, effectively creating a land part exchange.
3.8	The Level 1 budget cost estimate can be broken down to general areas as:- Civil Works (Including RJ fee & overhead) £13,500 D&C Design and Supervision £1,500 Adoption of land into the highway legal process TBA
3.9	**Option 4**
3.10	Another possibility would be to make the link road across the green one way to vehicles. Potential disadvantages with this idea include: • Four additional signs detracting from the aesthetics of the area • Ongoing enforcement would be required to ensure the one way system is not abused • Overrun of the grass would still likely occur on the entry and exit corners to the link road
4.0	**Recommendations**
4.1	It is recommended to discuss the options that are viable for the improvement of the junction and link road with the LHP and Epping Forest Conservators. By removing vehicle access to the link road (as described in Options 1 & 2), this would have implications on the B181 Lindsey Street/B1393 Palmers Hill junction. Vehicles would be forced to use the B181/B1393 junction which is very tight. Consequently larger vehicles may not be able to manoeuvre the junction without over running the footpath/verge, which would mean that the existing problem on the link road would be moved to the B181/B1393 junction. Therefore, if Option 1 or 2 was introduced then we would recommend that Option 3 be implemented as well to achieve the objective of making the green area more aesthetically pleasing. If Option 3 was to be taken forward then additional land from Epping Forest Conservators would need to be added to the highway because the Highway Boundary limit is currently being used to the maximum. This highway adoption could be processed at the same time as the legal process for the removal of highway rights for the existing link road. A plan for this proposal can be found on the attached drawing DC1810/000/002.

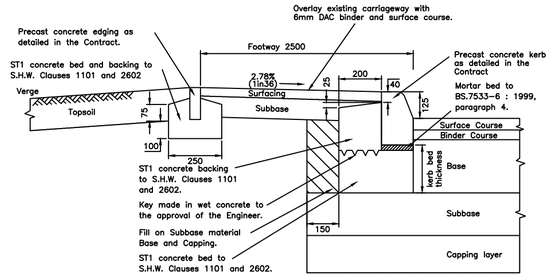
	Another factor to take into consideration is another potential scheme at the junction of the High Street and Station Road where ITS are considering a right turn lane on the main road. This scheme would also require land from Epping Forest Conservators to be made into highway and should be dealt with in conjunction with the land issues associated with this report. There is currently a Casualty Reduction (CR) Scheme looking predominantly at the B1393 Palmers Hill/Stonards Hill junction which has some overlap with this feasibility study. The CR report recommends changing the existing warning sign on Palmers Hill from a 'staggered junction ahead' to a 'crossroads' warning sign but this would not be necessary if the link road was closed to vehicular traffic. The CR Report also recommends rationalising the existing number of traffic signs on the corner of Palmers Hill/link road which also depends upon whether or not the link road is eventually closed. The CR Report also mentions the possibility of making the link road one way (also Option 4 of this report). This option is not recommended due to the disadvantages described in Option 4 above. All the preliminary Level 1 cost estimates above will be subject to change through the target cost process.
5.0	**Summary**
5.1	Whatever decisions are made following this feasibility report must also take into consideration this other scheme DC1806 Palmers Hill/Stonards Hill.
5.2	Before proceeding with any works it is recommended that stats plans are requested and the works are target costed by the Commissioning Team to get a more detailed cost. Also a Safety Audit should be undertaken to identify any safety issues with the proposed scheme.

Prepared by:	Shaun Morgan	Date:	12th February 2014

LOCATION PLAN - SCALE 1:2000



CROSS SECTION A-A - SCALE NTS



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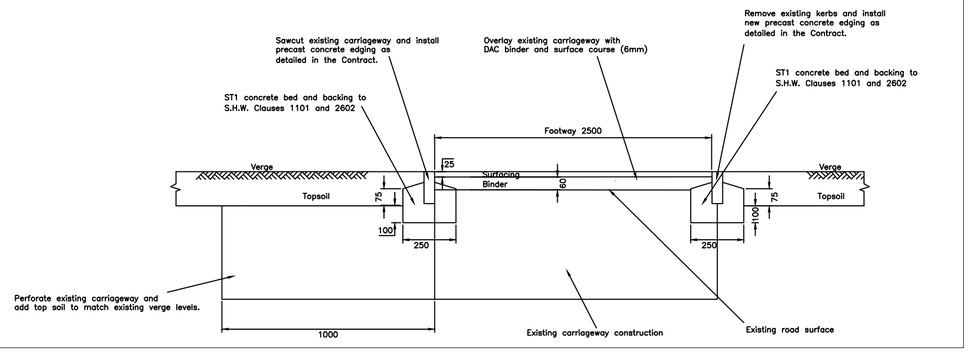
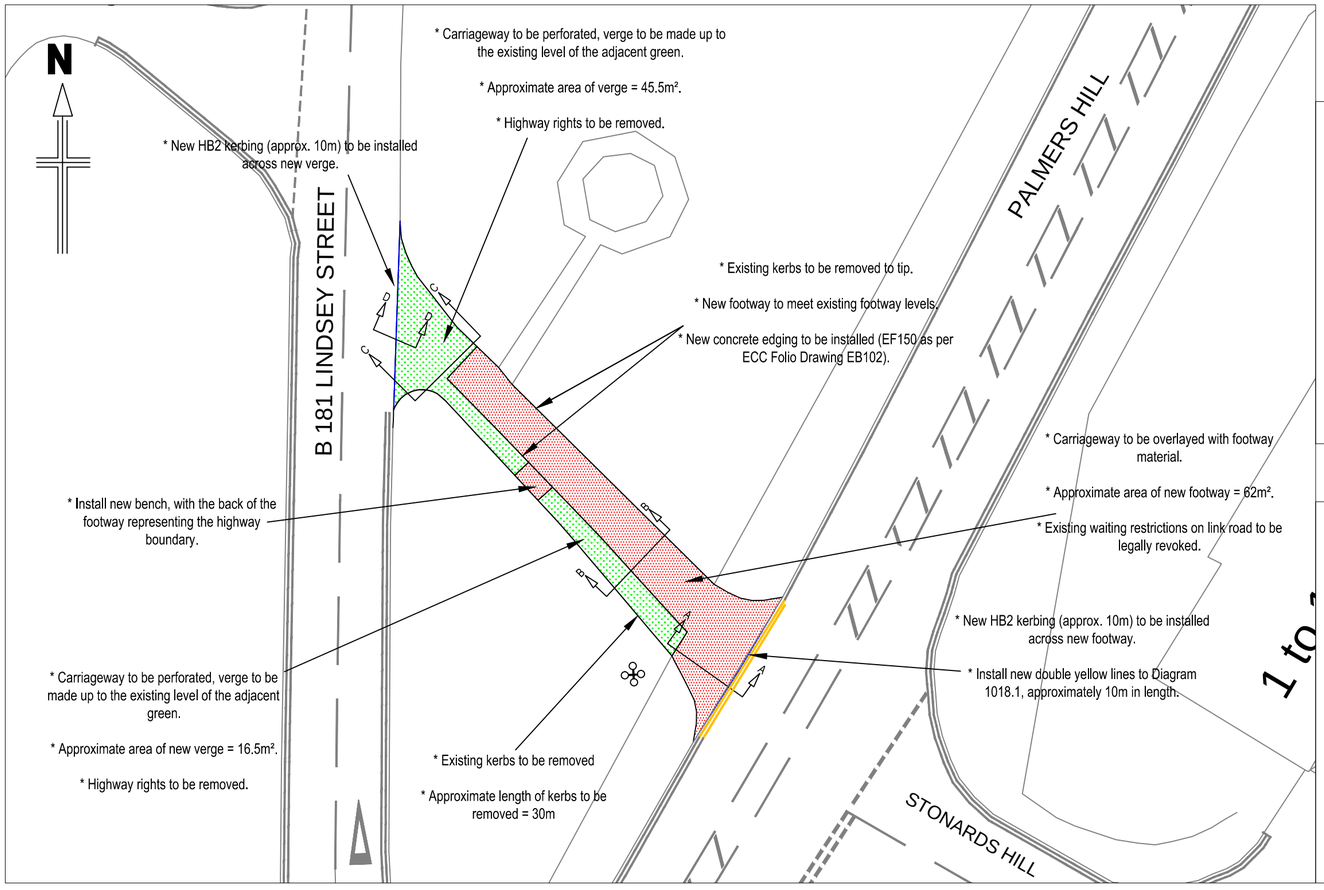
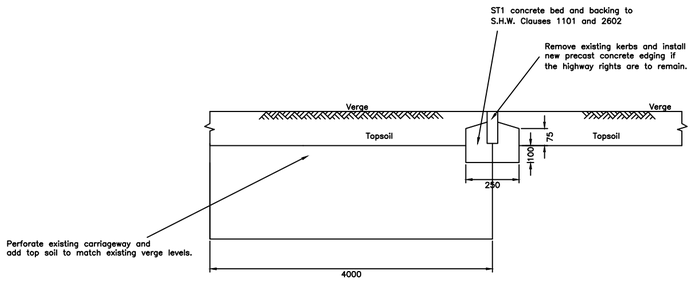


ENLARGED VIEW - SCALE 1:250



CROSS SECTION C-C - SCALE NTS



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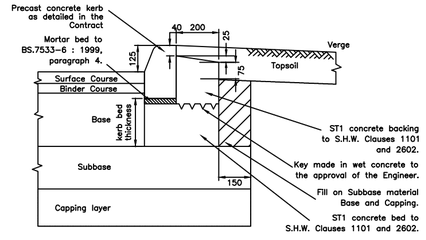


If there are any discrepancies in this drawing they should be referred to the Design & Consultancy Services Group Manager before proceeding.
Only figured dimensions are to be worked to, all dimensions are in metres unless otherwise noted.

Key

- Proposed kerb
- Proposed new footway
- Proposed new lining
- Existing signs
- Existing lining
- Proposed new verge

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED

DRAWING STATUS

FEASIBILITY DESIGN

Essex Highways

Ringway Jacobs working in partnership with Essex County Council

Mark Rowe, Service Director, Essex Highways
County Hall, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

DC1810 LINDSEY STREET, EPPING

DRAWING TITLE

PROPOSED FOOTWAY CONSTRUCTION

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
SM	SM	CN	ML	ML
DATE	DATE	DATE	DATE	DATE
OCT 14	OCT 14	DEC 14	FEB 14	FEB 14

DRAWING UNITS U.N.O.
DIMENSIONS IN MILLIMETRES
LEVELS IN METRES

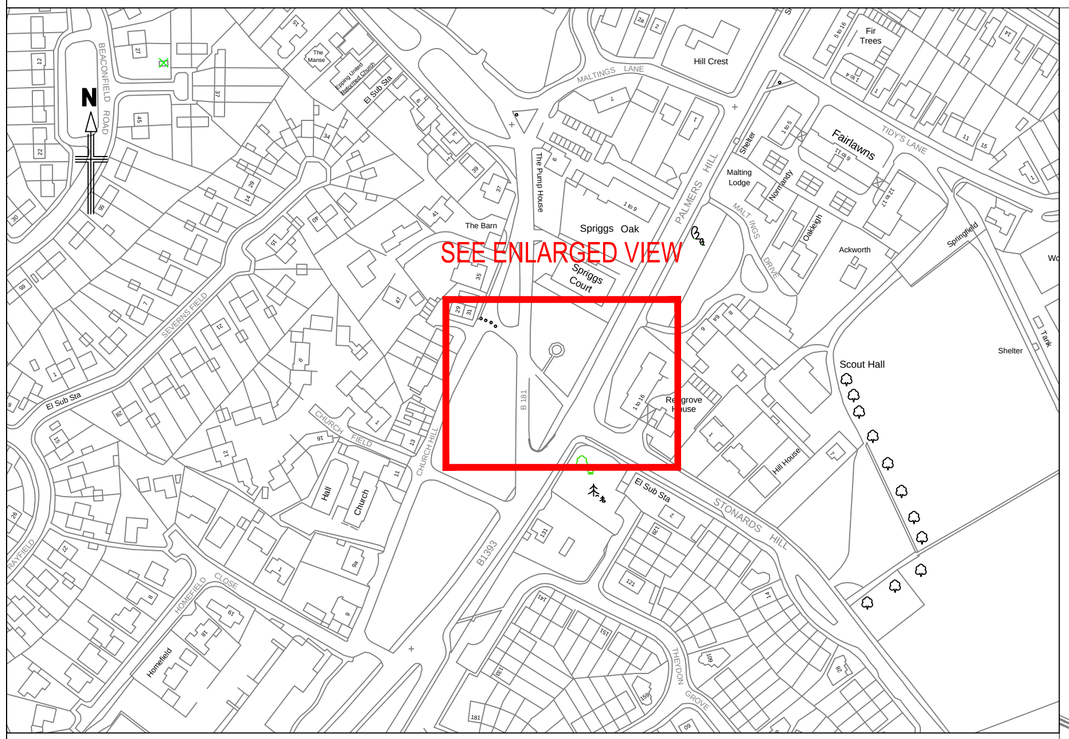
SCALE AT A2 (594x420mm)
AS SHOWN

DRAWING No.
DC1810/000/001

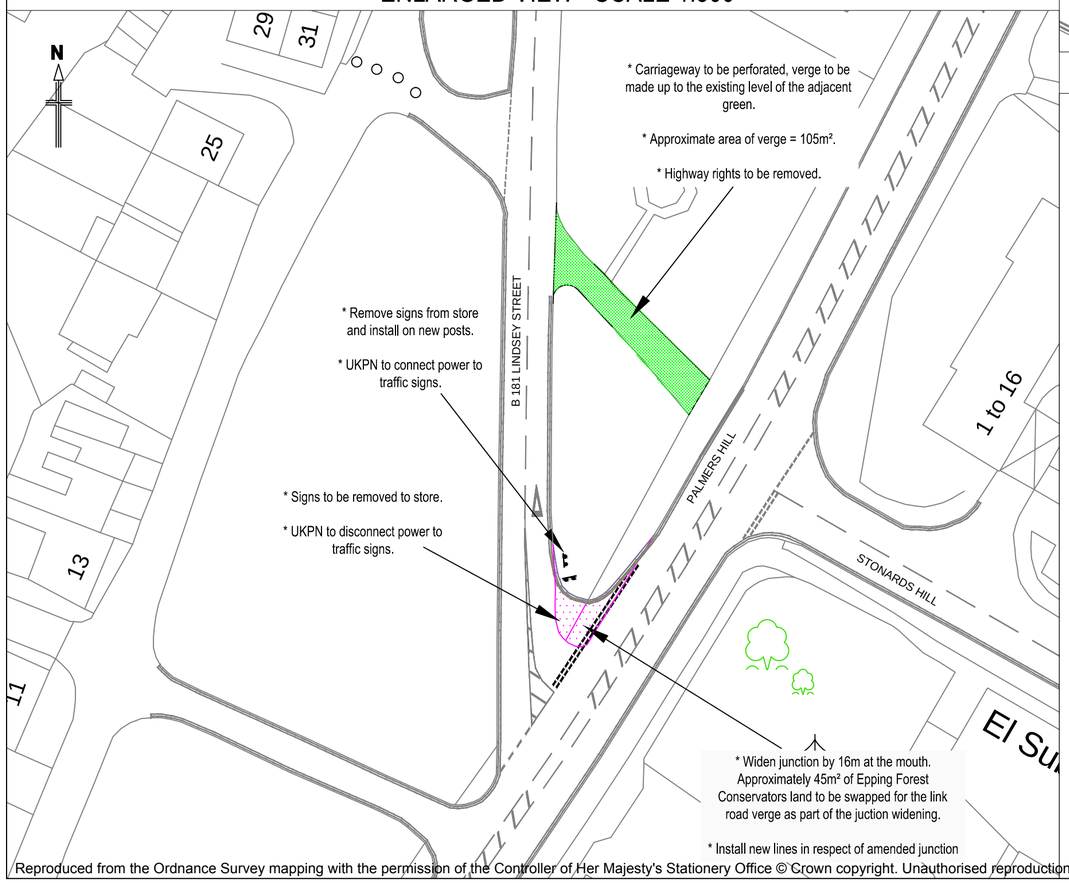
REV.
-

Drawing - X:\Design Consultancy\Capital Programme\DC Scheme Files 2013-14\DC1810 - Lindsey Street, Epping\3 - Drawing Records\DC1810-000-001 recovered.dwg. Layout - A2. Plotted Tuesday 18 February 2014 - 11:46 by shaun.morgan

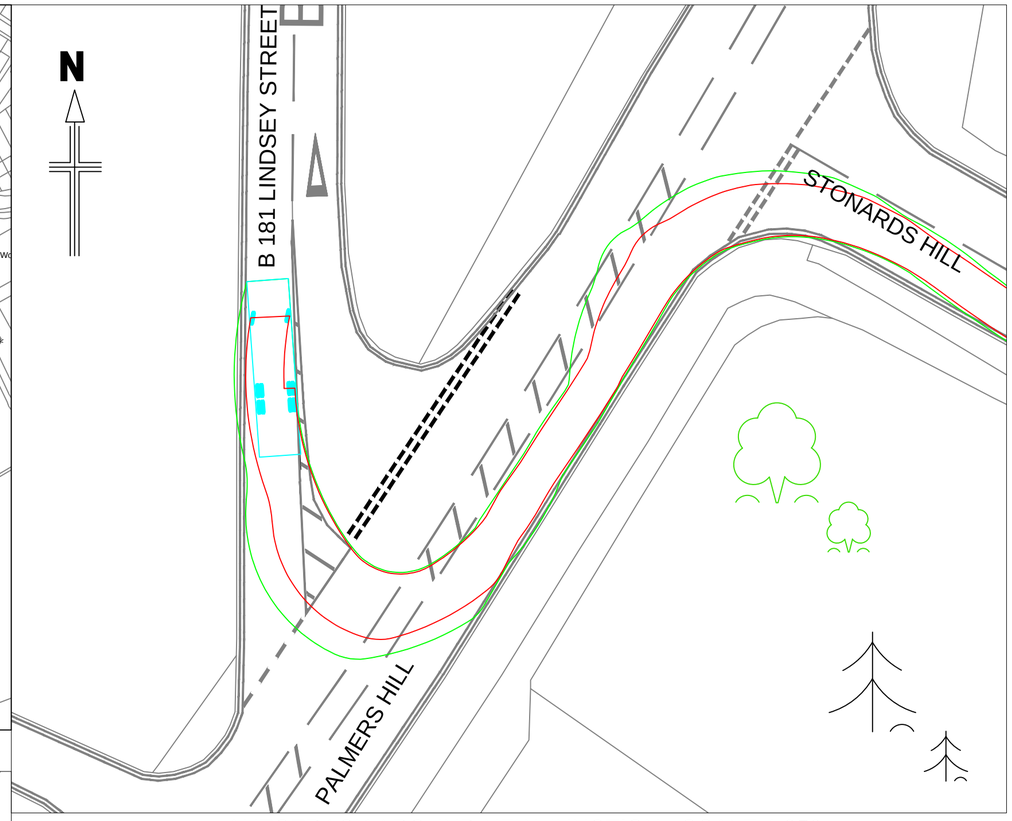
LOCATION PLAN - SCALE 1:2000



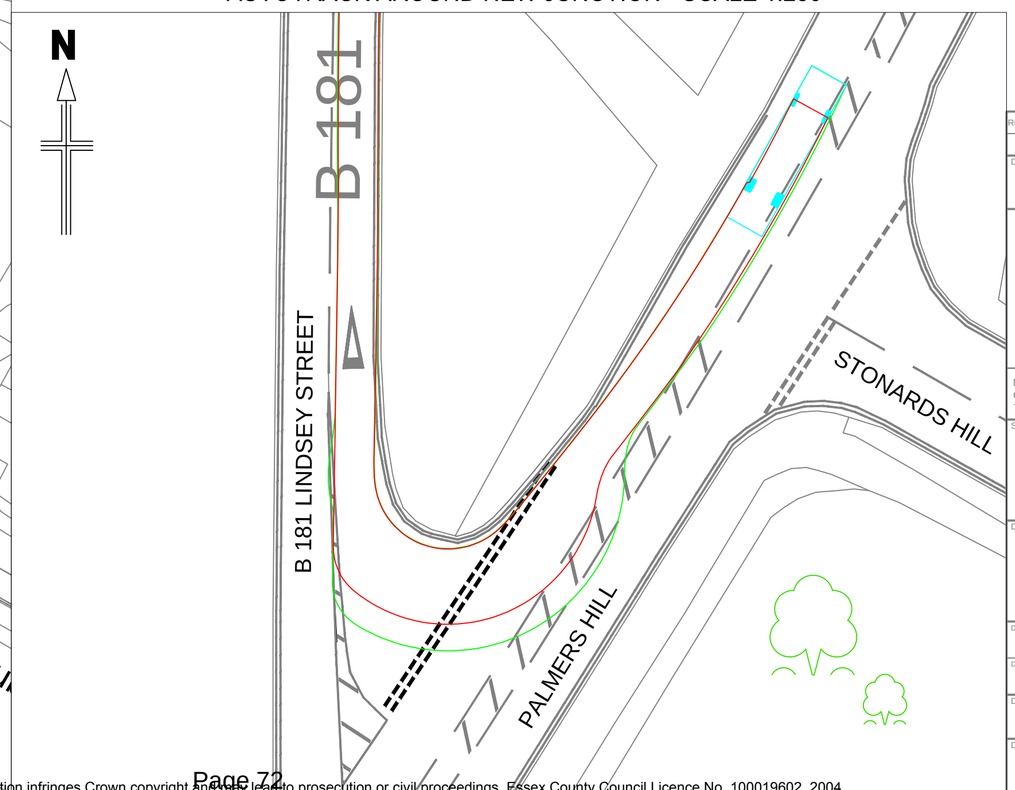
ENLARGED VIEW - SCALE 1:500



AUTOTRACK AROUND NEW JUNCTION - SCALE 1:250



AUTOTRACK AROUND NEW JUNCTION - SCALE 1:250

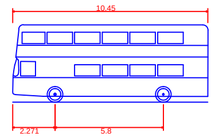


If there are any discrepancies in this drawing they should be referred to the Design & Consultancy Services Group Manager before proceeding.
Only figured dimensions are to be worked to, all dimensions are in metres unless otherwise noted.

Key

- Proposed new kerb line
- Proposed new carriageway construction
- Proposed new double yellow lining
- Proposed new lining
- Existing signs
- Existing lining
- Proposed new verge

Autotrack Information



Trident II - 10.45m 2-Axle

Overall Length	10.450m
Overall Width	2.400m
Overall Body Height	4.140m
Min Body Ground Clearance	0.311m
Track Width	2.363m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	8.958m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED

DRAWING STATUS

DRAWING STATUS

Essex Highways

Ringway Jacobs working in partnership with Essex County Council

Mark Rowe, Service Director, Essex Highways
County Hall, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

DC1810 LINDSEY STREET, EPPING

DRAWING TITLE

PROPOSED FOOTWAY CONSTRUCTION

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
SM	SM	CN	ML	ML
DATE	DATE	DATE	DATE	DATE
OCT 14	OCT 14	DEC 14	FEB 14	FEB 14

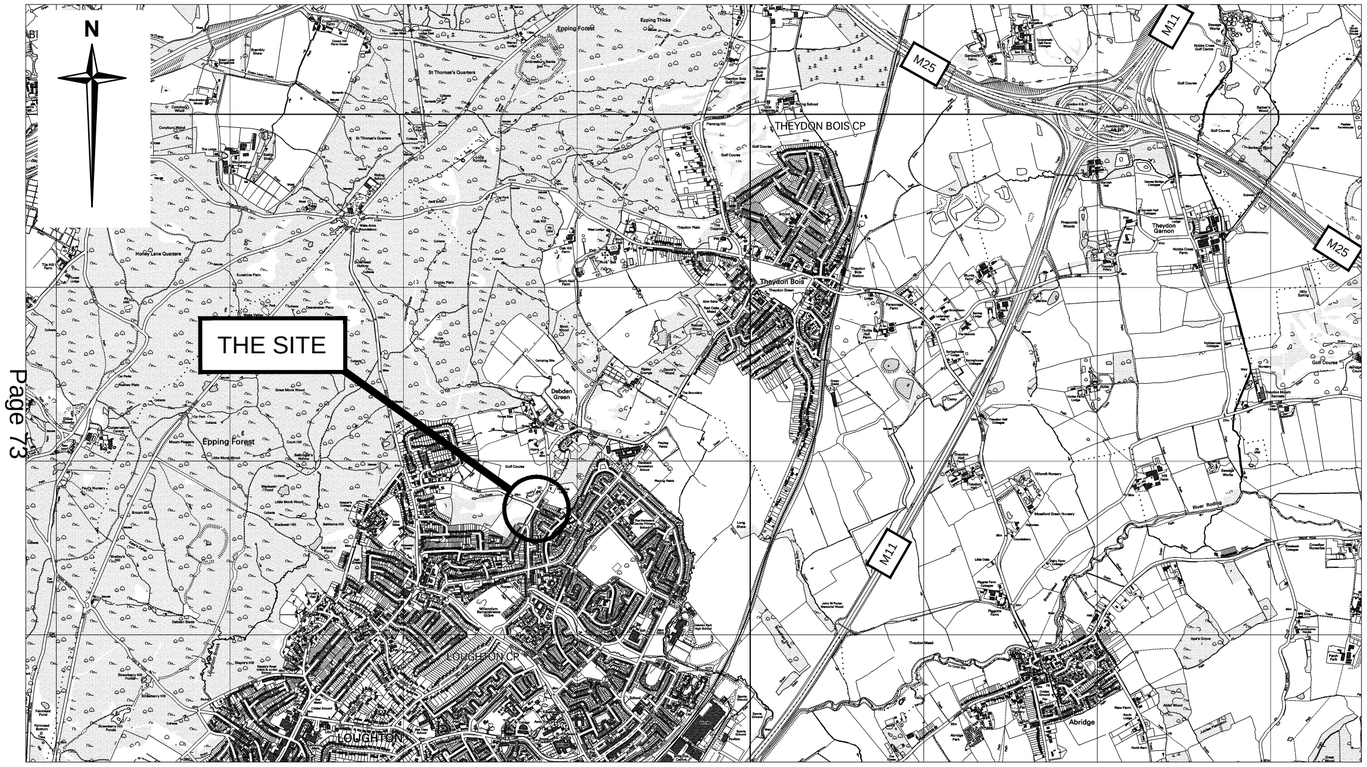
DRAWING UNITS U.N.O.: DIMENSIONS IN MILLIMETRES, LEVELS IN METRES

SCALE AT A2 (594x420mm): AS SHOWN

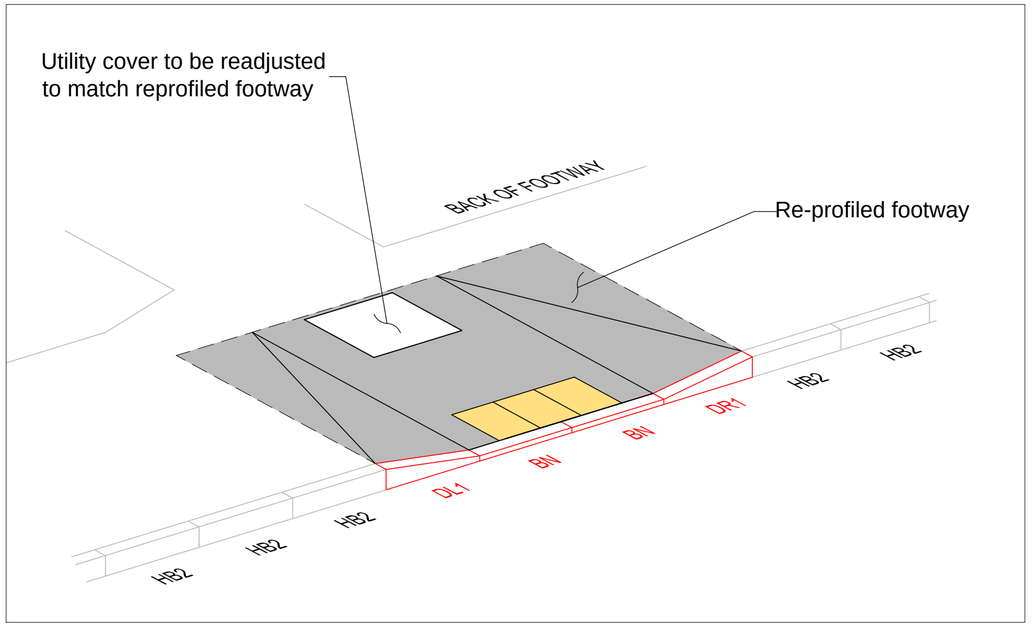
DRAWING No.: DC1810/000/002

REV.: -

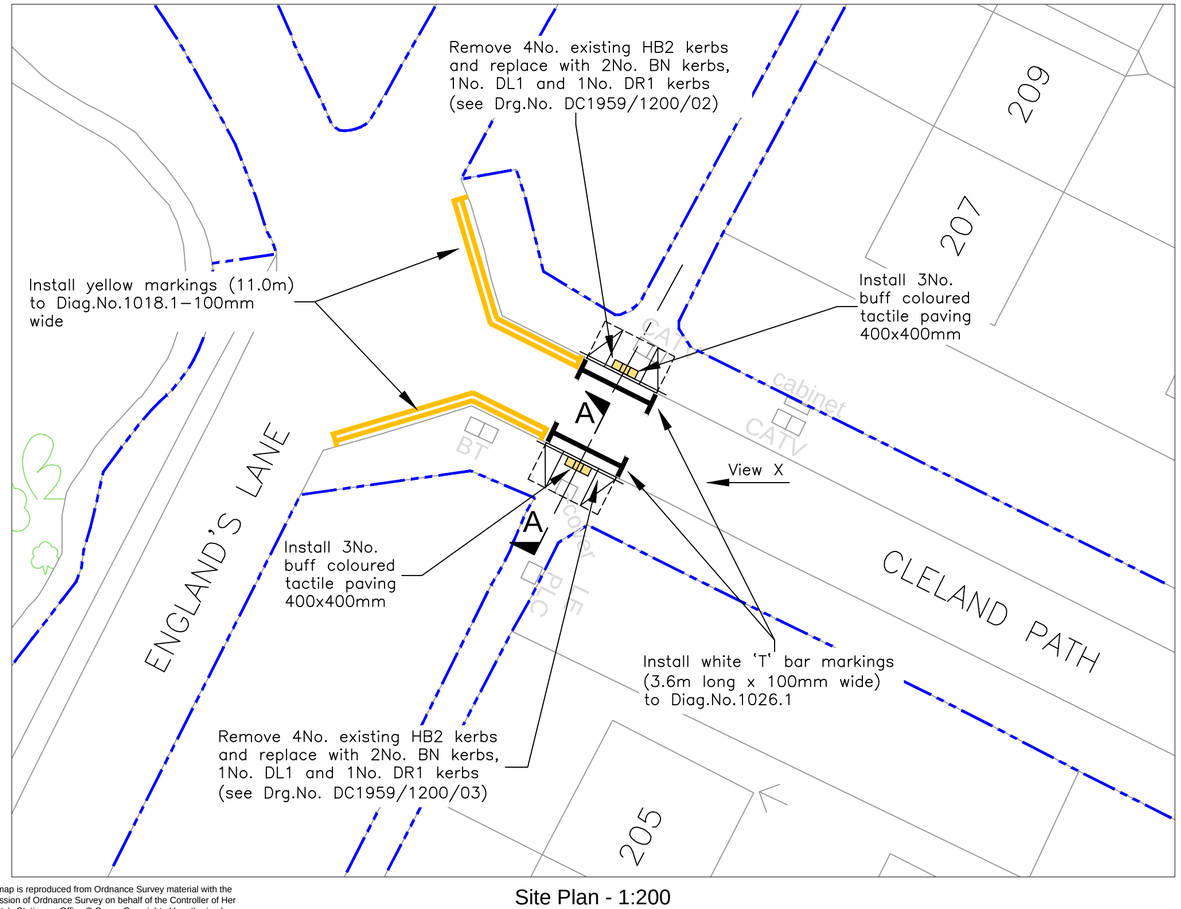
Drawing - X:\Design Consultancy\Capital Programme\DC Scheme Files 2013-14\DC1810 - Lindsey Street, Epping\3 - Drawing Records\DC1810-000-001 recovered.dwg. Layout - A2. Plotted Tuesday 18 February 2014 - 11:47 by shaun.morgan



Location Plan - Not to Scale



View looking from X - Not to Scale



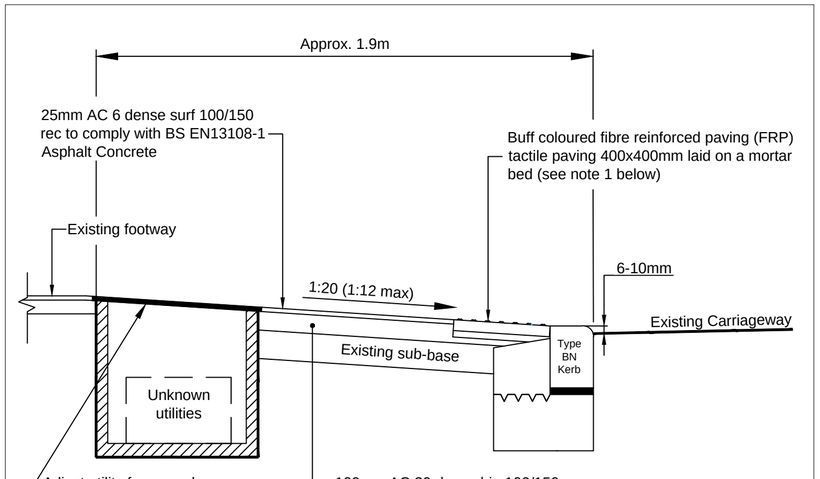
Site Plan - 1:200

Notes.

1. Do not scale. This drawing is to be read in conjunction with all other contract documents.
2. All works to be in accordance with the Department for Transport Specification for Highway Works and Essex County Council Specifications and Standard Construction Drawings.
3. All traffic signs and lines are to comply with The Traffic Signs Regulations and General Directions 2002 (TSRGD 2002).

Key

- Highway Boundary
- Extents of excavation



Paving Notes.

1. Due to the endemic parking of cars on the footways at this location it is considered that fibre reinforced tactile paving (FRP) be used to reduce future maintenance liabilities, minimise broken, twisted or uneven slabs and maintain the aesthetics of the crossing for a longer period.
   NB Fibre reinforced tactile paving likely not to be a stock item and will have a longer delivery time.
2. Refer to Essex County Council Folio Drawings EB105 (kerb details) and EB121 (tactile paving details.

Section A-A - Not to Scale
(north side similar)

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED

DRAWING STATUS

PRELIMINARY

Essex Highways

Ringway Jacobs working in partnership with Essex County Council

Mark Rowe, Service Director, Essex Highways
County Hall, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

CLELAND PATH FOOTWAY IMPROVEMENTS

DRAWING TITLE

UNCONTROLLED PEDESTRIAN CROSSING POINT

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
TS	TS			
DATE	DATE	DATE	DATE	DATE
MAR 14	MAR 14			

CHECK PRINT

DRAWING UNITS U.N.O.	SCALE AT A2 (594x420mm)
DIMENSIONS IN MILLIMETRES LEVELS IN METRES	AS SHOWN

DRAWING No.	REV.
DC1959/1200/01	**0**

DC1813 Middle Street FP59, Bumbles Green

1.0 **Brief**

Essex Highways have been asked to investigate the possibility of constructing a walkable verge from the existing footway in Middle Street to FP59.

Since the creation of FP59 last year, some walkers have expressed concerns regarding the difficulties reaching the footpath. Currently, those wishing to use FP59 have to either walk on the verge or on the road. Whilst the verge might not be an issue during the summer months, verges in the winter months can become slippery and difficult to negotiate.
The other alternative for walkers is the road which could be considered a road safety issue, especially being located close to a bend.

2.0 **Site Location**

The site in question is Middle Street from the end of the existing footway up to Footpath 59, Bumble Green, Nazeing.

Middle Street is a single carriageway street lit road, subject to the national speed limit of 30mph.

It is classed as a residential road which runs from its junction with Waltham Road and Nazeing Common, through to where it becomes Nazeing Road.

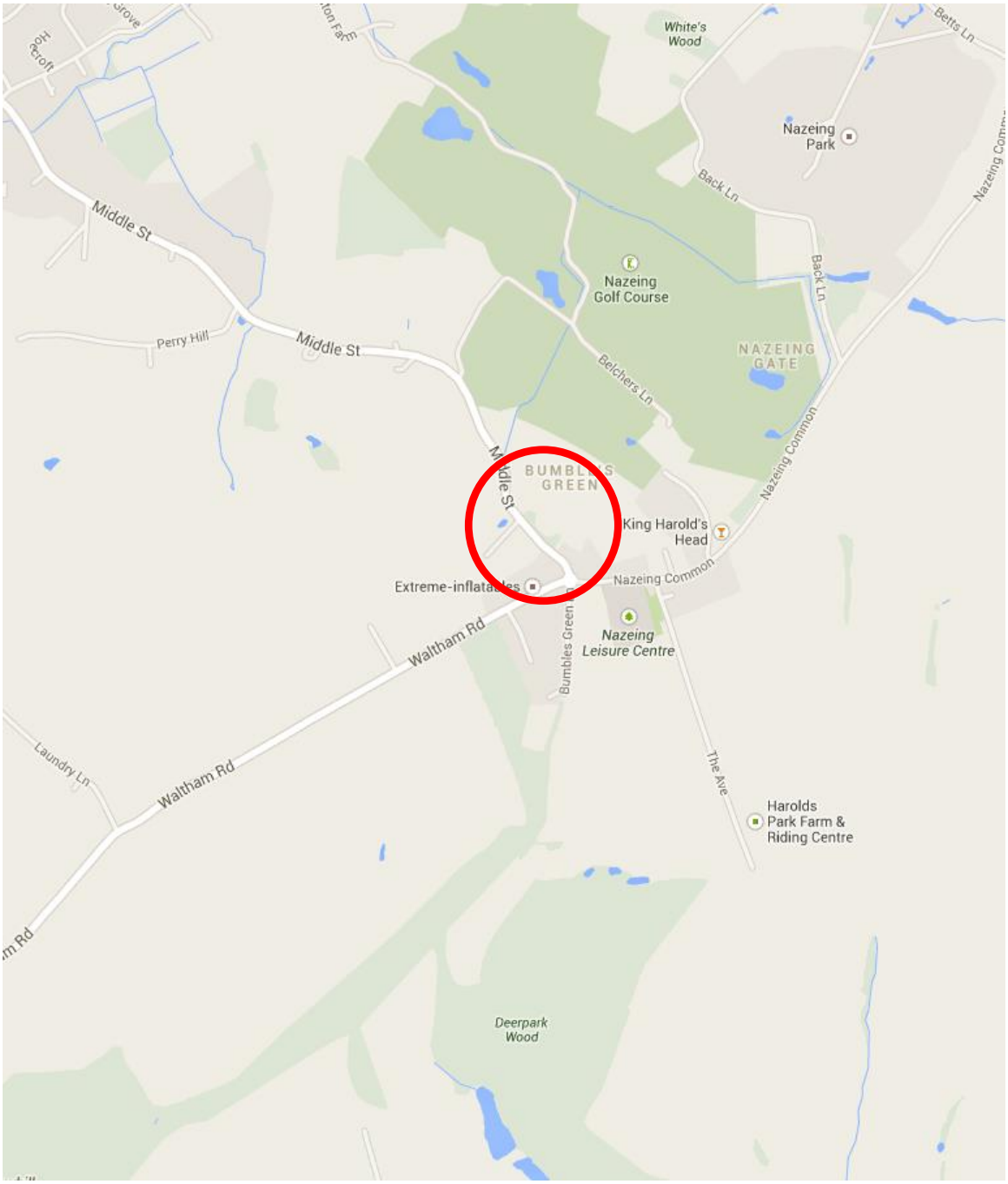
Whilst Middle Street is not classed as a strategic route it is often used as a cut through from Lower Nazeing to Bumbles Green and as such does attract greater volumes of traffic than other residential roads.

Ariel view

Southern approach

Northern approach

Location Plan



5.0 **Personal Injury Collision**

A study of the Personal Injury Collision (PIC) data for the period from 01/01/2009 and 31/12/2013 at this location shows no real pattern of accidents involving pedestrians.

The data shows there is 1 serious PIC at this location involving 2 vehicles, resulting in 1 serious casualty and one slight casualty.

The PIC occurred in 'Wet/Damp' conditions and occurred during daylight hours. It was thought that slippery conditions was the main cause.

6.0 **Site Observations**

It should be noted that there is a roadside ditch on the south western side of the road. This should be borne in mind when considering any new lengths of footway on that side.

Street furniture

No street furniture present at this location.

Pavements/Drainage

- The carriageway appears to be in good condition with no evidence of utility scarring.
- There is currently no kerbed channel either side of the carriageway, therefore surface water will naturally drain onto verge. If kerbs are to be installed, additional drainage should be considered.

Lining

- It was observed that existing road markings are also in reasonable condition and meet the visual assessment criteria as prescribed in Volume 8 section - TD 26/07 of the DMRB

Signage

- Existing signage is minimal. Relocation of existing signage is to be included as part of the proposals, where appropriate.

Other observations

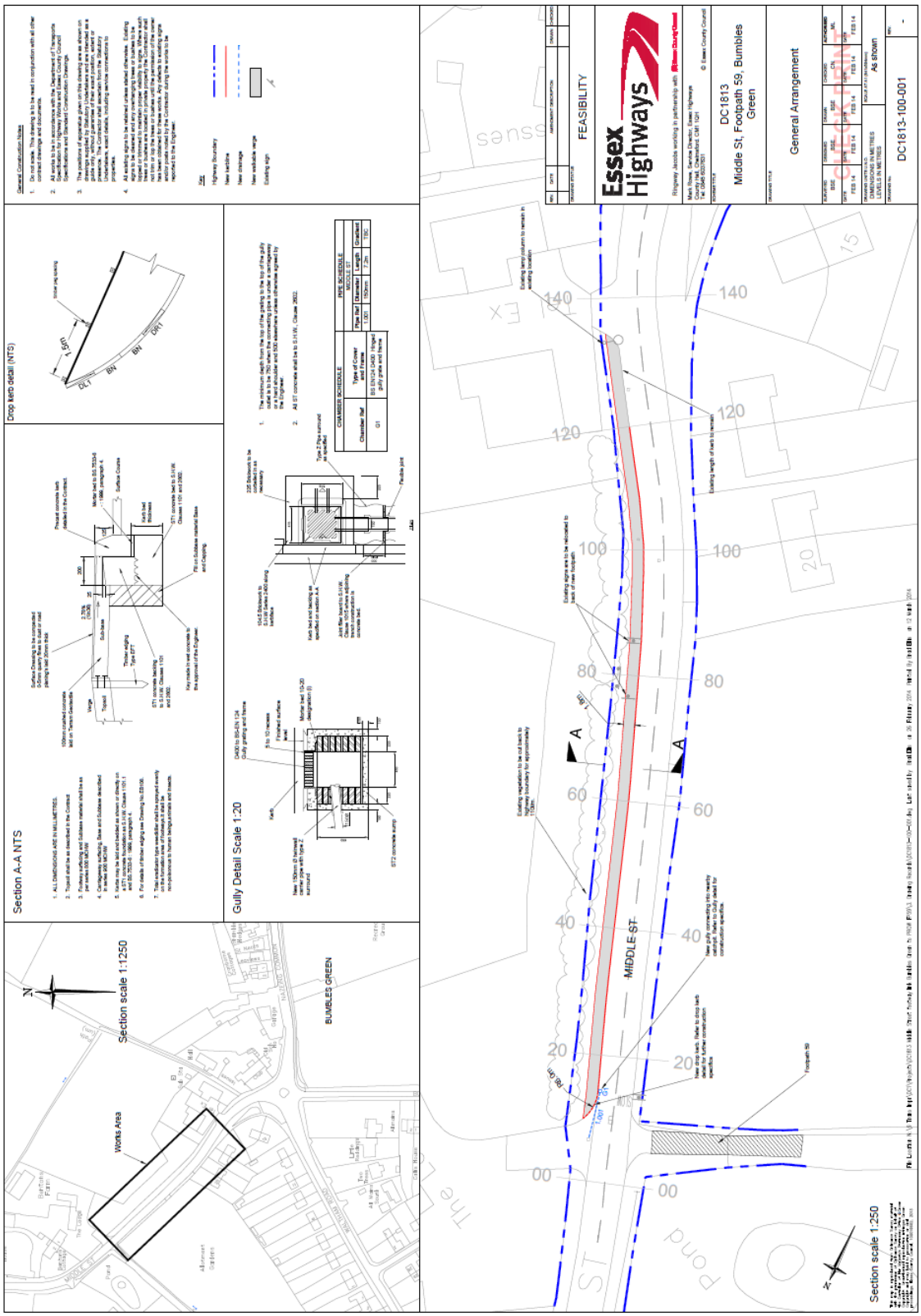
- A badly damaged area of verge on the eastern side of the carriageway, mid way between

	the proposed site extents suggests that overrun is an issue and could be down to vehicle parking.
7.0	**Recommendations** Following a study of the site a plan showing the proposed new section of walkable verge has been prepared. 1. Refer to appendix A (DC1813/100/001) for proposed general arrangement. It is recommended that a full height kerb be installed for the length of walkable verge to minimise the risk of vehicle parking and to help retain the granular material used for construction. A dropped kerb will need to be provided at the northern end of the length of walkable verge. The new kerbline will tie into the existing length of kerbline at the southern end, which already includes provision of a drop kerb. It is suggested that an additional gully be installed by the existing vehicle access to 'The Lodge' as the removal of natural drainage could result in ponding at the lower areas. Some siding back of vegetation will be required in order to accommodate the proposed walkable verge. Where such vegetation is located on private property the Contractor shall not carryout any further work until the permission of the owner has been obtained. *Notes* The utility plans indicate that existing underground equipment shouldn't affect the proposals. Trial holes should still be carried out to determine the location and depths of any such equipment. 1. Refer to Appendix B for utility plans.
8.0	**Economic Analysis** The estimates for the proposed works have been worked out using 2011/12 rates with a presumed uplift of 3.71%. These estimates are only for guidance and may change under the new Ringway Jacobs contract. • Civils – £12,330.15 • Design & supervision – £1,500.00 • Total – £13,830.15.

FEASIBILITY REPORT – DC1813

Prepared by:	Brad Ellis	Date:	24th Feb 2014

Appendix A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Section A-A NTS
Gully Detail Scale 1:20
Section scale 1:1250
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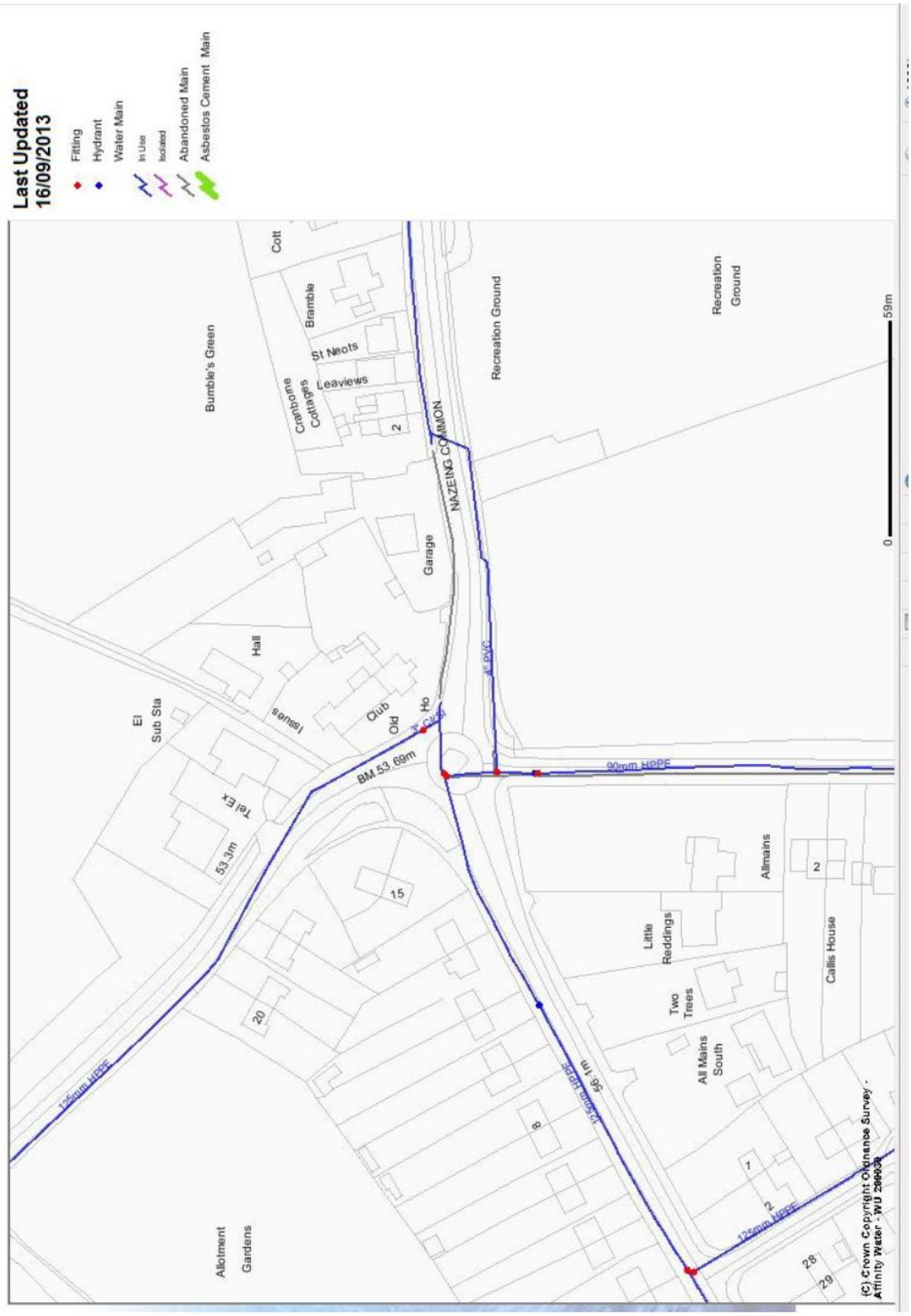
FEASIBILITY
Essex Highways
DC1813
Middle St, Footpath 59, Bumbles Green
General Arrangement
DC1813-100-001
As shown
MIDDLE ST
Section scale 1:250

Appendix B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16/09/2013
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In Use
Isolated
Abandoned Main
Asbestos Cement Main
Bumble's Green
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Leaviews
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Allmains
Little Reddings
Two Trees
All Mains South
Callis House
Allotment Gardens
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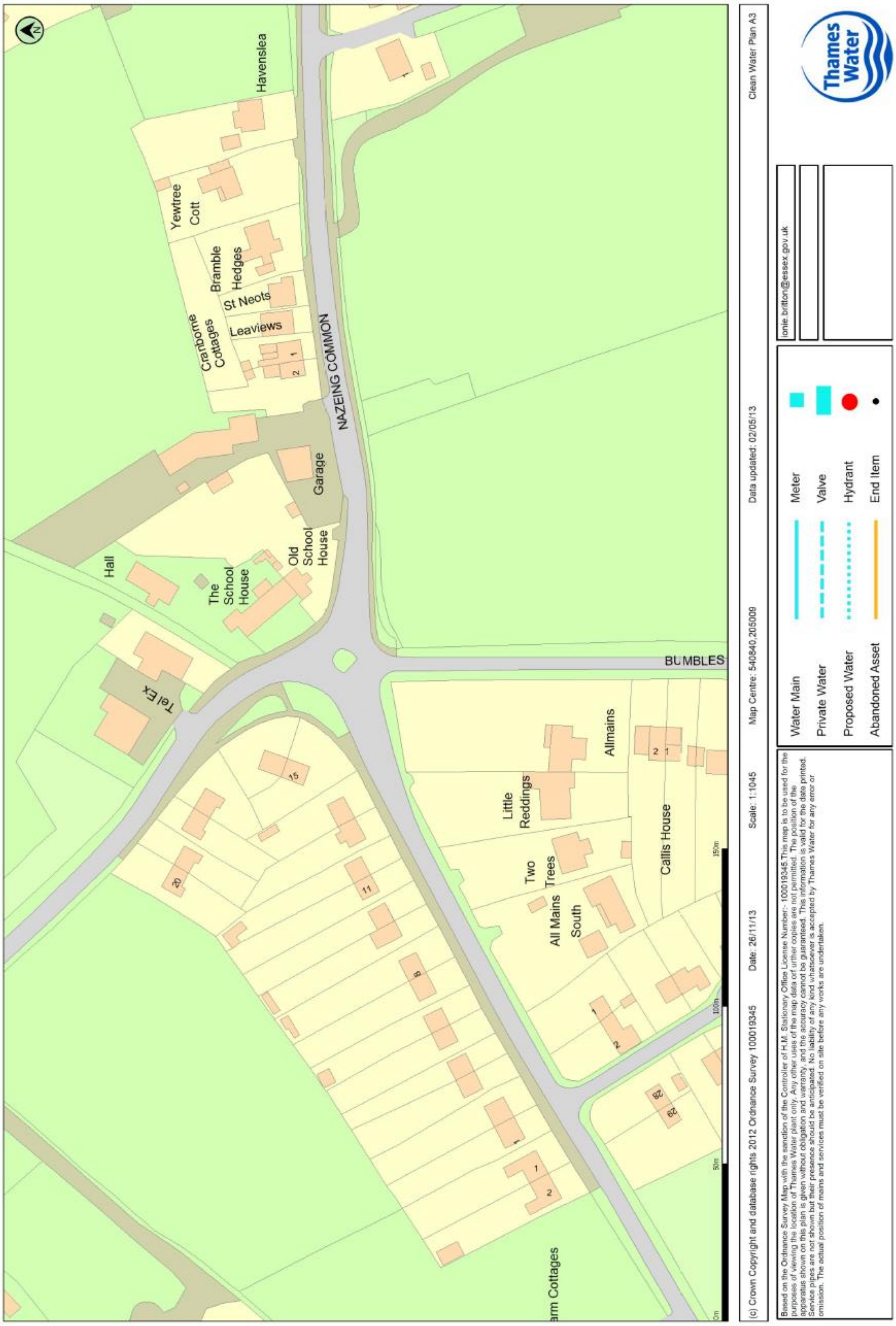
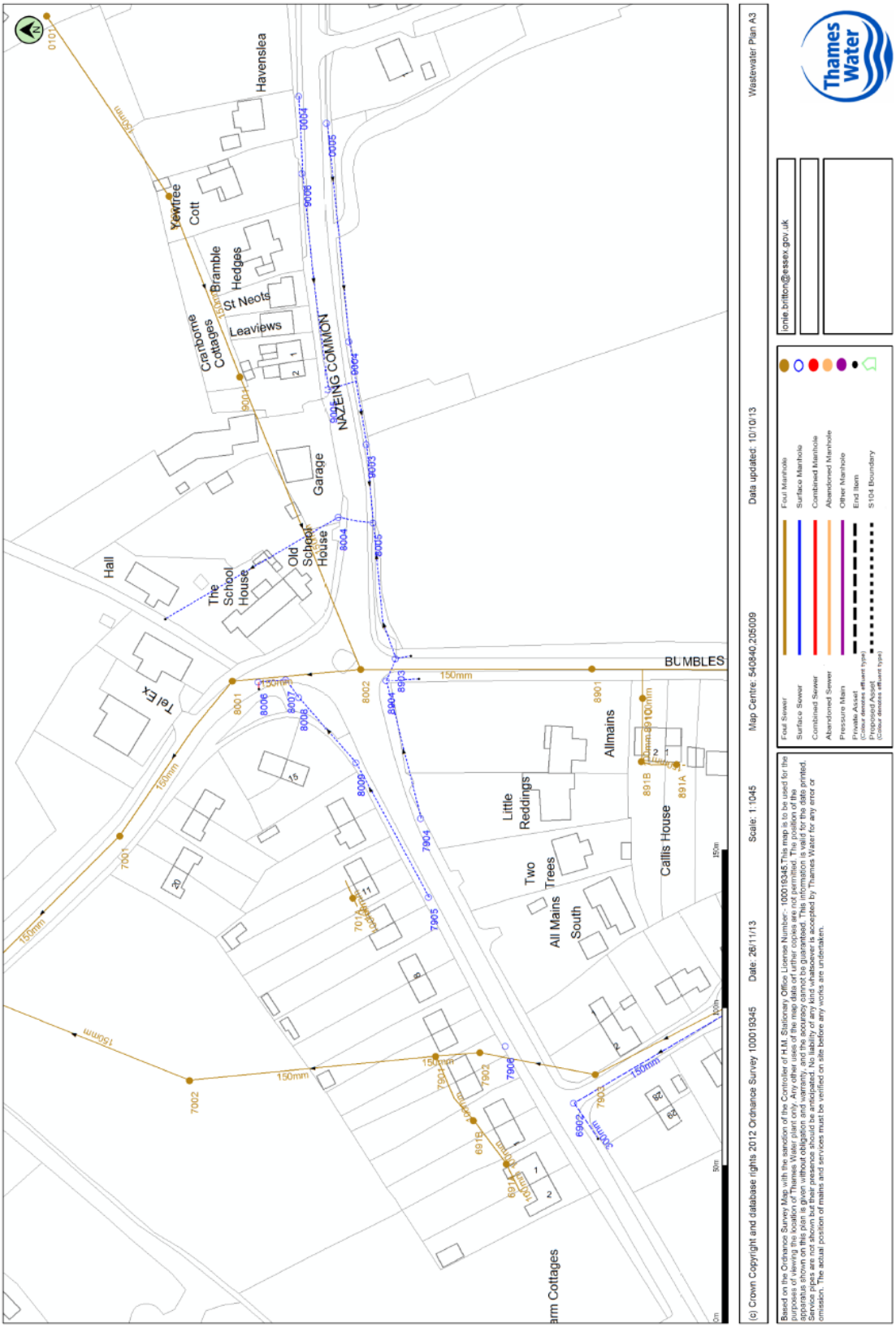
FEASIBILITY REPORT – DC1813

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Yewtree Cott
Bramble Hedges
St Neots
Leaviews
Cranborne Cottages
NAZEING COMMON
Garage
Old School House
The School House
Hall
Tel Ex
BUMBLES
Allmains
Little Reddings
Two Trees
All Mains South
Callis House
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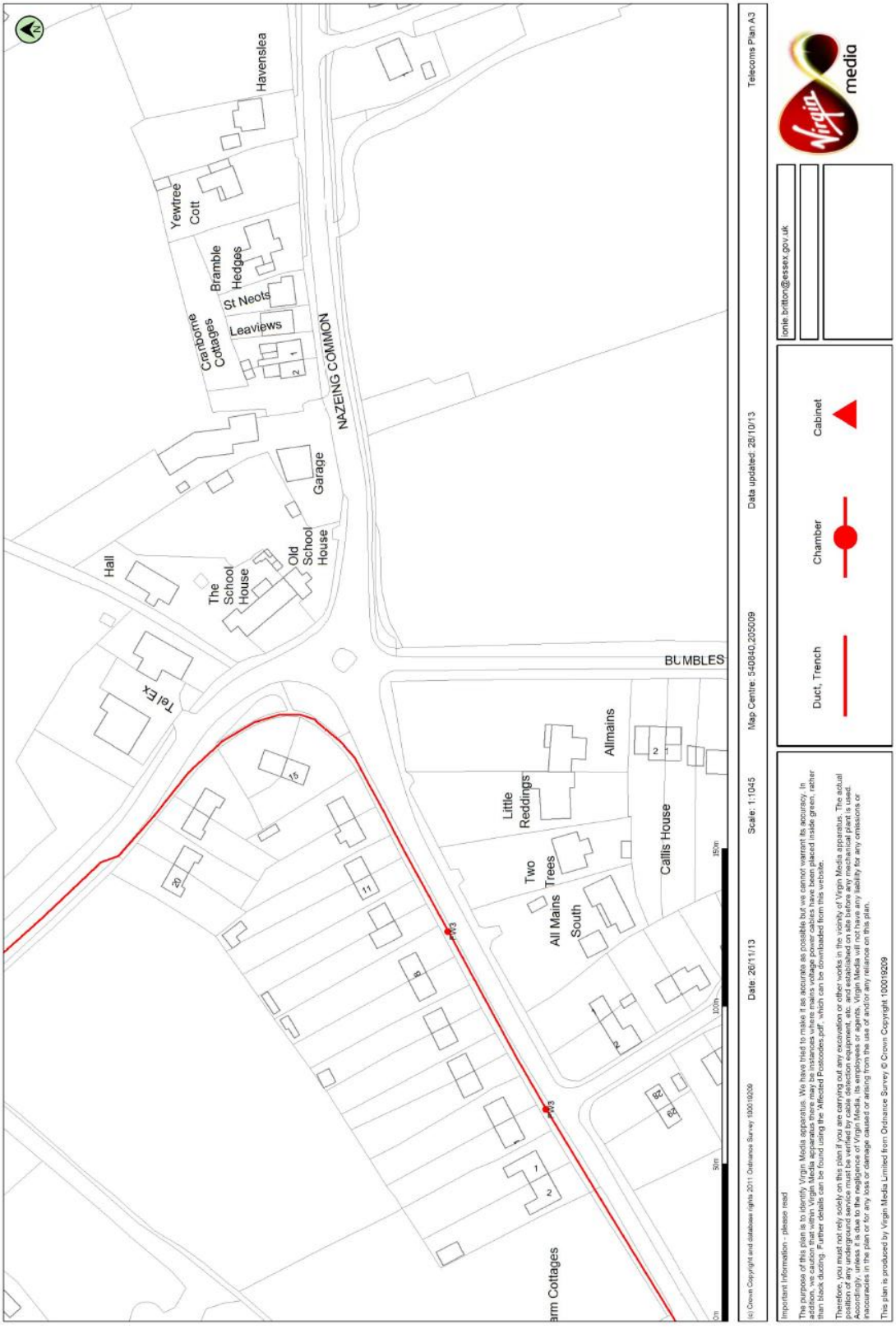
Wastewater Plan A3
Data updated: 10/10/13
Map Centre: 540840 206009
Scale: 1:1045
Date: 26/11/13
(c) Crown Copyright and database rights 2012 Ordnance Survey 100019345
Foul Sewer
Surface Sewer
Combined Sewer
Abandoned Sewer
Pressure Main
Private Asset
Foul Manhole
Surface Manhole
Combined Manhole
Abandoned Manhole
Other Manhole
End Item
S104 Boundary
ionie.britton@essex.gov.uk
Thames Water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Two Trees
All Mains South
Callis House
Telecoms Plan A3
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Map Centre: 540640,205009
Scale: 1:1045
Date: 26/11/13
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Duct, Trench
Chamber
Cabinet
sonie.britton@essex.gov.uk
media
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The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the 'Affected Postcodes.pdf', which can be downloaded from this website.
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KEY TO BT SYMBOLS

UNDERGROUND PLANT	POLE
OVERHEAD PLANT	CABINET
JOINT BOX	BURIED JOINT
DISTRIBUTION POINT	JOINTING POST
MANHOLE	PROPOSED U/G
DP BOUNDARY	PROPOSED O/H
OTHER BT BOUNDARY	PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

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Map Reference : (centre) TL4084005009
Easting/Northing : (centre) 540840,205009
Issued : 26/11/2013 14:19:26

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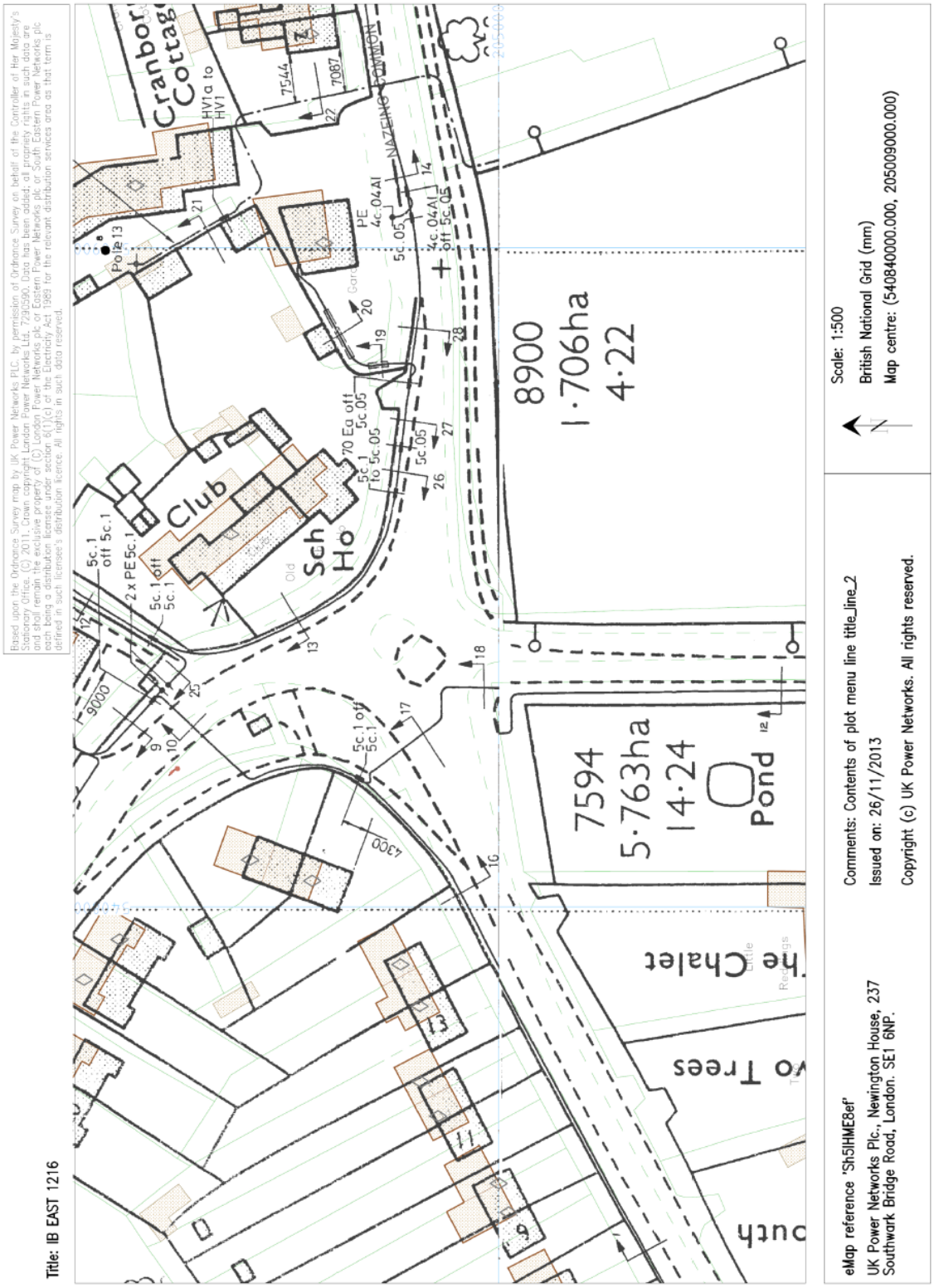
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Cranbor Cottag
HV1a to HV1
Pole 13
7544
7087
NAZEING COMMON
PE 4c.04Al 5c.05
4c.04Al off 5c.05
70 Eq off 5c.05
5c.1 to 5c.05
5c.05
2 x PE 5c.1
5c.1 off 5c.1
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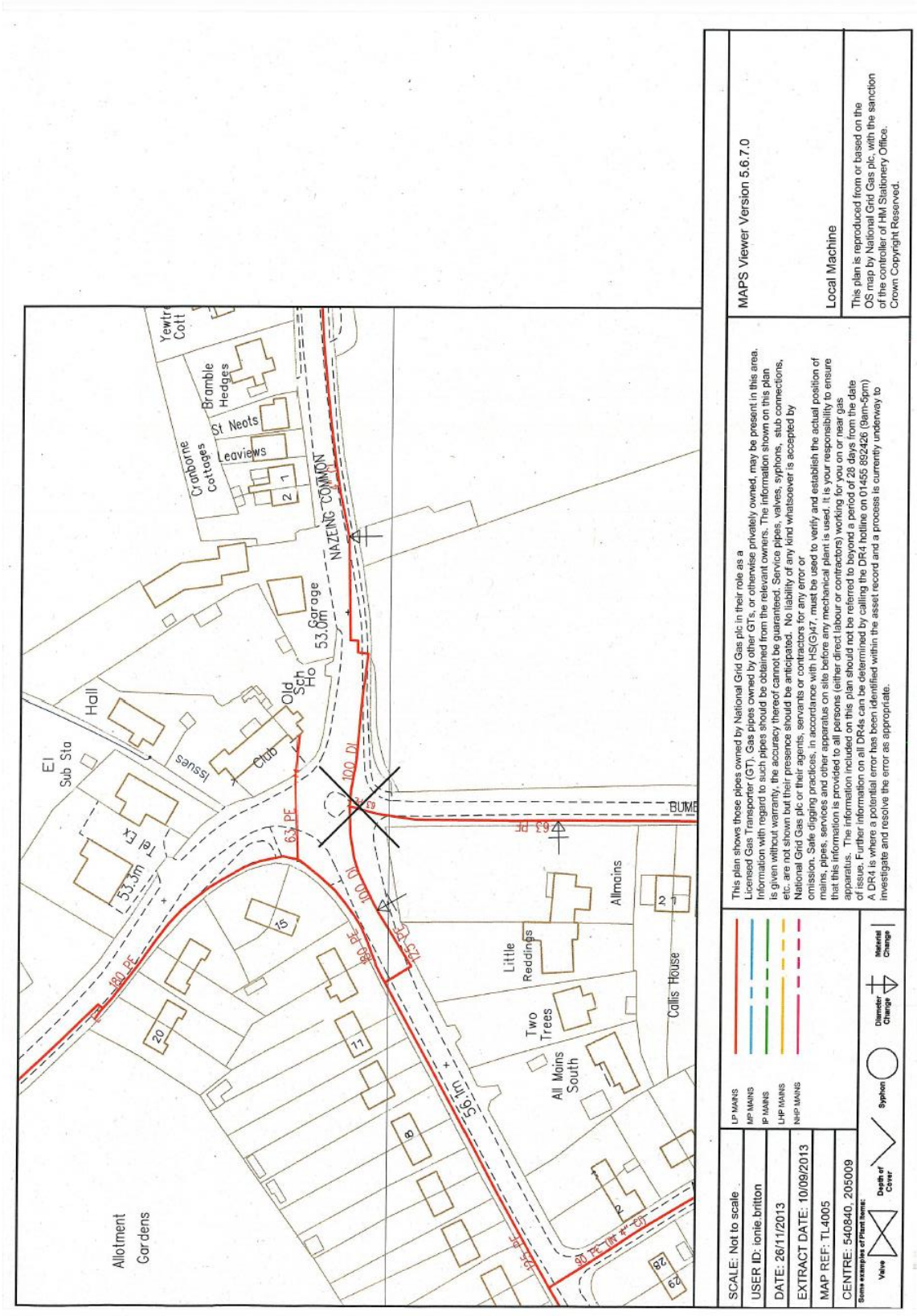
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Allmains
Little Reddings
Two Trees
All Mains South
Collis House
55.1m
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DATE: 26/11/2013
EXTRACT DATE: 10/09/2013
MAP REF: TL4005
CENTRE: 540840, 205009
LP MAINS
MP MAINS
IP MAINS
LHP MAINS
NHP MAINS
Some examples of Plant Items:
Valve
Depth of Cover
Syphon
Diameter Change
Material Change
This plan shows those pipes owned by National Grid Gas plc in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue. Further information on all DR4s can be determined by calling the DR4 hotline on 01455 892426 (9am-5pm) A DR4 is where a potential error has been identified within the asset record and a process is currently underway to investigate and resolve the error as appropriate.
MAPS Viewer Version 5.6.7.0
Local Machine
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A121 Meridian Way/B194 Highbridge St, Waltham Abbey

Junction Improvement Study

March 2014

Document Control Sheet

Document prepared by:

Tony Fitch Senior ITS Engineer	Essex Highways County Hall, E3 Chelmsford Essex. CM11QH	**T** **E** **W**	01245 342790 tony.fitch@essexhighways.org www.essex.gov.uk/highways

Report Title	A121 Meridian Way/Highbridge St Junction Improvement Study
Project Number	ITS0035
Status	Final
Revision	-
Control Date	21/3/14

Record of Issue

Issue	Status	Author	Date	Check	Date	Authorised	Date
1	Draft	ADF	19/2/14	SMR	3/3/14	-	-
2	Final	ADF	21/3/14	SMR	28/3/14	31/3/14	LS

Distribution

Organisation	Contact	Number of Copies
Essex County Council	Jon Simmons	1
Essex Highways	Gary Webster	1

Contents

Tables

Figures

Executive Summary

This feasibility study investigates if recommendations made in a Casualty Reduction (CR) report following a high incidence of collisions at the junction can be carried forward to the implementation stage.

The collision pattern identified indicates that vehicles entering the junction from Meridian Way are in conflict with vehicles which have right of way from Station Road and may indicate a combination of incorrect lane choice and misinterpretation of the signals. The current signal arrangement is a result of improvements made to the junction in 2009 to address safety and efficiency concerns highlighted in a previous CR investigation undertaken in 2008.

The study identifies a number of possible options for amendment to the signals on the Meridian Way approach and evaluates which of these options are likely to provide the greatest benefit with regard to enhanced safety and minimal impact on congestion.

The measure believed to give the most benefit in addressing the findings of the CR report is to provide a filter green arrow signal for the Meridian Way approach, which would return to the signalling method previously in place before the 2009 improvement scheme. This measure, if implemented alongside remedial measures to signing and white line markings recommended in the CR report, would help to enhance drivers' understanding of the junction and aid correct lane choice and compliance with the signals.

A cost estimate for the recommended measures is included in Section 4 of this study.

In addition two further junction improvement measures have been assessed following feedback from the Local Highways Panel. These measures are the improvement of facilities for right turners from Highbridge Street to Beaulieu Drive and investigation into linking the signals with Hertfordshire CC's adjacent signals on Station Road to reduce congestion. Cost estimates for these measures is also included in Section 4.

Introduction

Essex Highways has been commissioned by the Local Highways Panel for Epping Forest District to investigate improvements to the existing traffic signal controlled junction at A121 Meridian Way/B194 Highbridge Street/A121 Station Road/Beaulieu Drive in Waltham Abbey.

A 2013/14 Casualty Reduction (CR) Site Investigation Report identified a pattern of vehicle collisions at the junction and has recommended a number of remedial measures, including further investigation of the signal layout and operation to address this problem.

This report investigates possible measures to mitigate the occurrence of collisions, including modifications to the signal operation and implementation of other recommended actions in the CR Report.

1. Scheme Background

1.1 Site description

The site is a 4-arm traffic signal controlled junction between A121 Meridian Way, B194 Highbridge Street, A121 Station Road and Beaulieu Drive in Waltham Abbey.

A121 Meridian Way forms part of a southern bypass route to Waltham Abbey town centre and links to M25 Junction 26 to the east. A121 Station Road and B194 Highbridge Street provide an east/west link between Waltham Abbey town centre and Waltham Cross to the west. Beaulieu Drive is a predominantly residential access road and also provides access to the Royal Gunpowder Mills tourist attraction.

All junction approaches are subject to a 40mph speed limit.

Figure 1: Aerial photograph of the junction. A121 Meridian Way approach is in the foreground

In peak periods the heaviest traffic movements are the east-west and west-east movements between A121 Station Road and B194 Highbridge Street and turning movements in both directions between A121 Station Road and A121 Meridian Way.

The junction is also impacted by traffic movements associated with a small retail area and fast food drive-in restaurant located on the southwest corner with vehicle access from A121 Meridian Way approximately 30m from the traffic signal stop line.

The traffic signals operate under the 'MOVA' real-time adaptive control system which allows the signal timings to respond to real-time changes in traffic flow. MOVA is widely regarded as the industry-standard signal control method to best maximise traffic flow and manage delays at isolated junctions.

1.2 Site modification history

Traffic signals were installed at the junction in 1999 as part of the construction of A121 Meridian Way. The current signal layout and operation dates from 2009 when the junction was modified under a previous Casualty Reduction scheme.

The specific safety problem identified was a high incidence of collisions involving vehicles turning right from Station Road to Meridian Way across the path of oncoming vehicles. Improvements to the junction under this scheme included amending the Station Road right turn to be controlled by a full red/amber/green arrow phase with exclusive right of way; separating Meridian Way and Beaulieu Drive to run in separate stages (to remove right turn conflicts) and provision of MOVA adaptive control to improve efficiency.

A further amendment to the signals in the 2009 scheme was to replace the filter green arrow signal for Meridian Way left turning traffic with a fully signalled left turn phase with red/amber/left turn green arrow signal aspects. This amendment was not identified in the 2008 CR report recommendations and it is believed this was introduced alongside the use of MOVA control to increase the efficiency of the left turn movement.

In October 2013 the secondary signals for Meridian Way were relocated following two separate vehicle collisions in the previous six months with the signal pole on which these signals were located (further details are given in Section 2.2).

2. Identified Issues and Improvement Options

2.1 Casualty Reduction report

A Casualty Reduction (CR) site investigation was carried out at the junction in 2013 as a result of 14 Personal Injury Collisions having occurred during the four year period from 01/04/2009 to 31/03/13. The investigation identified a pattern of collisions involving drivers travelling from A121 Meridian Way disobeying the signals and colliding with other vehicles entering the junction from A121 Station Road.

The CR report makes recommendations for further assessment of the signals operation and layout to mitigate the recorded collision pattern, which is the subject of this study.

A number of further recommendations were made to amend signing and road markings on the Meridian Way approach to the signals to enhance correct driver behaviour and lane choice. The report recommends the signing and road marking amendments are implemented along with appropriate amendments to the signals. Full details of these amendments can be found in Section 2.7.

Full details of this site investigation can be found in the CR site investigation report in Appendix A.

2.2 Assessment of current signal operation

As part of the improvements carried out in 2009 the signals controlling Meridian Way were amended so that the left turn lane (to Station Road) is controlled by separate signals to the ahead/right turn lane (to Beaulieu Drive and Highbridge Street).

The primary signals (close to the stop line) currently have red/amber/green arrow aspects adjacent to each lane with left or ahead/right green arrows as appropriate. During the investigation period covered in the CR report detailed above the secondary signal heads controlling both lanes were located on the pedestrian refuge island at Beaulieu Drive directly opposite the Meridian Way approach. The signals for each lane do not always show green at the same time and it is possible that collisions may be occurring because drivers are misinterpreting which signal applies to the lane they are using.

NB. In October 2013 the secondary signals for the Meridian Way traffic movements were relocated from the side-by-side arrangement on Pole 11 (on the pedestrian refuge island) following two separate vehicle collisions with this pole between March and September 2013. The secondary signal for the left turn lane is now located on Pole 9 (left hand side of Beaulieu Drive) and that for the ahead

and right turn lane on Pole 12 (right hand side of Beaulieu Drive). This was carried out as a temporary measure to mitigate possible damage to the signal equipment in the event of further collisions pending the outcome of this study.

A related possibility is that drivers are incorrectly selecting the left turn lane to go ahead to Beaulieu Drive. The junction layout is such that the left turn lane on Meridian Way is in line with the exit to Beaulieu Drive and this could contribute to drivers thinking this is the correct lane for this ahead movement. When the left turn lane is first at green in the cycle the adjacent ahead/right turn lane is still at red. Drivers attempting to go ahead to Beaulieu Drive from the left turn lane would be in conflict with vehicles proceeding from Station Road who have right of way during this stage (see Figure 2).

Figure 2: Meridian Way left turn traffic is at green at the same time as Station Way traffic. Note that signal for the ahead/right turn lane is still at red and drivers wishing to proceed ahead to Beaulieu Drive must wait for the green signal.

It should be stressed that the above assessment is a based on an interpretation of possible driver behaviour based on the current signal layout. The CR report does not provide any statements from car occupants or witnesses for any of the recorded collisions to provide confirmation of actual events.

Based on the findings and recommendations of the CR report consideration has been given to engineering measures on Meridian Way approach to enhance correct lane choice by drivers approaching the signals. Whilst improving safety is

the major objective of this study, any remedial measures implemented must have due regard to maintaining efficiency for all road users, particularly during peak times when the junction becomes heavily congested.

The CR report recommends that any amendments to the signalling are assessed using LinSig software to identify the impact on congestion. This has been undertaken for the improvement options below where this would result in changes to signal phasing and timings.

2.3 Option 1: Provide left turn filter against red signal

This option proposes to remove the separate signals for each lane (Figure 2) and return to the left turn filter signal arrangement as was previously in operation before the 2009 junction improvements detailed in Section 1.2.

The use of a filter signal arrangement would permit vehicles to turn left from Meridian Way to Station Road whilst the ahead/right turn lane is held at red. Station Road traffic would continue to run with the left turn movement as at present.

Figure 3: Meridian Way approach showing left turn filter green arrows (circled in red) before 2009 improvements

When the filter signals were previously installed (prior to the 2009 improvement) there were no recorded personal injury collisions following the pattern of those recorded in the period 01/04/2009 to 31/03/13. It is considered that returning to

the filter signal arrangement may help to reduce the instances of vehicles misreading the signals. In addition it is recommended that signing and road marking improvements detailed in section 2.7 are also implemented to reinforce correct driver lane choice.

In this option the existing green arrow aspects for both lanes would be replaced with full green aspects. As shown in Figure 3 the left turn filter arrow would be mounted next to the full green aspect on the signal head to the left of the stop line. As detailed in section 2.2, the secondary signals have been relocated from the centre island to poles on the left and right hand sides of Beaulieu Drive where they will be less vulnerable to vehicle collisions. It is proposed that the secondary signals remain on these poles. A left turn filter arrow would be located on the left hand head next to the full green aspect. The right hand head would require an indicative green arrow next to the full green aspect to reinforce to drivers that they can turn right unopposed.

NB. When the left turn filter signal arrangement shown in Figure 3 was previously used before 2009 both Meridian Way and Beaulieu Drive traffic ran together in the same stage. Right turning traffic on both arms would have to give way to oncoming traffic. These two arms have run at green in separate stages since the 2009 improvements.

This option has been assessed using LinSig software. This assessment indicates that replacing the existing left turn signals with filter signals would have no adverse impact on congestion.

2.4 Option 2: Convert nearside traffic lane to ahead/left movements

The CR report has identified possible driver confusion resulting from the current lane destination arrow and signal arrangement for Meridian Way as a possible cause of collisions and has recommended assessment of the following measures:

- Convert A121 Meridian Way nearside traffic lane to ahead and left movements
- Remove Meridian Way left turn movement from running at the same time as Station Road movements

In this option both Meridian Way traffic lanes would be green at the same time, with all other traffic movements including Station Road, at red. This would allow the current Meridian Way left turn lane to be designated as ahead and left to permit drivers to use this lane to go ahead to Beaulieu Drive without conflicting with Station Road traffic.

Whilst this solution is ideal in safety terms, junction capacity modelling using LinSig software indicates that the loss of green time to Meridian Way left turning

traffic by preventing this movement from running with Station Road would impact unacceptably on junction capacity. This left turn flow is very heavy in both weekday peak periods and the measures in this option would result in greatly increased queue lengths and delays on Meridian Way (see Table 1).

Given the severe impact on junction capacity that would result, this measure is not recommended as a suitable option for remedial action.

2.5 Option 3: Relocate secondary signals to same side of approach

In this option it is proposed that the Meridian Way secondary signals, currently on the far side of the junction, are relocated to the Meridian Way side of the junction close to waiting drivers. This arrangement is referred to as closely-associated secondary signals. The secondary signal for each lane would be placed a few metres ahead of the existing primary signal as shown in the example in Figure 4.

Figure 4 : Example of closely-associated secondary signals on a junction approach

This would have the effect of physically separating the signals for each lane to minimise any misinterpretation by drivers reacting to the 'wrong' signal. In each lane drivers would have a clear view of the signals intended for the lane they are using with potential distraction by the signals for the other lane kept to a minimum.

As this option would not change the existing signal phasing or timings there would be no impact on junction capacity and congestion and for this reason it is not necessary to carry out further assessment using LinSig software.

To be effective the relocation of the secondary signals would need to be undertaken with the signing and road marking improvements detailed in section 2.7 below to enhance correct driver lane choice.

2.6 LinSig junction capacity assessment summary

Table 1 summarises the junction capacity assessment of the proposed improvement options undertaken using LinSig software. For comparison purposes all options have been assessed against existing junction operation.

Traffic flow data used in the LinSig assessments dates from 2008 and was originally used for capacity assessment during design of the improvements implemented in 2009 and described in Section 1.2. Whilst these flows are more than 5 years old they are suitable to allow the *relative* impacts of the different options detailed above to be assessed.

It should be noted that the junction is currently overcapacity as indicated by the negative Practical Reserve Capacity (PRC) values shown in Table 1. In addition queue lengths in passenger car units (pcu - where 1 pcu = 1 car) are shown for the Meridian Way left turn lane. These values are indicative only but provide base values against which the relative impacts of proposed improvements can be measured.

As can be seen Options 1 and 3 do not impact on existing capacity, however the measures detailed in Option 2 would significantly reduce capacity with a corresponding increase in queuing and congestion.

Table 1: Summary of impact of Options on junction capacity

	Existing Operation		**Option 1** Left turn filter signal		**Option 2** Nearside lane ahead/ left		**Option 3** Relocate secondary signals	
AM Peak	Q Length (pcu)	63	Q Length (pcu)	No change	Q Length (pcu)	184	Q Length (pcu)	No change
	PRC (%)	-60%	PRC (%)	No change	PRC (%)	-108%	PRC (%)	No change
PM Peak	Q Length (pcu)	13	Q Length (pcu)	No change	Q Length (pcu)	107	Q Length (pcu)	No change
	PRC (%)	-49%	PRC (%)	No change	PRC (%)	-77%	PRC (%)	No change

2.7 Improvements to road signs and markings

The recommendations in the CR report also include measures to amend existing signing and road markings, primarily on Meridian Way approaching the junction, to ensure it is clear to a driver which is the correct lane for their destination.

These measures are detailed in the CR Report but in summary these are:-

- Add details of retail park to advance direction sign on Meridian Way approach
- Provide a traffic lanes direction sign on Meridian Way approach to indicate correct lane for each turning movement
- Provide 'Turn Left' and left directional arrow road markings in the Meridian Way left turn lane between the retail park and stop line
- Replace existing bifurcation arrow with a 'reversed' arrow that better reflects the junction layout (see Figure 5)
- Refresh all other worn markings throughout the junction and on approaches

These measures are shown on the drawing in Appendix B.

Figure 5: Meridian Way approach showing bifurcation arrow at start of lanes. Arrow to be reversed to indicate 'ahead' direction is via right hand lane

2.8 Further junction improvements

In addition to the above improvements two further concerns have been raised by the Local Highways Panel regarding the junction operation, difficulties for drivers wishing to turn right from Highbridge Street into Beaulieu Drive; and linking between the junction signals and the signalised junction to the west (A121 Station Road/Lea Road, for which Hertfordshire County Council are the highway authority.

2.9 Highbridge Street right turn facility

Vehicles turning right from Highbridge Street into Beaulieu Drive do not have exclusive right of way and have to wait to turn in gaps or for the oncoming traffic from Station Road to stop at red. Road markings are provided in the centre of the junction to guide right turning traffic, however these are now severely worn. These markings were laid out to provide a 'hooking' right turn arrangement with right turn traffic from Station Road and were originally employed before the 2009 junction improvements, when Station Road right turners had to wait in the junction for gaps in the opposing flow. This layout provides space for only one car turning right into Beaulieu Drive to wait in the centre of the junction in line with the traffic island. It is understood that drivers wishing to turn right into Beaulieu Drive find this layout difficult to use, although there is no indication from the Personal Injury Collision data of any safety issues with the current arrangement.

An 'all red' clearance stage was provided in the 2009 improvements to allow vehicles waiting to turn right into Beaulieu Drive to clear the junction with all other traffic movements stopped at red. The clearance stage is called by a loop in the centre of the junction, however it appears this loop may no longer be working as intended, particularly as the worn road markings make it difficult for drivers turning right to be positioned over the loop.

It is suggested that to alleviate this problem the markings in the centre of the junction are modified to allow right turning vehicles from Highbridge Street to wait clear of through traffic movements and the path taken by vehicles turning right from Station Road to Meridian Way. As part of the 2009 improvements the right turn from Station Road was changed to a fully signalled phase and these vehicles no longer wait in the centre of the junction to turn and so do not need give-way type markings. It should be possible to provide greater storage space for vehicles waiting to turn into Beaulieu Drive with the All Red clearance loop repositioned accordingly to ensure reliable demand of the all red clearance stage.

The proposed changes to the road marking for right turning vehicles and the repositioned 'all red stage' loop are shown on the drawing in Appendix C.

2.10 Coordination with Hertfordshire CC signal junction

The efficiency of traffic leaving the junction on the A121 towards Waltham Cross can be affected by downstream traffic congestion, resulting in periods when green time is not fully used and leads to queuing on the junction approaches. This has mainly been observed to occur during the weekday AM peak period and affects both the A121 Meridian Way and B194 Highbridge Street arms which experience the heaviest traffic flows at this time.

Observations confirm that the major source of this 'exit blocking' problem is traffic being stopped at the signal junction of A121 Station Road and Lea Road situated some 200m west of the Highbridge Street junction. This junction is operated by Hertfordshire County Council and therefore operates independently of the Highbridge Street signals. This results in the green period of the Lea Road signals being uncoordinated with the green periods of the major traffic movements at the Highbridge Street junction.

It may be possible to improve the coordination between the two junctions by linking the signal controllers via a cable to provide 'Linked MOVA' operation. This would require the cooperation of Herts CC and would require them to fund modifications to their signal equipment to set up this facility. It is understood that the Lea Road junction is equipped for MOVA control although it is not known whether this is operating at present.

There some 'history' regarding linking of the signals between the two junctions. When the Highbridge Street junction was improved in 2009 some additional cable ducting was installed across A121 Station Road to the east of the river bridge and close to the end point of the cable ducting system for the Lea Road signals. It is believed this was to facilitate a connection between the two junctions, however it is not currently known if the two duct systems were joined together at this time. In 2012 the Olympic Delivery Authority (ODA) investigated with ECC and Herts CC the possibility of linking the two junctions to maximise efficient working during events at the Lee Valley White Water Centre during the Games. It was proposed to provide the cable linking described above which would have remained as a permanent facility, however this was not progressed and the ODA instead funded the manual control of both junctions during the events.

Further investigation would be needed to determine the extent of works necessary to install the Linked MOVA facility and whether Herts CC would be prepared to fund and carry out the necessary works to their signal equipment.

3. Conclusions and recommendations

3.1 Conclusions

Option 1 to restore the left turn filter operation on Meridian Way was previously used to control left turns prior to the 2009 junction improvements. The 2008 CR report, which formed the basis of these improvements, did not identify a personal injury collision problem related to Meridian Way ahead movements at the time the filter signal was operating. The filter operation would not impact on congestion on Meridian Way or other junction arms. It is therefore concluded that removing the current separate lane signals and restoring the left turn filter may reduce instances of driver confusion and incorrect lane choice if implemented with the signing measures detailed in Section 2.7.

Option 2 to convert the Meridian Way left turn lane to allow both ahead and left movements would allow drivers to proceed ahead to Beaulieu Drive from the nearside lane of Meridian Way. Whilst this measure would possibly provide the most easily understood layout for drivers on Meridian Way the loss of capacity for the left turn movement would increase congestion, particularly on Meridian Way, resulting in greatly increased queuing and vehicle delays.

Option 3 to relocate the Meridian Way secondary signals to the same side of the approach would allow the current separate lane signals to remain. The secondary signals would still be clearly visible to the drivers in the lane they are apply to but could reduce potential confusion to drivers by physically separating the secondary signals. This measure would need to be carried out together with the signing improvements in Section 2.7 to ensure maximum benefit. However, it is not certain that this option would provide the same potential safety benefits as Option 1, where the filter signals when previously used did not appear to lead to any safety concerns.

3.2 Recommendations for remedial action

It is recommended that the measures outlined in Option 1 be implemented at the junction to meet the recommendations of the CR site investigation report, together with the road signs and markings modifications detailed in Section 2.7.

In addition to the Casualty Reduction measures it is recommended that the junction improvements detailed in Sections 2.9 and 2.10 are also implemented.

Estimated costs for the recommended measures are provided in Section 4.

4. Estimate of Costs

Cost estimates for the two feasible options detailed above, Options 1 and 3 and the recommended road signing and lining improvements in Section 2.7 are provided below for comparison purposes.

i) Casualty Reduction Measures

Option 1: Provide left turn filter

To design and install traffic signal measures = £11,200

Road signs and white line marking improvements

This work is required in addition to the signal remedial works in Option 1 above. It includes the works shown on the drawing in Appendix B and also includes renewal of worn road markings throughout the junction.

To design and install signing and road markings = £3,300

Total cost for Casualty Reduction measures = £14,500

ii) Further Junction Improvements

Highbridge Street right turn facility

To design and install facility = £4,700

Investigation of coordination with Herts CC signals

To undertake investigation = £4,500

NB. The costs for the above junction improvements are on the basis that both items will be undertaken at the same time.

Total cost for Junction improvements = £9,200

Appendices

Appendix A: Casualty Reduction Site Investigation 2013/14

A121 Station Road/Meridian Way j/w B194 Highbridge Street and Beaulieu Drive

Appendix B: Proposed road markings and sign design

Drawing No. DC1808/1200/001

Appendix C: Proposed improvements to Highbridge Street right turn facility

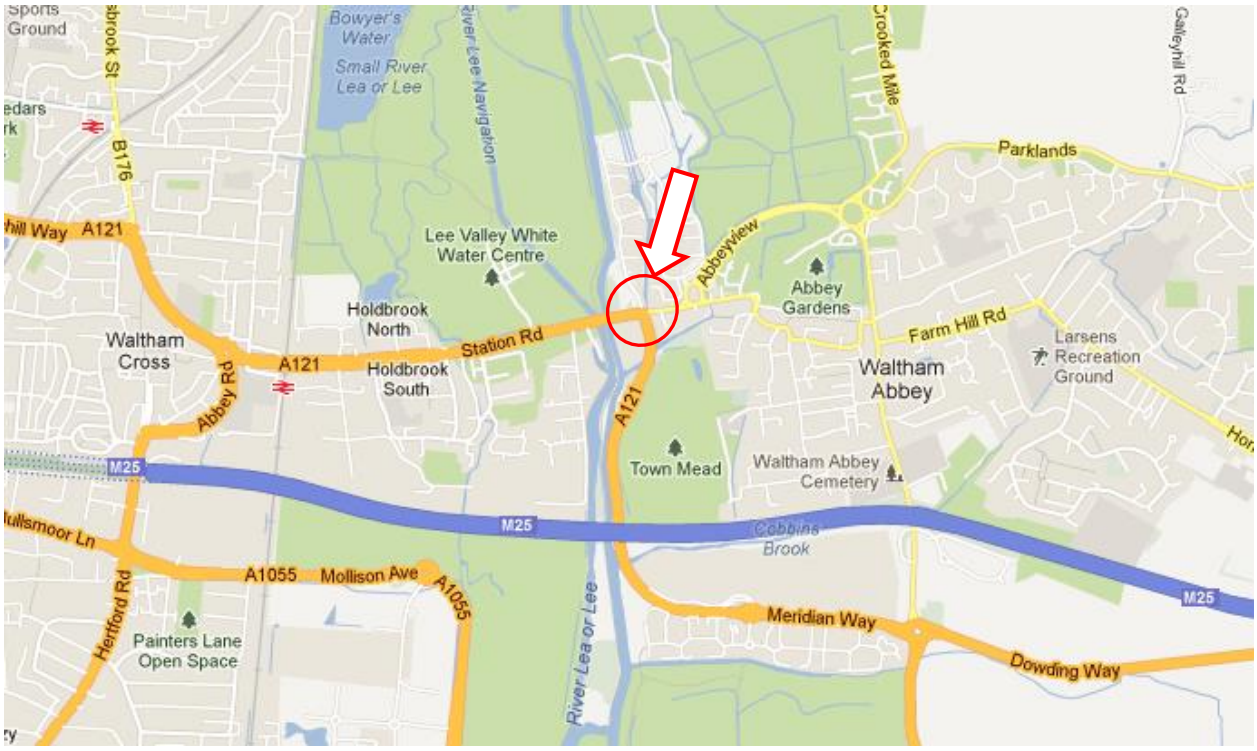
ECC Casualty Reduction Site Investigation 2013/14

Location: A121 Station Rd – Meridian Way J/w B194 Highbridge Street & Beaulieu Dr, Waltham Abbey

District: Epping

Investigation Period: 01/04/2009 to 31/03/2013 Grid Reference: 537721 200572

1.0 Site Location Plan



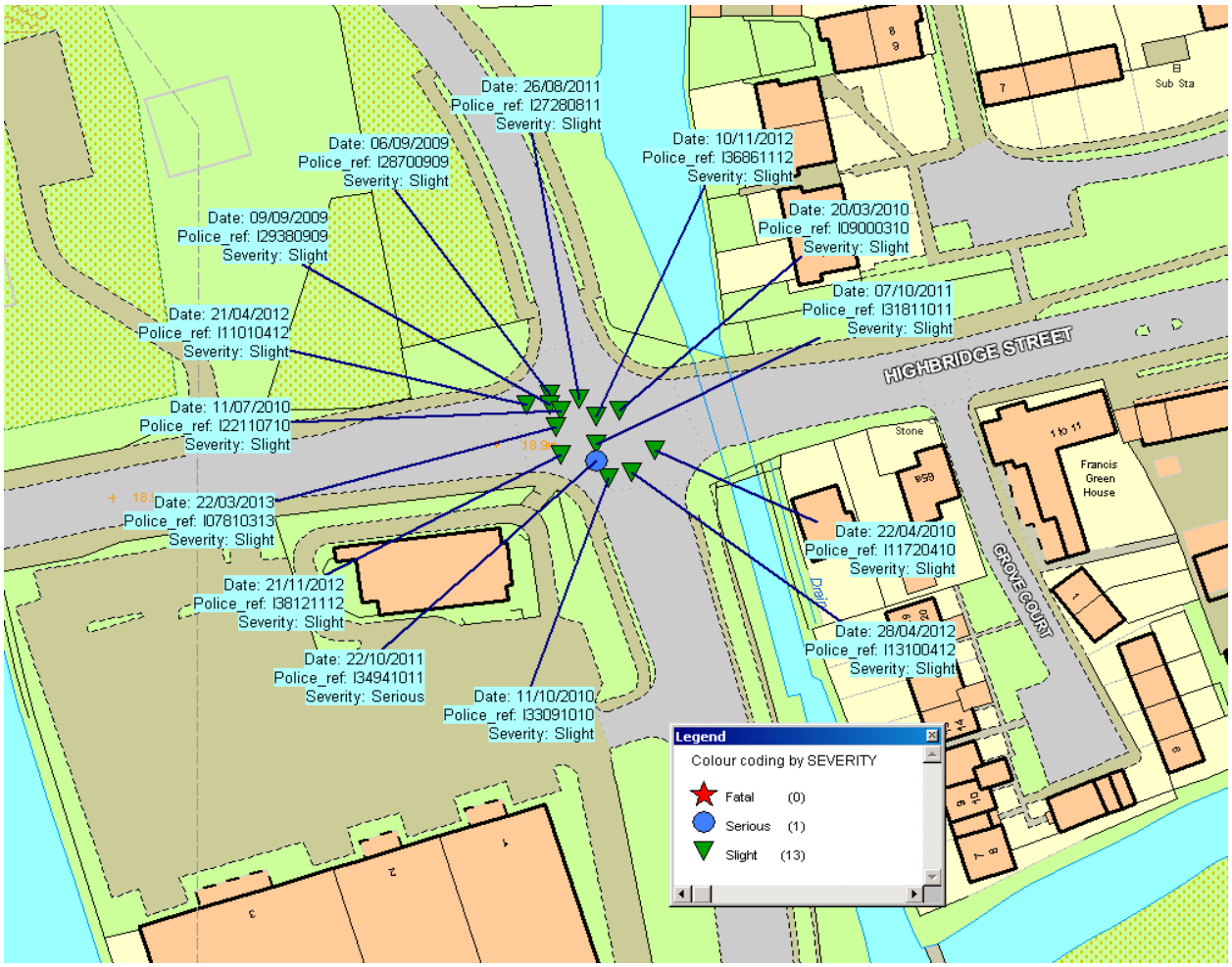
2.0 Aerial Photograph

3.0 Site Description

The site under investigation is the traffic signal controlled crossroads junction of A121 Station Rd – Meridian Way with B194 Highbridge St & Beaulieu Drive in Waltham Abbey.

All four roads are single carriageway and are subject to a 30mph speed limit at this location.

4.0 Personal Injury Collision Analysis (see AccsMap Data & attached stick diagrams)



A study of the Personal Injury Collision (PIC) data for the period from 01/04/2009 to 31/03/2013 at this location shows a pattern of collisions involving motorists travelling from A121 Meridian Way disobeying the traffic signals and colliding with other motorists, mainly motorists that were entering the junction from the A121 Station Road.

The data shows that overall there have been 14 PIC's at this location, 1 Serious and 13 Slight, resulting in 1 Serious and 17 Slight casualties.

42% of the PIC's occurred on a 'Wet/Damp' road surface and 50% occurred during the hours of darkness.

7% of the PIC's involved powered two wheelers.

*** It should be noted that the latest Department for Transport (DfT) guidance predicts that approximately 17.7 'Damage only' collisions occur in urban environments for every Personal Injury Collision that is recorded.***

Based on this guidance it is predicted that in the region of 250 collisions may have actually occurred at this junction over the four year investigation period.

5.0 Site Observations

5.1 During numerous site visits and numerous drives through the site travelling in all directions it was observed that the junction gets congested throughout the day. Numerous larger vehicles such as HGVs, LGVs, buses and coaches were observed to be travelling through the junction throughout the day.

Photo 1 – Junction can get congested throughout the day.

5.2 The operation of the junction is also impacted by the presence of a small retail park area and a fast food restaurant all located to the south-western corner of the junction with the vehicle access to both located less than 50m away from the traffic signals on the southern arm (A121 Meridian Way).

5.3 This junction has been controlled by traffic signals for a number of years and was subject to a traffic signals upgrade scheme in March 2009. The traffic signals were upgraded to a Microprocessor Optimised Vehicle Actuation (MOVA) system. MOVA is a proactive self-optimising control system for Traffic Signals where the signal phases are adjusted to suit prevailing traffic conditions to minimise congestion.

5.4 It was observed that the junction has an unusual layout. On the A121 Meridian Way northbound approach to the junction the nearside traffic lane that is directly in-line with the opposing Beaulieu Drive is assigned as a 'left turn only' lane and is subject to its own left turn filter traffic light phase. The offside traffic lane that does not line up with the opposing Beaulieu Drive is assigned as an 'ahead or right turn' lane and is controlled by a full green and accompanying right turn arrow light. It is believe that this unusual arrangement may be leading to confusion for northbound motorists resulting in them travelling straight ahead from either the nearside or offside traffic lane when the traffic signals indicate a green 'left turn only' filter arrow.

Photo 2 – Different traffic signals relate to the nearside and offside traffic lanes.

5.5 It was observed that it may not be completely clear to motorists which lane they should be in to travel in each direction as they approach the traffic signals on the A121 Meridian Way northbound approach. The presence of the vehicle access to the small retail park area and a fast food restaurant located to the left hand side just prior to the junction.


Photo 3 – Left turn arrow markings just prior to the vehicle access to the small retail park area and a fast food restaurant may mislead motorists into using the wrong traffic lane at the junction.

5.6 There is a large advanced directional sign present on the A121 Meridian Way northbound approach but it does not indicate the presence of the retail park.

5.7 The arrangement of the existing bifurcation arrow may also mislead motorists into thinking that they should be in the nearside traffic lane to go straight ahead.

5.8 It was observed that some of the stop lines, directional arrow markings and other road markings throughout the junction are partially worn.

Photo 4 – Advanced directional sign on A121 Meridian Way northbound approach. Also shows worn directional arrow markings.

6.0 Recommendations

Following the site inspection and an analysis of the previous Personal Injury Collisions, it is recommended that the following measures are undertaken:

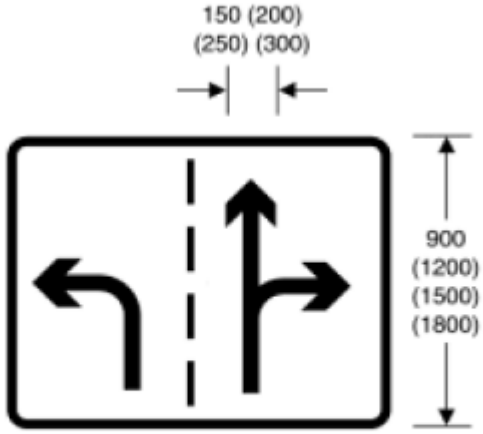
6.1 Assess the Linsig traffic signals modelling data to identify the impact on congestion of possible changes to signal phases and layout. (E.g. Convert nearside traffic lane on A121 Meridian Way northbound approach to be ahead and left)

6.2 Subject to the result of the assessment implement the most suitable changes, if any.

6.3 If changes to the signal phases and layout are deemed to be un-suitable then investigate possible options for relocation of traffic signal heads on this approach to reduce confusion for approaching motorists.

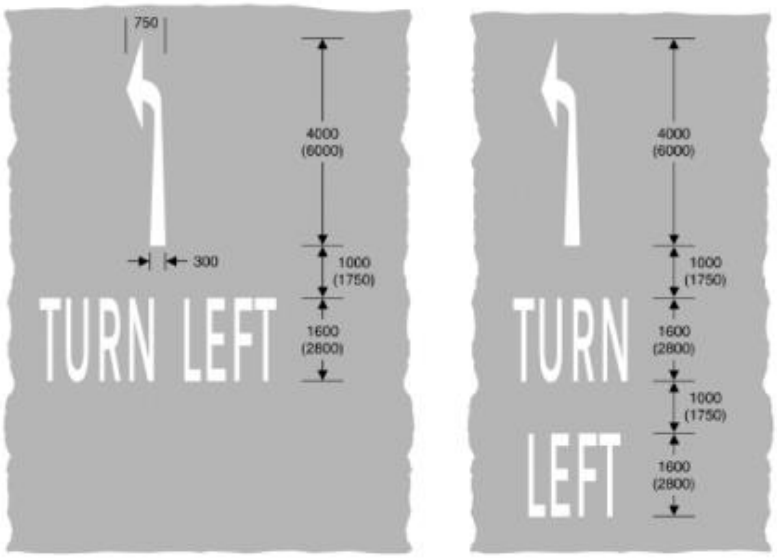
6.4 Add details of the retail park located to the left hand side just prior to the junction to the large advanced directional sign (New sign plate – existing one has graffiti present anyway).

6.5 Provide a traffic lanes directional sign to TSRGD dia.877 on the A121 Meridian Way northbound approach to junction to reflect the road layout (Design dependant on signal phases and layout). Ensure that the sign is located just north of the vehicle access to the retail park to avoid any confusion. Signs will need to be mounted at least 2.3m above the footway and sign posts located to impair visibility splays for motorists exiting the retail park.



877
Appropriate traffic lanes for different manoeuvres at a junction ahead
(Alternative types)

6.6 Subject to the signal phases and layout being altered, provide two sets of 'Left turn' directional arrow markings and text to TSRGD dia.1036.1 to the nearside traffic lane between the entrance to the retail park and the stop lines at the junction to re-enforce the message that motorists in this lane must turn left.



1036.1
Vehicular traffic must turn left
(Alternative types)

6.7 Subject to the signal phases and layout being altered, replace the existing misleading bifurcation arrow with one that better reflects the junction layout (I.e. Bifurcation to the left).

6.8 Refresh all other worn road markings throughout the junction and on approaches.

First Year Rate of Return (FYRR) Calculation

% FYRR = Annual Accident Savings x 100
Scheme Cost

Assumptions:

Average annual accident cost (£)	£104,720.00	(TAG 3.4.1)
Accidents treated	14	
Casualties treated	18	
Investigation time period (years)	4	

Estimated cost of recommended remedial measures (including Design, Audit and Traffic Management)

As per recommendations in Section 6	£20,000.00
	£20,000.00

Accident saving produced by proposed treatment (%)	42

%FYRR 770

Number of accidents that would not have occurred had the remedial actions been implemented at the start of the five-year accident period

5.88 or 1.47 each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the five-year accident period

7.56 or 1.89 each year

8.0 Scheme Approval & Authorisation

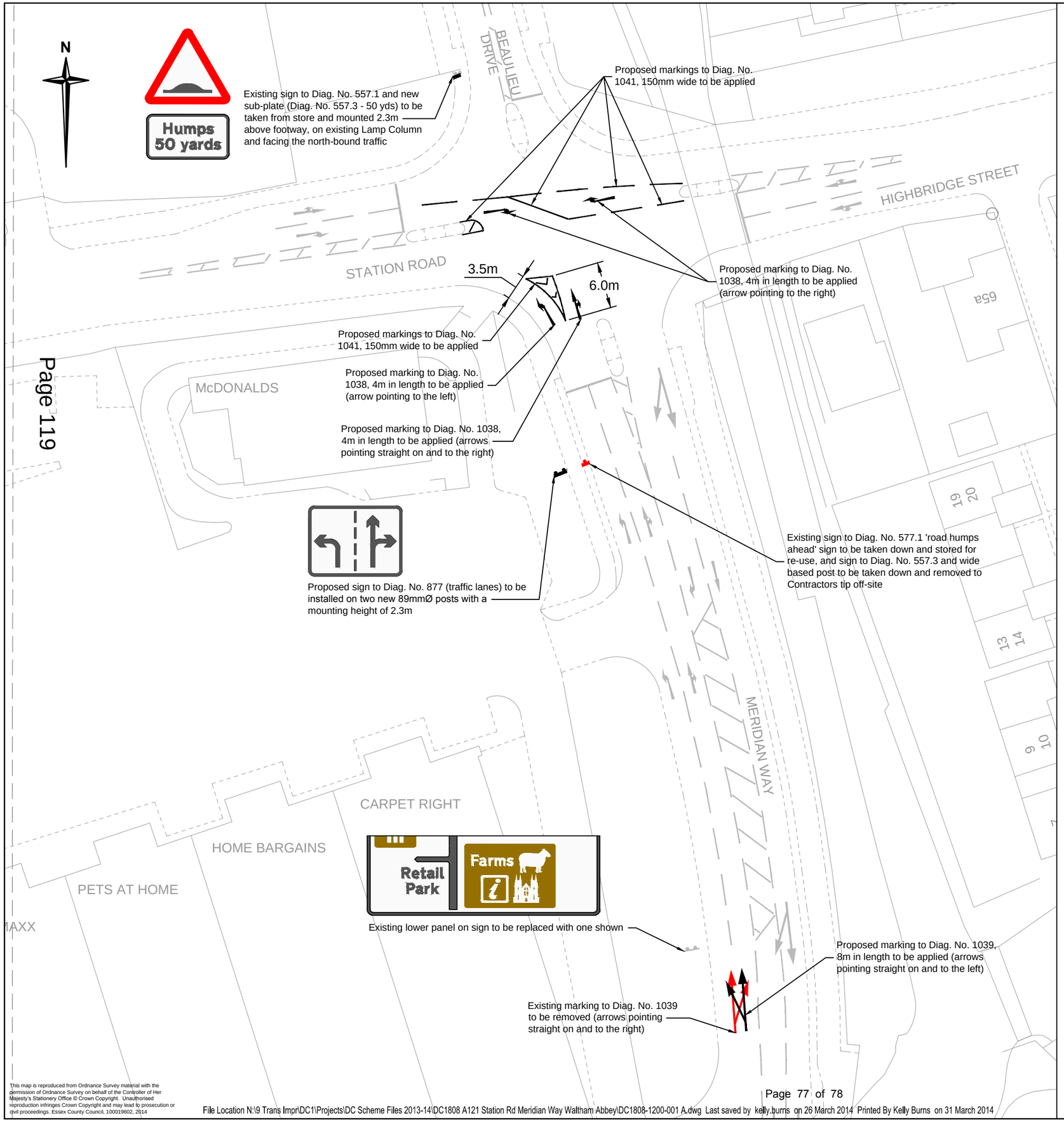
Approvals			
Name/role	**Tel No.**	**Signature**	**Date**
Lead Safety Engineer: Gary Webster	*01245 437257*		
Safety Engineering Manager: Nicola Foster	*01245 437146*		

Discussed/Agreed with Area Contact			
Name/role	**Tel No.**	**Signature**	**Date**
Senior Design Engineer: Matthew Lambert	*01268 297529*		

Financial Authorisation Code	Date of Authorisation

Contacts	
Name/role	**Address and/or Tel No.**
Essex Police Representative:	
County Councillor:	
Other:	

Comments



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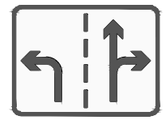
Panel x-height: to be determined
Background colour: WHITE
Border colour: BLACK
Text colour: BLACK
Material Class: as existing
Width: subject to x-height
Height: subject to x-height
Area: subject to x-height

Mounting Height: as existing

Sign Diag. No. 557.1 (existing)

Sign Diag. No. 557.23
Text colour BLACK
Background colour WHITE
Border colour BLACK
Material Class: Class RA2 (12899-1:2007)
Width 530mm
Height 290mm
Area 0.15sq.m

Mounting Height 2300mm
Post No. 1 (existing Lamp Column)



Sign x-height: 100mm
Background colour: WHITE
Border colour: BLACK
Material Class: Class RA2 (12899-1:2007)
Width: 1200mm
Height: 900mm
Area: 1.08sq.m

Mounting Height: 2300mm
Post No.: 2
Post Type: 3.2x89.0CHS

Notes

1. Do not scale. This drawing is to be read in conjunction with all other contract drawings and documents.
2. All works to be in accordance with the Department for Transport's Specification for Highway Works and Essex County Council Specifications and Standard Construction Drawings.
3. All traffic signs and lines are to comply with The Traffic Signs Regulations and General Directions 2002. Markings are to be white thermoplastic screed with applied solid glass beads unless otherwise stated.
4. The Contractor is responsible for the removal of all existing road markings affected by the works. The Contractor shall obtain the Engineer's approval to his proposed method of removing existing markings and shall not remove any existing markings without the prior approval of the Engineer.
5. All existing signs to be retained unless stated otherwise. Existing signs to be cleaned and any overhanging trees or bushes to be lopped or trimmed to maintain proper visibility to signs. Any defects to existing signs and/or posts noted by the Contractor during the works to be reported to the Engineer.

Key

- Existing white lines/markings (to remain)
- Existing white lines/markings (to be removed)
- Proposed white lines/markings
- Existing sign and posts
- Existing signs (to be taken down)
- Proposed sign
- Existing Lamp Column

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED
A	03/13	Right turn lanes added to junction	KMB	BSE

DRAWING STATUS

FEASIBILITY DESIGN

Essex Highways

Ringway Jacobs working in partnership with Essex County Council

Mark Rowe, Service Director, Essex Highways
County Hall, Chelmsford. CM1 1QH
Tel: 0845 6037631

SCHEME TITLE

A121 STATION ROAD MERIDIAN WAY, WALTHAM ABBEY JUNCTION IMPROVEMENT
FEASIBILITY

DRAWING TITLE

PROPOSED ROAD MARKINGS AND SIGN

DESIGNED	DRAWN	CHECKED	REVIEWED	APPROVED
KMB	KMB	BSE	BSE	ML
DATE	DATE	DATE	DATE	DATE
FEB 14	FEB 14	FEB 14	FEB 14	21/02/14

DRAWING UNITS U.N.O.: DIMENSIONS IN METRES

SCALE AT A3 (420x297mm): 1:500

DRAWING No.: **DC1808/1200/001**

REV.: **A**

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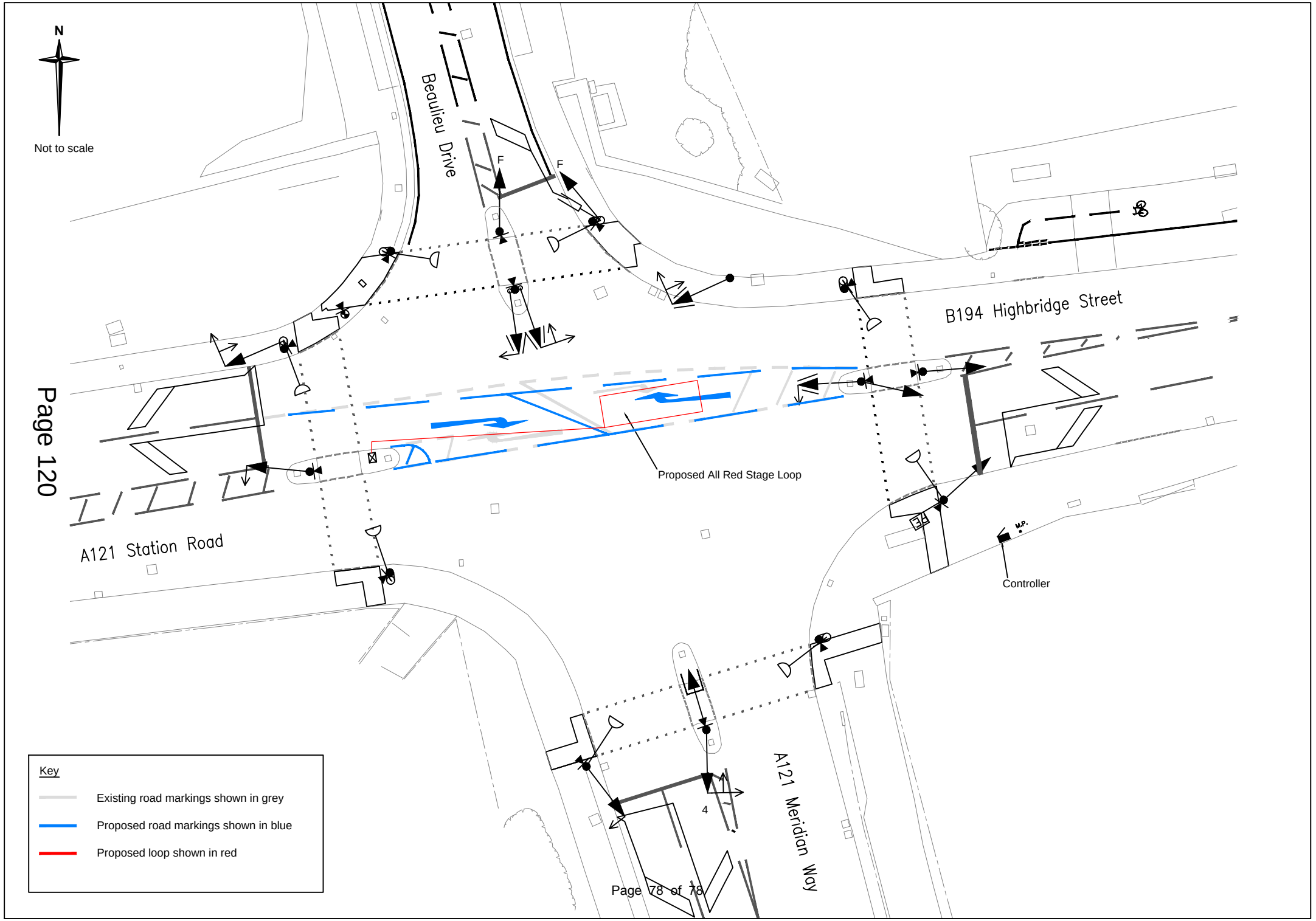
N
Not to scale
Beaulieu Drive
F
F
B194 Highbridge Street
Proposed All Red Stage Loop
A121 Station Road
M.P.
Controller
A121 Meridian Way
4
Key
Existing road markings shown in grey
Proposed road markings shown in blue
Proposed loop shown in red