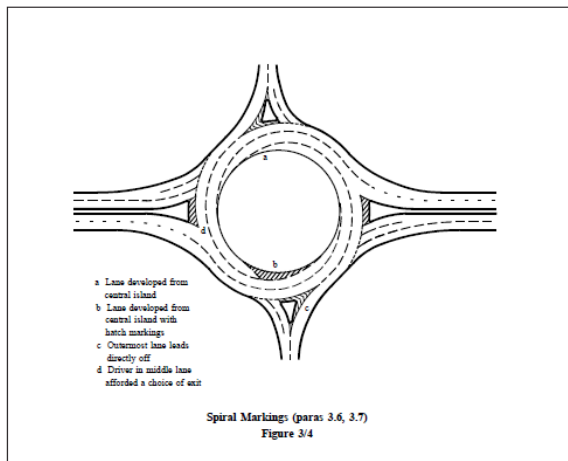


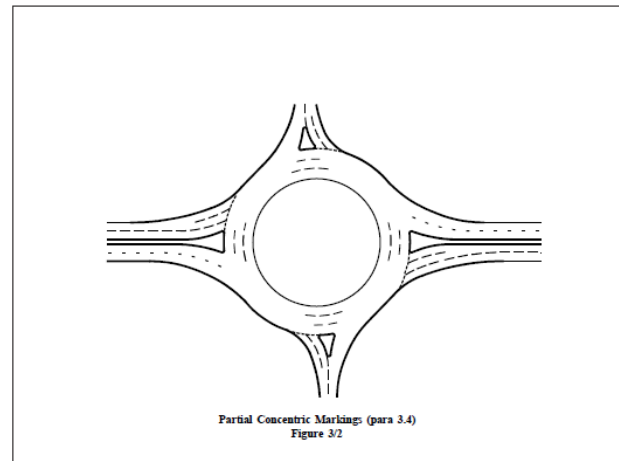
Location: A127 J/w A176 Northern Roundabout, Basildon
District: Basildon
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: N/a

EXECUTIVE SUMMARY

Intervention works: Amend the existing spiral style circulatory road markings to be more simplified, conventional roundabout markings and to match those used on the southern roundabout, removing the ambiguity regarding which lane motorists should be using at the junction.



EXISTING CONFUSING ROAD MARKINGS



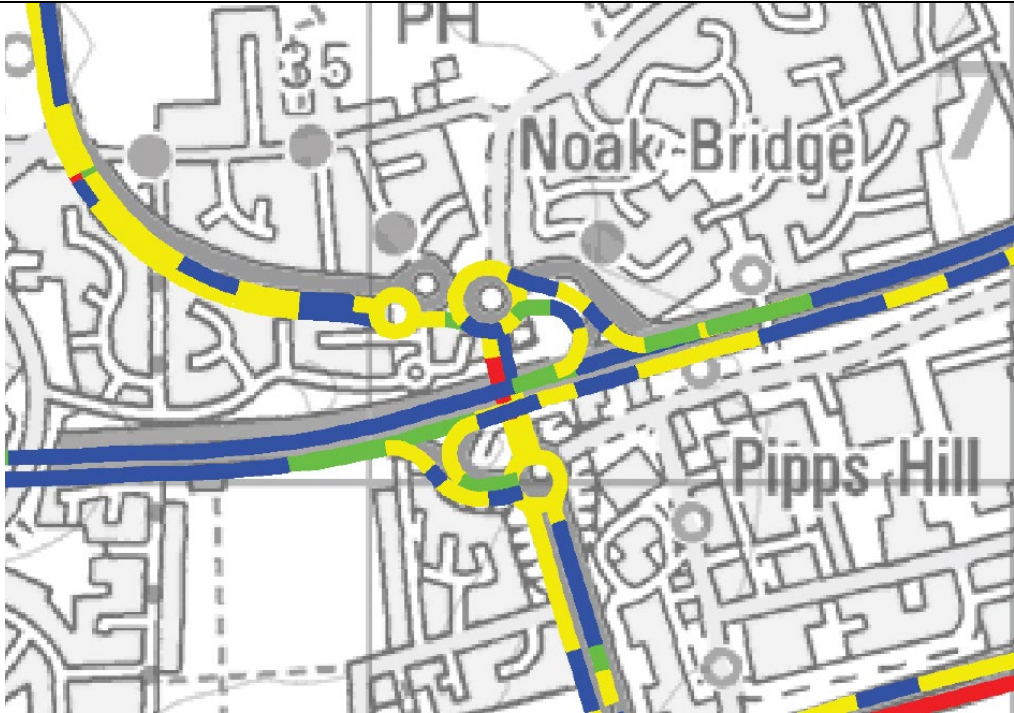
PROPOSED SIMPLIFIED ROAD MARKINGS

Also provide arrow road markings and associated lane destination signs on the A176 northbound approach, and the South Wash Road southbound approach to further emphasise which lane should be used at the junction.

Principle: Whilst the personal injury collision data for this location does not directly suggest an issue with regards to choice of lane and lane discipline on the roundabout circulatory, there is one collision recorded which directly mentions this as the problem.

There are also a number of nose to tail collisions recorded on the Noak Hill Road eastbound approach to the junction and it is thought that these could perhaps be as a consequence of motorists starting to pull away and then stopping as they see northbound motorists changing lanes on the roundabout circulatory.

The Road Safety Engineer for the area has experienced this problem first hand on at least three occasions and has witnessed a number of near misses many, many times.

Details	Description/Observations
Road Name (s)	A127 J/w A176 Northern Roundabout, Basildon
Grid Reference	561196, 190327
Speed Limit	40mph
Street Lit	Yes
Carriageway type	A127 is a two lane dual carriageway road. A176 varies between a single & dual carriageway, but is a single carriageway road immediately south of this roundabout junction. South Wash Road (Northern arm) is a single carriageway road.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Existing roundabout junction
Utilities Present	Potentially – Shouldn't affect any scheme proposals
Existing TRO's	None
Road Surface	 <p>Latest Scrim data from 2020_21 indicates the roundabout circulatory as being either 'Below investigatory' or 'Warning'. However, this is not considered to be a contributory factor in the collisions that have occurred here.</p>
Signing	<p>There are existing map type advanced directional signs present on the A176 (Northbound) and South wash Road (Southbound) approaches to the junction.</p> <p>There are no lane destination signs present on any of the approaches.</p>
Road Markings	Existing road markings are generally worn throughout the junction, and no lane destinations arrow markings are only provided on the A127 off-slip.
Visibility	Forward visibility towards the junction and visibility splays at the junction are good with no obstructions present.

Vegetation	No vegetation at the junction is considered to cause any issues.		
Highway Boundary / Land & Ownership Check?	N/a – On carriageway only	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	0	5	0	0	8

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Lane discipline issues on the roundabout circulatory or associated nose to tails on the other approaches	0	0	5	0	0	8

Additional information	N/a
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4.0 Site Photographs



Image 1 – Northbound approach to junction.



Image 2 – Northbound on roundabout circulatory (Lane discipline issues)



Image 3 – Map type ADS on northbound approach to junction.



Image 4 – Southbound approach to junction.



Image 5 – Southbound on roundabout circulatory



Image 6 – Map type ADS on southbound approach to junction.

Remedial Measures

- 1) It is recommended that the existing spiral style circulatory road markings should be replaced with simplified, conventional roundabout markings (Matching those used on the southern roundabout, removing the ambiguity regarding which lane motorists should be using at the junction.
- 2) It is recommended that directional arrow road markings and associated lane destination signs should be provided on the A176 (Northbound) approach, and the South Wash Road (Southbound) approach to further emphasise which lanes should be used at the junction.

6.0 Estimated Costs

Total Scheme Design and Implementation	£13,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Road markings	44%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings}}{\text{Scheme Cost}} \times 100$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	0	5
0	0	8
	3	

Estimated cost of recommended remedial measures

(including Design, Audit and Traffic Management)

As per recommendations in Section 6

£13,000.00

Collision saving produced by proposed treatment (%)

44

%FYRR fatal

0

%FYRR serious

0

%FYRR slight

148

Total % FYRR 148

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

2.2 or **0.73** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

3.52 or **1.17** each year

Location: Roundacre (BP Exit), Basildon
District: Basildon
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: 011 (Single Site)

EXECUTIVE SUMMARY

Intervention works: Reduce the southbound exit from Roundacre roundabout to a single lane on A176 Nethermayne to allow provision of a central refuge/waiting area between the northbound and southbound carriageways for vehicles turning right out of the BP service station to safely wait before joining the northbound carriageway. Proprietor

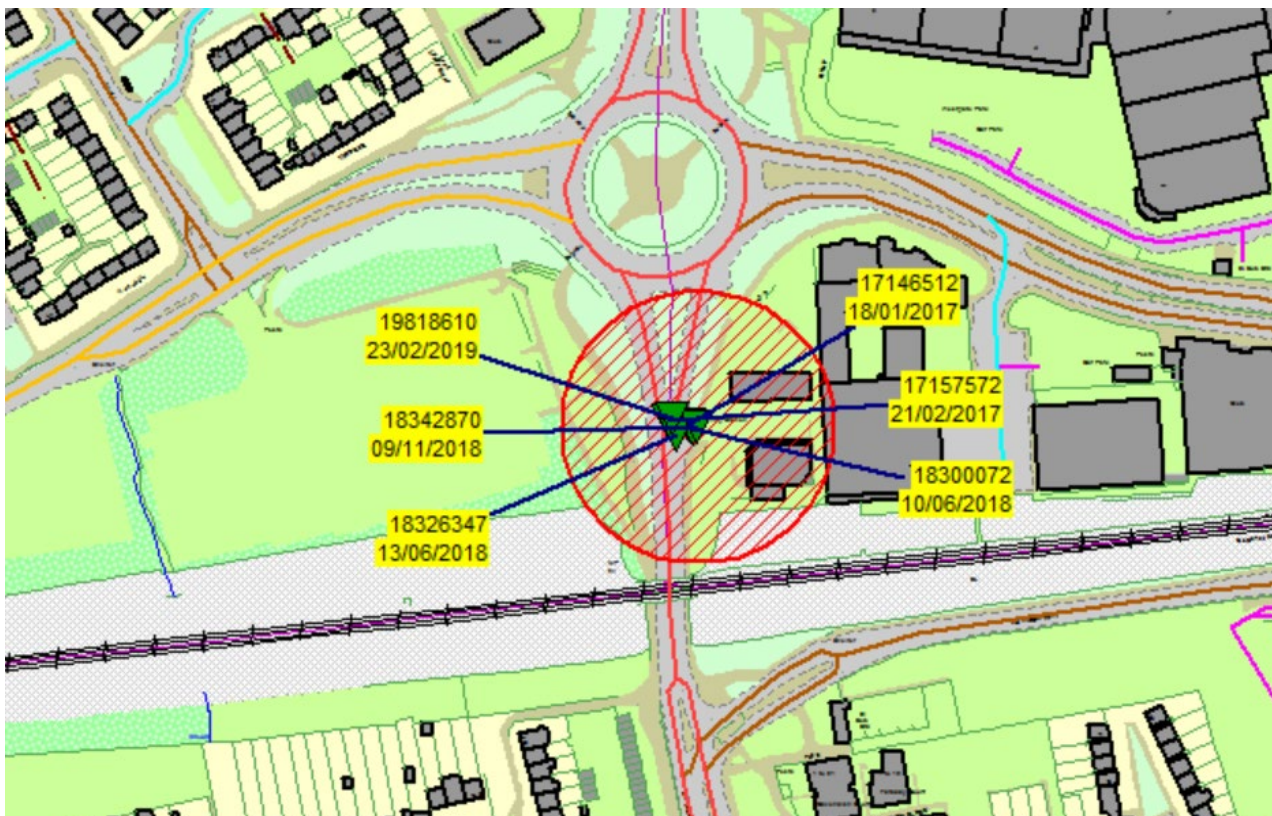
The A176 Nethermayne southbound carriageway could then widen out to two traffic lanes again on the approach to the traffic signalised junction with Ashdon Way.

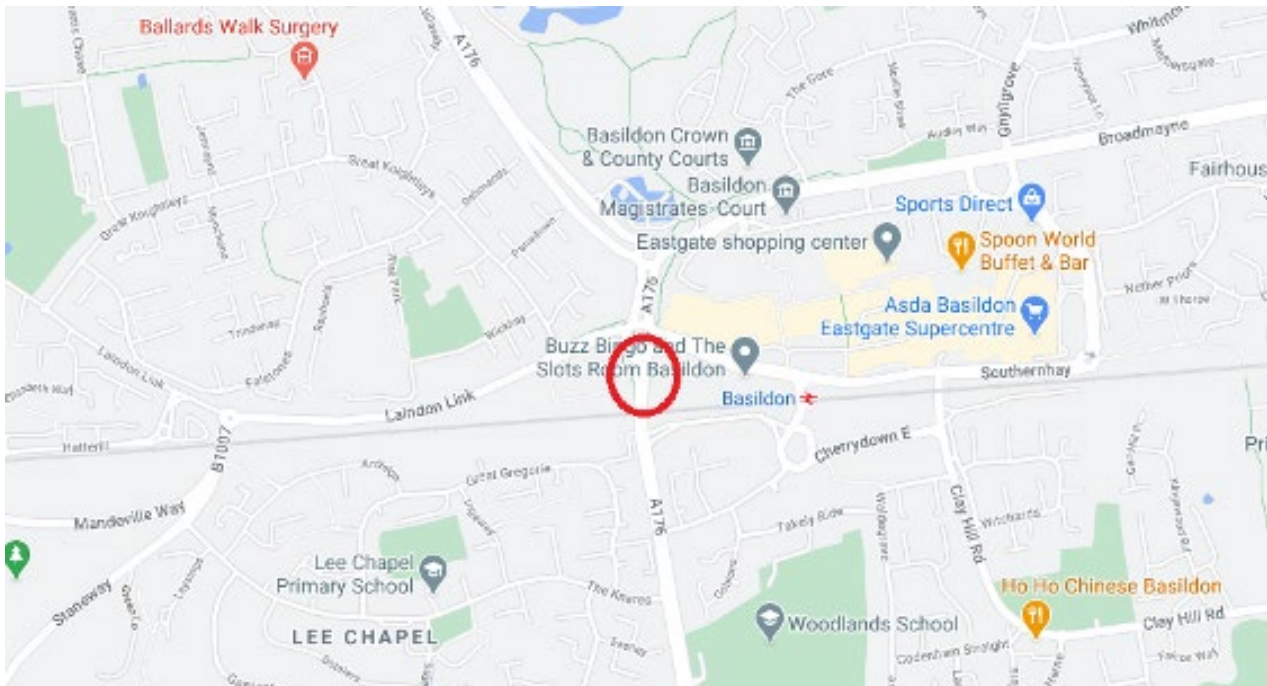
Associated destinations road markings and signs throughout the Roundacre junction will need to be amended to tie in with the proposed changes.

Principle: A study of personal injury collisions at this location indicates a pattern of collisions involving motorists turning out of the BP service station across the path of vehicles already travelling on A176 Nethermayne.

There is a long standing issue at this location with a previous proposed CR scheme to ban right turns from the service station exit was shelved as it was met with strenuous objections from the proprietors of the BP service station.


1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A176 Nethermayne (South of Roundacre junction)
Grid Reference	570033, 188355
Speed Limit	30mph
Street Lit	Yes
Carriageway type	A176 varies between a single & dual carriageway, but is a single carriageway at this location
Gradient	Level Gradient

Traffic Management / Existing Traffic Calming	N/a		
Utilities Present	Potentially – Shouldn't affect any scheme proposals		
Existing TRO's	None		
Road Surface	 <p>Latest Scrim data from 2020_21 indicates the southbound carriageway on the exit from the Roundacre roundabout as being 'Warning'. However, this is not considered to be a contributory factor in the collisions that have occurred here.</p>		
Signing	<p>There are no traffic signs associated with the vehicle access from the BP service station, as would generally be expected.</p> <p>There are numerous map type advanced directional signs, and other destinations signs provided throughout the Roundacre junction and on the approaches.</p>		
Road Markings	Existing road markings are generally very good throughout the area, having been recently refreshed.		
Visibility	<p>Forward visibility towards the junction/vehicle access is generally good on both approaches.</p> <p>The visibility splays at the junction/vehicle access are good with no obstructions present, but the issue is identifying two lanes of traffic on both approaches including those existing the nearby roundabout, with vehicles often travelling at different speeds.</p>		
Vegetation	No vegetation at the site is considered to cause any issues.		
Highway Boundary / Land & Ownership Check?	N/a – On carriageway only	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the	No		

scheme require change to an existing TRO or Speed Limit	
Other	None

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	2	11	0	2	13

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Motorists entering A176 Nethermayne in the path of approaching vehicles.	0	0	5	0	0	5

Additional information	Previous 2018/19 CR scheme proposal had to be shelved as it was met with strenuous objections from the proprietors of the BP service station.
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4.0 Site Photographs



Image 1 – Northbound approach to junction/vehicle access



Image 2 – Southbound approach to junction / vehicle access (Leaving Roundacre junction)



Image 3 – Visibility to right when attempting to join A176 from the junction / vehicle access



Image 4 – Visibility to left when attempting to join A176 from the junction / vehicle access



Image 5 – Two side by side vehicles attempting to join A176 from junction / vehicle access

Remedial Measures
<p>1) It is recommended that the southbound exit from Roundacre roundabout is reduced to a single lane on A176 Nethermayne to allow provision of a central refuge/waiting area between the northbound and southbound carriageways for vehicles turning right out of the BP service station to safely wait before joining the northbound carriageway.</p> <p>The A176 Nethermayne southbound carriageway could then widen out to two traffic lanes again on the approach to the traffic signalised junction with Ashdon Way.</p> <p>2) Existing directional arrow and destination markings, and lane destinations signs throughout the Roundacre junction will need to be amended to tie in with the new layout.</p>

6.0 Estimated Costs

Total Scheme Design and Implementation	£32,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Road markings	44%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings}}{\text{Scheme Cost}} \times 100$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	0	5
0	0	5
	3	

Estimated cost of recommended remedial measures

(including Design, Audit and Traffic Management)

As per recommendations in Section 6

£32,000.00

Collision saving produced by proposed treatment (%)

44

%FYRR fatal

0

%FYRR serious

0

%FYRR slight

60

Total % FYRR 60

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

2.2 or **0.73** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

2.2 or **0.73** each year

Site Report Essex Highways Casualty Reduction Site Report 2021/22



Location: B1464 High Road, Pitsea

District: Basildon

Collision Investigation Period: 01/01/2017 – 31/12/2019

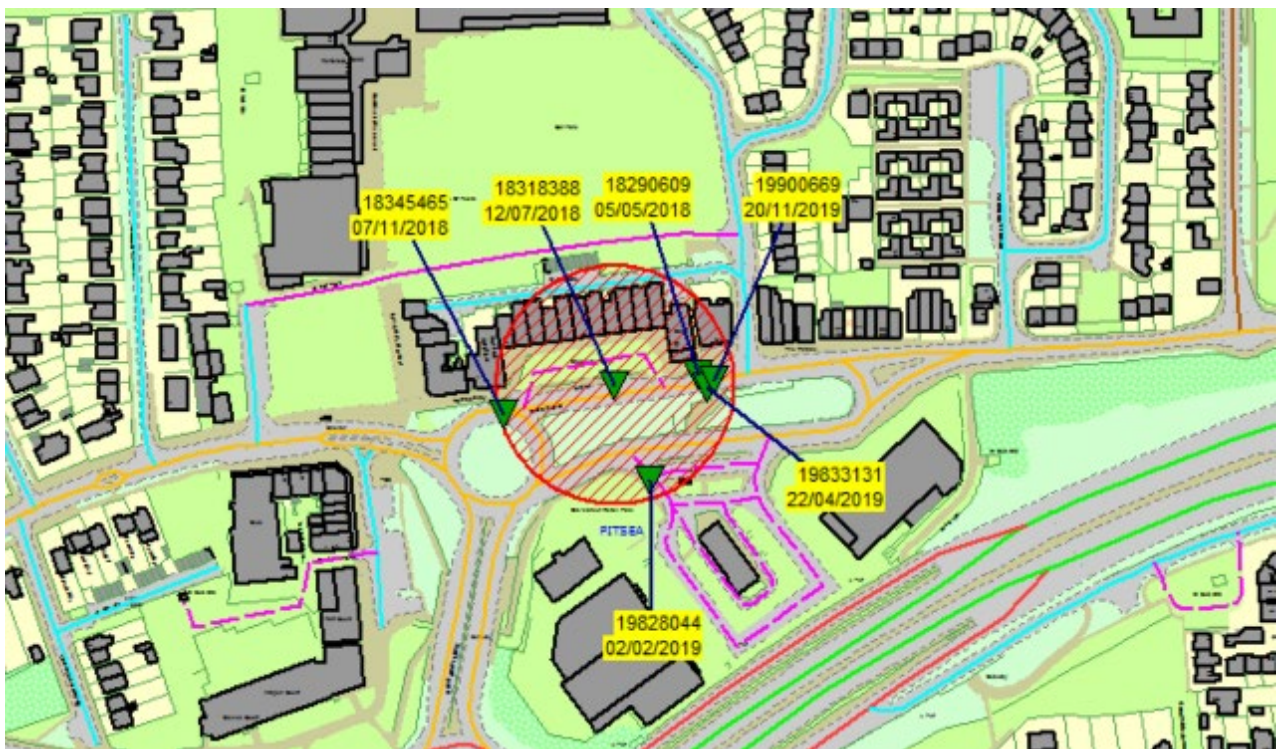
Site Ranking: 051 (Single Site)

EXECUTIVE SUMMARY

Intervention works: Provide additional high mounted traffic signal head(s) to increase conspicuity of the traffic signals for approaching motorists, provide a 'Traffic signals ahead' warning sign to the offside of the carriageway, and remove overgrown vegetation to offside of carriageway that obscures forward visibility to the offside signal head

Principle: A study of personal injury collisions at this location indicates a pattern of collisions on the eastbound approach to the existing traffic signalised crossing, some involving collisions into the back of vehicles that have stopped for the signals, and one involving a motorist failing to stop for the signals and colliding with a pedestrian on the crossing.

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	B1464 High Road, Pitsea
Grid Reference	573811, 188102
Speed Limit	30mph
Street Lit	Yes
Carriageway type	B1464 High Road varies between a single & dual carriageway, but is a dual carriageway at this location
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	N/a
Utilities Present	Potentially – Shouldn't affect any scheme proposals

Existing TRO's	None		
Road Surface	No SCRIM information is available for this location. The carriageway surface is not considered to be a contributory factor in the collisions that have occurred here.		
Signing	There are no traffic signs associated with the existing signal controlled crossing on the eastbound carriageway of B1464 High Road		
Road Markings	Existing road markings are generally very good throughout the area, having been recently refreshed.		
Visibility	Forward visibility towards the traffic signals is considered to be limited, particularly the offside signal head which is partially obscured by overgrown vegetation (Trees). Visibility to both signal heads can also be limited by high sided vehicles when traffic queues are present.		
Vegetation	As above, the offside traffic signal head is partially obscured by overgrown vegetation (Trees).		
Highway Boundary / Land & Ownership Check?	N/a – On carriageway only	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	1	6	0	1	8

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Collisions on eastbound approach to traffic signals	0	0	4	0	0	6

Additional information	N/a
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Image 1 – Eastbound approach to traffic signals when leaving nearby roundabout



Image 2 – Eastbound approach to traffic signals (Offside signal head partially obscured)

5.0 Recommendations

Remedial Measures
<p>1) It is recommended that the existing overgrown vegetation (Trees) that are partially obscuring the offside signal head should be completely removed.</p> <p>2) Provide a 'Traffic signals ahead' warning sign to the offside of the carriageway on the eastbound approach, visible to road users as they leave the nearby roundabout junction.</p> <p>3) Dependant on estimated costs, provide additional high mounted traffic signal head(s) to increase conspicuity of the traffic signals for approaching motorists.</p>

6.0 Estimated Costs	
Total Scheme Design and Implementation	£11,000

7.0 Predicted Collision Cost Saving from remedial measure	
Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures (Signal Improvement, warning sign & vegetation clearance)	42%

8.0 Other engineering options for consideration	
N/A	-

9.0 Scheme Approval		
Safety Engineering Team:	Tel No.	Date

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	0	4
0	0	6
	3	

Estimated cost of recommended remedial measures

(including Design, Audit and Traffic Management)

As per recommendations in Section 6

£11,000.00

Collision saving produced by proposed treatment (%)

42

%FYRR fatal

0

%FYRR serious

0

%FYRR slight

134

Total % FYRR 134

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

1.68 or **0.56** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

2.52 or **0.84** each year

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



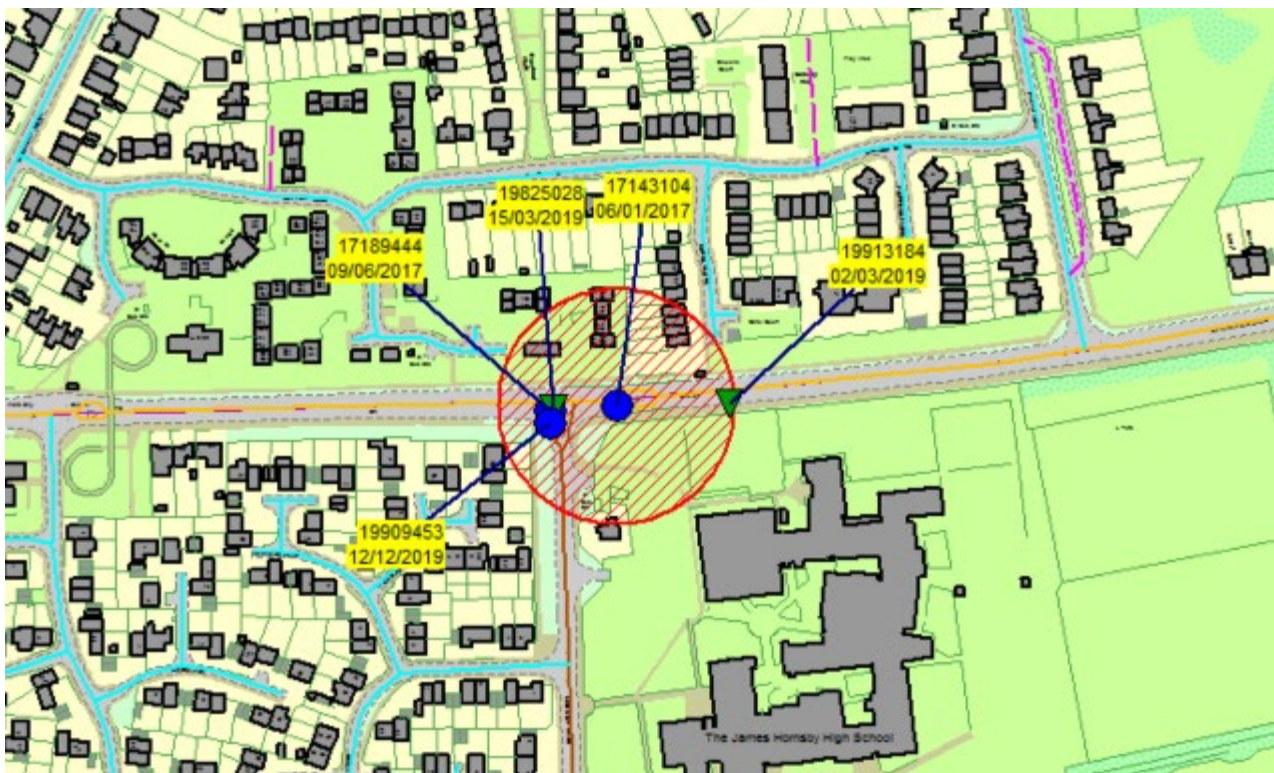
Location: B148 St Nicholas Lane J/w Leinster Road, Laindon
District: Basildon
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: 063 (Single Site)

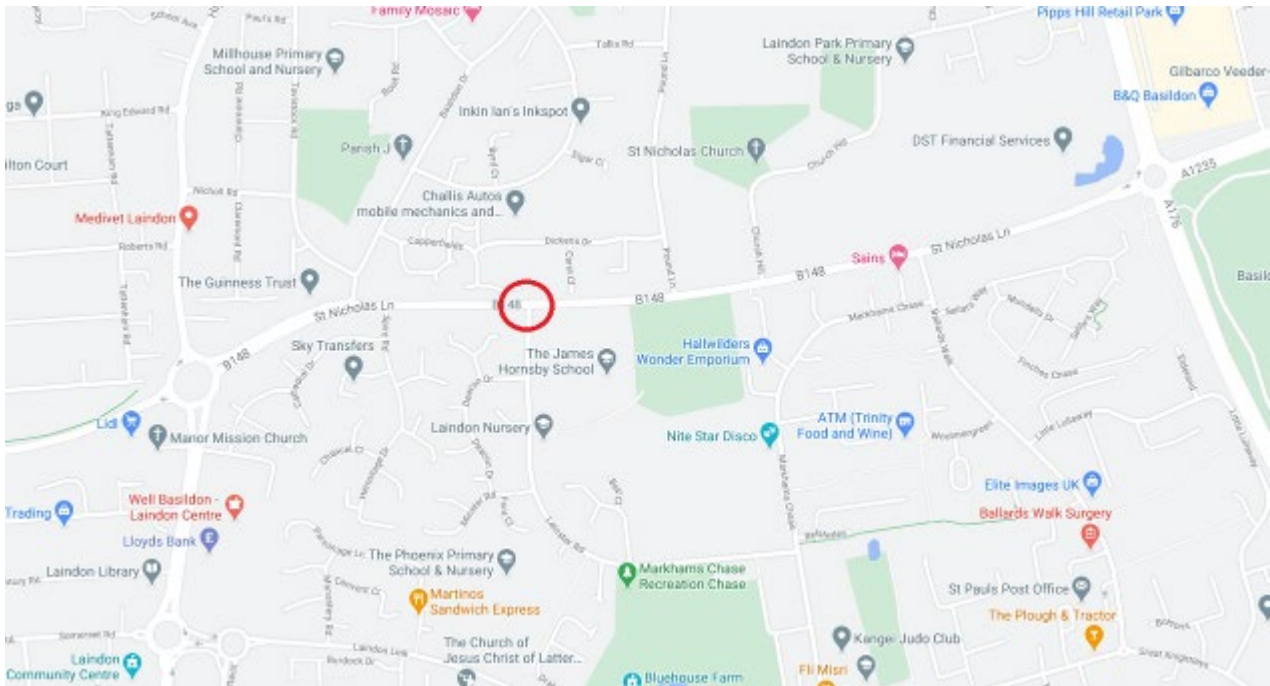
EXECUTIVE SUMMARY

Intervention works: Reduce the large kerb radius and carriageway width on the north-east corner of the junction, and provide a central traffic island to the eastern end of the right turn lane to reduce speeds of vehicles making left turns into the junction and reduce the possibility of vehicles overtaking as vehicles in front are making the left turn.

Principle: A study of personal injury collisions at this location indicates a pattern of collisions involving motorists turning right out of Leinster Road into the path of westbound vehicles on St Nicholas Lane. Two of the collisions involved westbound motorcyclists and specifically mention that they were masked by vehicles in front that were turning left into Leinster Road.


1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	B148 St Nicholas Lane J/w Leinster Road, Laidon
Grid Reference	568446, 189283
Speed Limit	40mph
Street Lit	Yes
Carriageway type	B148 St Nicholas Lanes is a wide single carriageway road. Leinster road is a narrower single carriageway estate road.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	N/a

Utilities Present	Potentially – Shouldn't affect any scheme proposals		
Existing TRO's	None		
Road Surface	 <p>Latest Scrim data from 2020_21 indicates the eastbound carriageway on B148 St Nicholas Lane as being 'Warning', and the westbound carriageway on B148 St Nicholas Lane as being 'Below investigatory' in the vicinity of the junction with Leinster Road.</p> <p>However, this is not considered to be a contributory factor in the collisions that have occurred here.</p>		
Signing	<p>There are no traffic signs associated with junction of B148 St Nicholas Lane with Leinster Road.</p> <p>There are 'Traffic signals ahead' warning signs provided on both B148 St Nicholas Lane approaches to the nearby signal controlled crossing (Immediately east of junction).</p>		
Road Markings	Existing road markings are generally good throughout the area.		
Visibility	<p>Forward visibility towards the junction is considered to be good on both B148 St Nicholas Lane (Main road) approaches.</p> <p>The visibility splays at the junction are generally good with few obstructions present, but the issue is identifying traffic approaching at speeds of around 40mph from both directions, including those following closely behind vehicles turning left into the side road.</p>		
Vegetation	No vegetation at the site is considered to cause any issues.		
Highway Boundary / Land & Ownership Check?	N/a – On carriageway only	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	4	2	0	5	6

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Motorists entering B148 St Nicholas Lane in the path of path of westbound vehicles on B148 St Nicholas Lane.	0	2	1	0	2	1

Additional information	N/a
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4.0 Site Photographs



Image 1 – Westbound approach junction



Image 2 – Eastbound approach junction



Image 3 – Visibility to left when attempting to join B148 St Nicholas Lane from Leinster Road



Image 4 – Visibility to right when attempting to join B148 St Nicholas Lane from Leinster Road

5.0 Recommendations

Remedial Measures

- 1) It is recommended that the kerb alignment to the north-east corner of the junction should be amended and a central traffic island provided to the eastern end of the right turn lane in order to reduce speeds of vehicles making left turns into the side road, and reduce the possibility of vehicles overtaking as vehicles in front are making the left turn.

6.0 Estimated Costs

Total Scheme Design and Implementation	£30,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Junction Improvement	44%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	2	1
0	2	1
	3	

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

As per recommendations in Section 6

£30,000.00

Collision saving produced by proposed treatment (%)

44

%FYRR fatal

0

%FYRR serious

252

%FYRR slight

13

Total % FYRR 265

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

1.32 or **0.44** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

1.32 or **0.44** each year

Site Report Essex Highways Casualty Reduction Site Report 2021/22



Location: B1389 Hatfield Rd Witham

District: Braintree

Collision Investigation Period: 01/07/2010 to 30/06/2020

Site Ranking: N/A – Fatal Collision Site

EXECUTIVE SUMMARY

Intervention works:

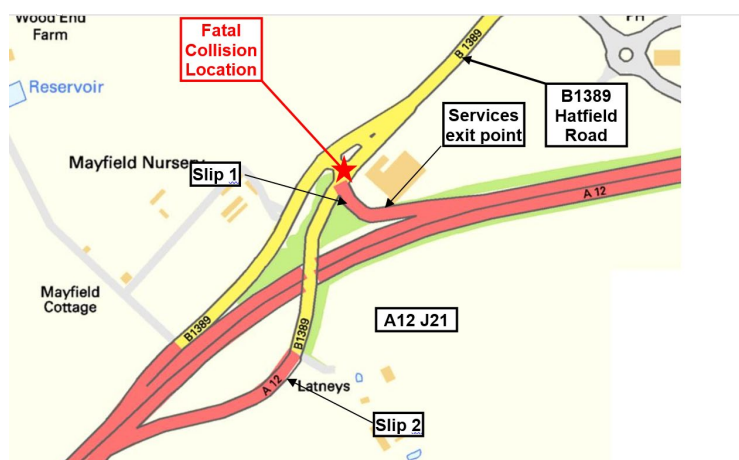
Provide a no entry sign on B1389 Hatfield Road for road users exiting the service area to indicate that the right turn manoeuvre out of the service station is prohibited. (Additional TRO may be required extended original existing 'no entry' prohibition present.

Provide side road junction carriageway markings at exit from service area on to B1389 Hatfield Road.


Liaise with Highways England to provide No Entry sign at the service station exit on to A12 eastbound slip road.

An investigation of the previous 10 years collision data (01/07/2010 to 30/06/2020) within a 200m radius of the fatal collision location on Essex County Council network indicates that there have been 11 personal injury collisions recorded excluding the recent fatal. 6 of the collisions occurred on the A12, Highways England Trunk Road. Of the remaining 5 collisions, 3 were single vehicle loss of control in wet/damp carriageway surface conditions, and 2 involved vehicles crossing the eastbound carriageway entering the petrol station in to the path of oncoming vehicles.

1.0 Site Plan with Collision Plot



2.0 Site Description & Observations

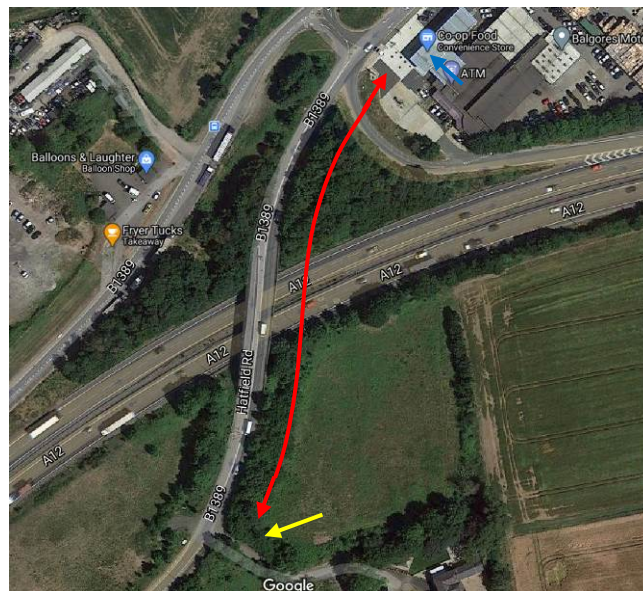
Details	Description/Observations
Road Name (s)	B1389 Hatfield Rd Witham
Grid Reference	*E580692, N212870*
Speed Limit	National Speed Limit
Street Lit	No
Carriageway type	Single Carriageway – One Way
Gradient	Level Gradient
Utilities Present	Potentially
Existing TRO's	Existing No Entry along B1389 Hatfield Rd
Road Surface	 <p>Available SCRIM data indicates Hatfield Road carriageway surface is at "Warning Level".</p>
Signing	<p>There is no definitive information indicating which slip road vehicle 1 was traveling the wrong way along. The direction of travel of vehicle 1 (northwest) implies the vehicle was potentially travelling up the A12 eastbound entry slip road (Slip 1). It is unknown if the driver turned left out of the services exit at the eastbound slip road, or whether the vehicle has turned from the A12 eastbound carriageway and driven all the way up the slip road.</p> <p>At the services access to the slip road (HE Network) there is a left only sign provided opposite the services exit point (please see image 2). There is no sign to the right of the access indicating No Entry. Any signing provision at this location falls under the remit of Highways England.</p> <p>At the exit from the service area on to B1389 Hatfield Road, road user options are left turn (to access either of the A12 on-slips) or straight ahead (crossing the B1389 Hatfield Road). There are no signs indicating that the right turn is prohibited to exiting vehicles from the service station (please see image 1).</p> <p>Approaching the collision location from the south west, a traffic island with appropriate keep left bollard is provided, to prevent vehicles entering the one way section of B1389 Hatfield Road.</p>
Road Markings	<p>At the collision location, B1389 Hatfield Road is one way south east bound. In the vicinity of the collision site, as road users travel south west the carriageway is divided in to 2 lanes, one straight ahead and one right turn.</p> <p>The straight ahead manoeuvre is for road users wishing to access either</p>

the A12 NB or SB on slips. The right turn lane is for road users wishing to access the B1389 in an easterly direction (as per image below).



As road users travel south westbound – just past the A12NB on-slip the carriageway again becomes a two way directional flow for a short distance of approximately 200m (red arrows in image below).

This is to cater for right turning movements out of a side access road (yellow arrow in below image). There is a double white line system present along this section which is a fair condition.



Direction arrow road markings are provided, but the lane separation road marking is worn out. No markings are provided on the exit from the petrol station (refer to blue arrow in image above).

N/A

Visibility

Vegetation	N/A		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	No (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	Yes – possible extension to existing No Entry TRO.		
Other			

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Collisions within 250m radius of fatal collision (excluding recent fatal collision)	0	0	11	0	0	11
6 Collisions on HE Network 3 single vehicle Loss of Control 2 involved vehicles crossing the eastbound carriageway entering the petrol station in to the path of oncoming vehicles						

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Road users travelling in opposite direction to permitted flow of traffic	1	0	0	1	0	0

Additional information	None.
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4.0 Site Photographs



Image 1: Services exit to Hatfield Road



Image 2: Services exit to A12 Slip Road (Slip 1)



Image 3:
Services exit to A12 Slip Road (Looking right)



Image 4: South West approach to B1389 one way section

5.0 Recommendations

Remedial Measures

Provide a no entry sign on B1389 Hatfield Road for road users exiting the service area to indicate that the right turn manoeuvre out of the service station is prohibited. (Additional TRO may be required extended original existing 'no entry' prohibition present.

Provide side road junction carriageway markings at exit from service area on to B1389 Hatfield Road.

Liaise with Highways England to provide No Entry sign at the service station exit on to A12 eastbound slip road.

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6.0 Estimated Costs

Total Scheme Design and Implementation	£5000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	42%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

First Year Rate of Return (FYRR) Calculation: Non Built Up Rds (other than Motorways) with Speed Limit of 40mph or greater				
$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$				
Assumptions:		Fatal	Serious	Slight
Average annual collision cost (£)		£2,422,598	£292,513	£31,937
Collisions treated		1	0	0
Casualties treated		1	0	0
Investigation time period (years)		10		
Estimated cost of recommended remedial measures (including Design, Audit and Traffic Management)				
As per recommendations in Section 6		£5,000.00		
Collision saving produced by proposed treatment (%)		41		
%FYRR fatal		1987		
%FYRR serious		0		
%FYRR slight		0		
Total % FYR 1987				
Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period				
0.41		or	0.04 each year	
Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period				
0.41		or	0.04 each year	

Location: Trueloves Lane J/w B1002 Roman Road, Mountnessing
District: Brentwood
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: 106 (Single Site)

EXECUTIVE SUMMARY

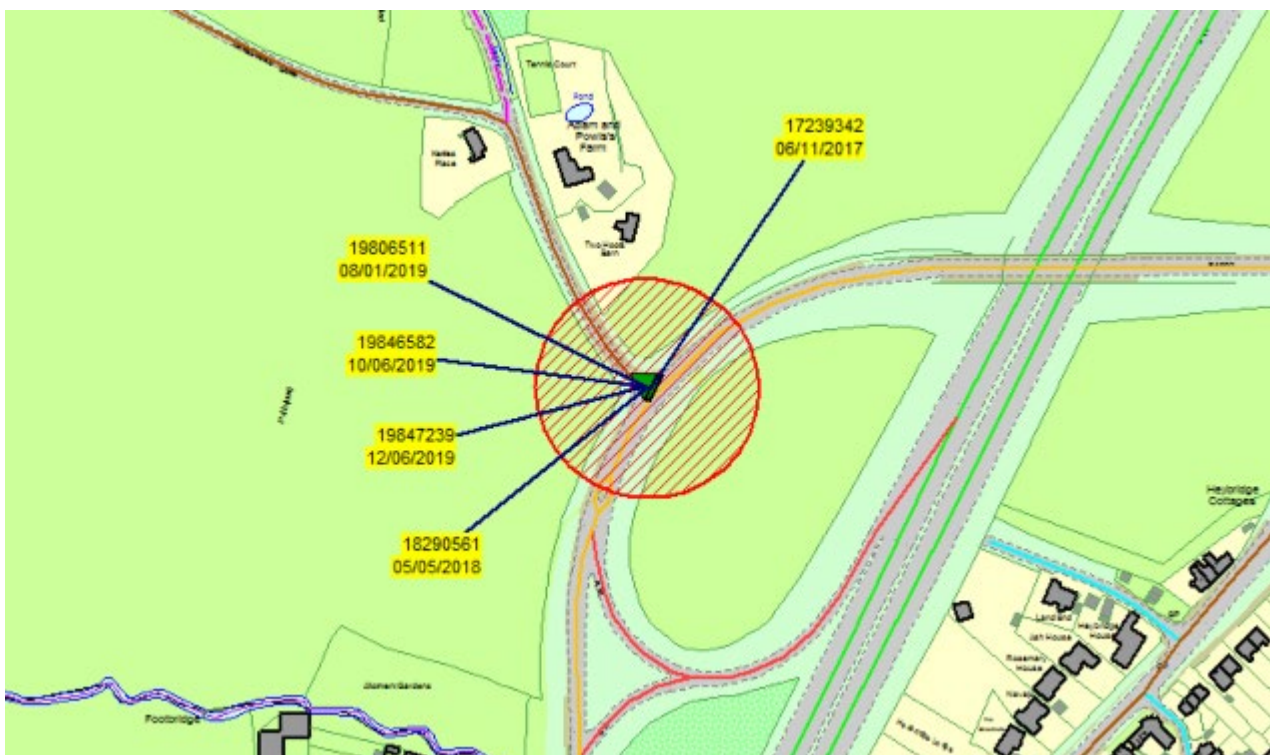
Intervention works: Package of measures to encourage slower vehicle speeds on the main road approaches (B1002 Roman Road) to the junction through provision of additional 40mph speed limit repeater signs, and provision of 'Side road on bend ahead' warning signs on both approaches.

Also proposed to remove areas of overgrown vegetation within the visibility splay to the left of the side road, and a small tree within the visibility splay to the right of the side road, close to the entry to the A12 northbound on-slip.

For completeness it is also proposed to provide a new 'Give way' sign on the Trueloves Lane approach, and new flag type destination signs opposite the side road (Trueloves Lane to improve conspicuity for motorists as they approach the junction.

Principle: A study of personal injury collisions at this location indicates a pattern of collisions involving motorists turning right out of Trueloves Lane into the path of north-eastbound vehicles on B1002 Roman Road.

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	Trueloves Lane J/w B1002 Roman Road, Mountnessing
Grid Reference	563753, 198731
Speed Limit	40mph
Street Lit	Yes
Carriageway type	Trueloves Lane & B1002 Roman Road are both single carriageway roads.
Gradient	<p>There is a slight downhill gradient running north-east to south-west on B1002 Roman Road.</p> <p>There is also a slight downhill gradient running towards the give way lines on the Trueloves Lane approach.</p>
Traffic Management / Existing Traffic Calming	N/a
Utilities Present	Potentially – Shouldn't affect any scheme proposals
Existing TRO's	None
Road Surface	No SCRIM information is available for this location.

	The carriageway surface is not considered to be a contributory factor in the collisions that have occurred here.		
Signing	There are no traffic signs associated with the junction provided on any approaches (Trueloves Lane or B1002 Roman Road).		
Road Markings	Existing road markings throughout the site are generally good with the exception of the give way marking at the junction that are badly worn.		
Visibility	<p>Forward visibility towards the junction is generally good on both B1002 Roman Road approaches.</p> <p>Forward visibility towards the give way lines is slightly limited on the Trueloves Lane approach due to the slight downhill gradient.</p> <p>The visibility splays at the junction are generally good in both directions but there are some trees/hedges are some obstructions (Trees/hedges) present that could be removed to maximise the splays further.</p>		
Vegetation	As above, there are some Trees/hedges present that could be removed to maximise visibility splays further.		
Highway Boundary / Land & Ownership Check?	Yes (Highway Boundary unclear)	Is the scheme within Highway boundary or on land owned by ECC(*)	Unclear (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	0	5	0	0	8

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Motorists on Trueloves Lane failing to give way to north-eastbound vehicles on B1002 Roman Road	0	0	5	0	0	8

Additional information	N/a
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4.0 Site Photographs



Image 1 – Trueloves Lane approach to junction



Image 2 – B1002 South-westbound approach to junction



Image 3 – B1002 North-eastbound approach to junction



Image 4 – Visibility to right when attempting to join B1002 Roman Road from Trueloves Lane



Image 5 – Visibility to left when attempting to join B1002 Roman Road from Trueloves Lane

5.0 Recommendations

Remedial Measures

- 1) It is recommended that the area of overgrown vegetation within the visibility splay to the left of the side road should be substantially cut back, and the small tree within the visibility splay to the right of the side road should be removed.
- 2) Provide additional 40mph speed limit repeater signs on both B1002 Roman Road approaches.
- 3) Provide 'Side road on bend ahead' warning signs on both B1002 Roman Road approaches.
- 4) Provide new flag type destination signs opposite the side road (Trueloves Lane to improve conspicuity for motorists as they approach the junction.
- 5) Refresh worn give way road markings at the junction.

6.0 Estimated Costs

Total Scheme Design and Implementation	£22,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures (Signage & vegetation clearance)	42%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	0	5
0	0	8
	3	

Estimated cost of recommended remedial measures

(including Design, Audit and Traffic Management)

As per recommendations in Section 6

£22,000.00

Collision saving produced by proposed treatment (%)

42

%FYRR fatal

0

%FYRR serious

0

%FYRR slight

84

Total % FYRR 84

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

2.1 or **0.70** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

3.36 or **1.12** each year

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



Location: A1114 Princes Rd/London Rd/B1007 Wood St/Moulsham St (Miami RAB)
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site 005 (Single Site)

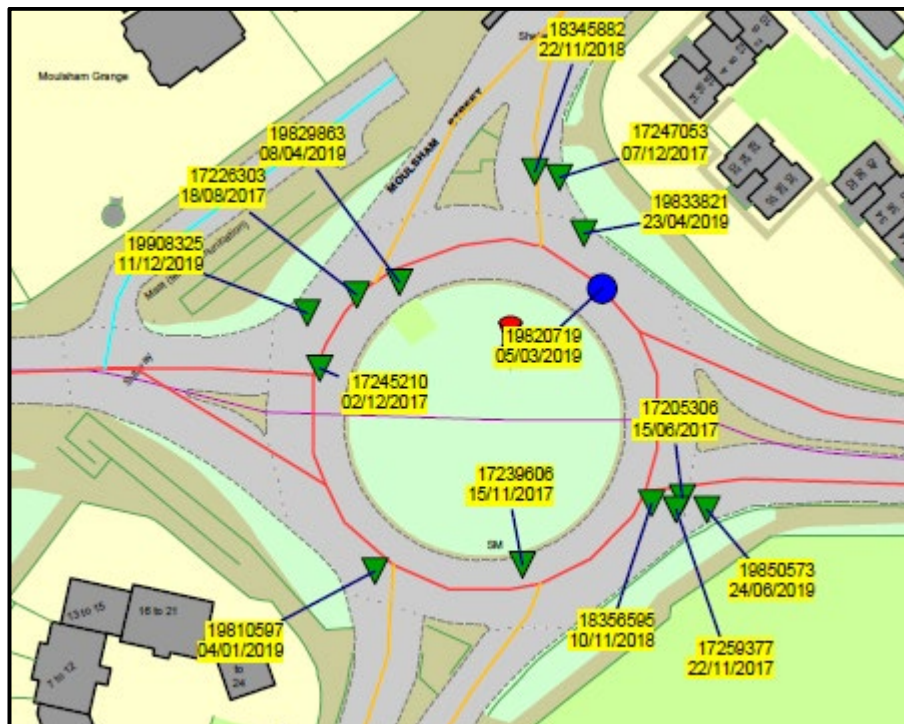
EXECUTIVE SUMMARY

Intervention works:

Design only in current year. Road user origin/destination video surveys required to identify driver behaviour, to explore revision of lane markings to reduce conflict on roundabout and approaches.

Principle: A study of personal injury collisions at the Miami Roundabout indicates that there have been 14 separate collisions within the investigation period, with patterns of three distinct types; rear end shunts on entry to the roundabout (4 incidents), failure to see cyclists/P2W on the circulatory (5), and poor lane discipline on the roundabout leading to side-swipe collisions (3). These collisions predominantly occur in three conflict locations; southbound entry from Moulsham Street, on the south-east quadrant (entry from Princes Road), and on the north-west quadrant (London Road/Moulsham Street).

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A1114 Princes Road/A1114 London Road/B1007 Wood Street/B1007 Moulsham Street
Grid Reference	E 570055, N 205421
Speed Limit	40 mph
Street Lit	Yes
Carriageway type	The Miami Roundabout is marked with three lanes on its northern quadrant, and four lanes on the east and south quadrants, where part-time signals operate. Each arm has three entry lanes, but only Princes Road has two exit lanes. The Wood Street exit arm also provides a slip road into the adjacent Tesco Superstore. Offline cycle facilities are provided, although these require cyclists to use marked cycle tracks (on footways) to access an underpass on the western side or a staggered Toucan crossing on the eastern side.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Four Arm Roundabout with part-time traffic signals
Utilities Present	Potentially – shouldn't affect any scheme proposals
Existing TRO's	Clearway on A1114.

<p>Road Surface</p>	<div> </div> <p>Latest SCRIM data (2019/20) indicates a critical intervention level (red) for A1114 Prince Road westbound, approaching the Toucan crossing, and below investigatory level (yellow) for the roundabout circulatory, London Road (western arm) and Moulsham Street (northern arm). Wood Street (southern arm) is considered to be in sound condition (green).</p>
<p>Signing</p>	<p>The roundabout has chevron signing and diagram 606 keep left sign located directly in front of each approach arm within the roundabout central island. The central island is also constructed with a block paved chevron around its perimeter.</p> <p>A1114 Princes Road - westbound approach: there is a map-type ADS sign straddling the nearside footway at the commencement of the centre island, between the Esso Garage and the Tesco store. Just beyond the Tesco access road is a 'Traffic Signals Ahead' warning sign (TSRGD Diag.543), without a 'Part time signals' sub-plate. Beyond this sign is a signal-controlled Toucan crossing, followed by a 'U-turn' prohibition sign in the centre island. A further set of part-time traffic signals, with associated stop line across the westbound carriageway, are present just prior to the roundabout.</p> <p>B1007 Wood Street – northbound approach: – after passing another signal-controlled Toucan crossing, there is a map-type ADS sign straddling the nearside footway, followed by a further, larger, map-type sign. Approaching the roundabout there is a 40mph Speed Limit terminal sign, together with Clearway signs (TSRGD Diag.642), just prior to a set a part-time traffic signals with associated stop line across the northbound carriageway.</p> <p>A1114 London Road – eastbound approach: just prior to sweeping across the bridge over the main rail line there is a 'Roundabout ahead' warning sign (TSRGD Diag.510) in the nearside verge. Passing over the bridge, a 40mph speed limit repeater sign is affixed to a lighting column. Just prior to the roundabout a map-type ADS sign straddles the nearside footway.</p> <p>B1007 Moulsham Street – southbound approach: there is a map-type ADS sign in the nearside verge at the junction of Moulsham Street and New London Road, and a 'Traffic Signals Ahead warning sign (TSRGD Diag.543) with a 'Part time signals' subplate to the nearside just prior to the</p>

	<p>roundabout, followed by a 40mph Speed Limit terminal sign and Clearway sign (TSRGD Diag.642).</p> <p>Facing road users on the circulatory, there is a 'Traffic Signals Ahead' warning sign (TSRGD Diag.543) with a 'Part time signals' sub-plate on the triangular island between the exit to and entry from Moulsham Street. Part time traffic signals, each with an associated stop line across the circulatory lanes, are located only prior to the entry arm from Princes Road (the eastern quadrant) and the entry arm from Wood Street (the southern quadrant).</p> <p>There is a flag-type direction sign on the island to the offside of each exit arm.</p>		
Road Markings	Generally good and clearly visible on the circulatory and all approaches, other than A1114 Princes Road approaching the Toucan crossing and roundabout, where the road markings are indistinct due to deterioration of the existing high-friction surfacing and poor contrast against the substrate.		
Visibility	There is good forward visibility on each of the approaches to the roundabout, although trees to the nearside of the westbound approach on Princes Road cast shadows creating areas of poor contrast on the road and somewhat obscure the existing road signs. Visibility to the right/circulatory for each of the approaches is restricted only by the height of the roundabout central island and the trees/planting within it.		
Vegetation	<p>There are a number of mature trees, low ornamental shrubs and maintained grass and flower beds within the roundabout centre island.</p> <p>As mentioned above, mature trees along Princes Road adjacent the westbound approach compromise forward visibility to some extent approaching the Toucan crossing and roundabout. It is recommended that these trees are faced back and/or crown lifted to improve visibility.</p>		
Highway Boundary / Land & Ownership Check?	No.	Is the scheme within Highway boundary or on land owned by ECC(*)	N/A (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No.		
Other	Possible reduction of number of lanes on roundabout circulatory and at signal stop lines.		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site:	0	1	13	0	1	14

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
1) Rear end shunts	0	0	4	0	0	5
2) Vehicle v pedal cycle/P2W	0	1	4	0	1	4
3) Side swipe/lane changes	0	0	3	0	0	3

Additional information	None.
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4.0 Site Photographs



Image 1 – Aerial image (from Google) showing road markings, lanes and cycle route (underpass on western arm and Toucan crossing on eastern arm)



Image 2 – A1114 Princes Road, approach to Give Way lines at roundabout.
Note poor conspicuity of road markings and overhanging trees to nearside.



Image 3 – B1007 Wood Street, northbound approach to roundabout (from Google)



Image 4 – A1114 London Road, eastbound approach to roundabout



Image 5 – B1007 Moulsham Street, southbound approach to roundabout



Image 6 – View to right (circulatory) from Give Way line at Princes Road westbound approach



Image 7 – A1114 Princes Road westbound approach to Toucan crossing – poor condition of high-friction surface, poor conspicuity of road markings, and nearside trees compromising forward visibility

5.0 Recommendations

Remedial Measures

Feasibility Study/Design only in current year.

O&D survey to identify traffic movements around/across the roundabout.

Review lane markings on each entry to roundabout, and review circulatory lanes/markings. Consider option to reduce number of vehicular circulatory lanes and provide a marked on-carriageway cycle lane.

Consider possible consequences of improvements at Army & Navy junction.

6.0 Estimated Costs

Scheme Feasibility & Design	£8000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	34%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



Location: A1114 Southend Road/A12 Junction 17 (north)/A130, Howe Green
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site 032 (Single Site)

EXECUTIVE SUMMARY

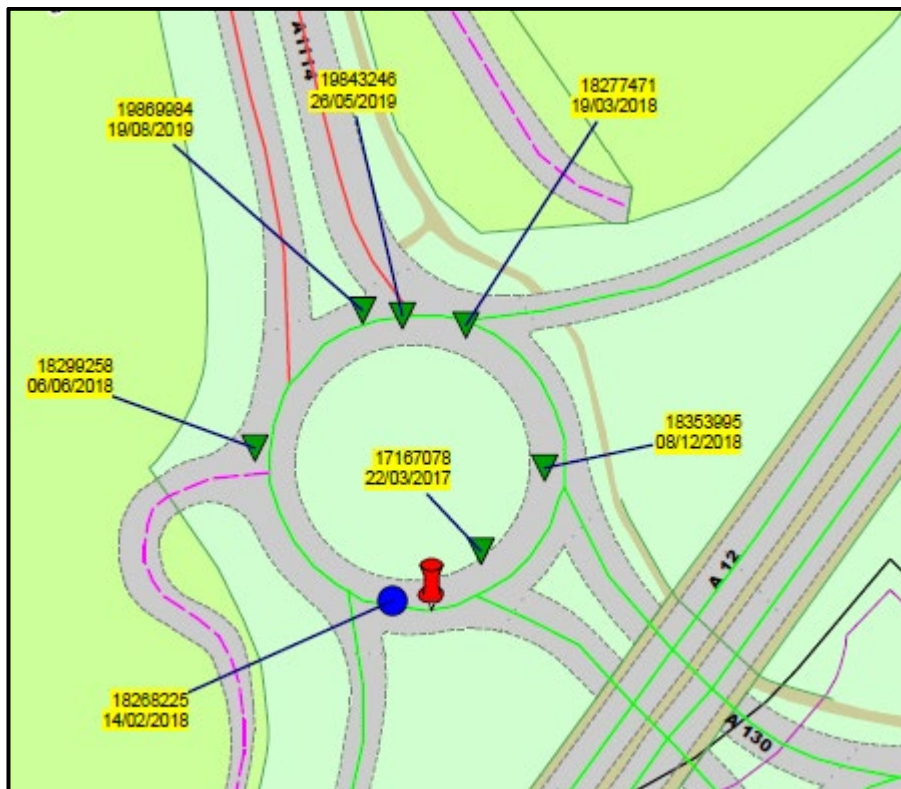
Intervention works:

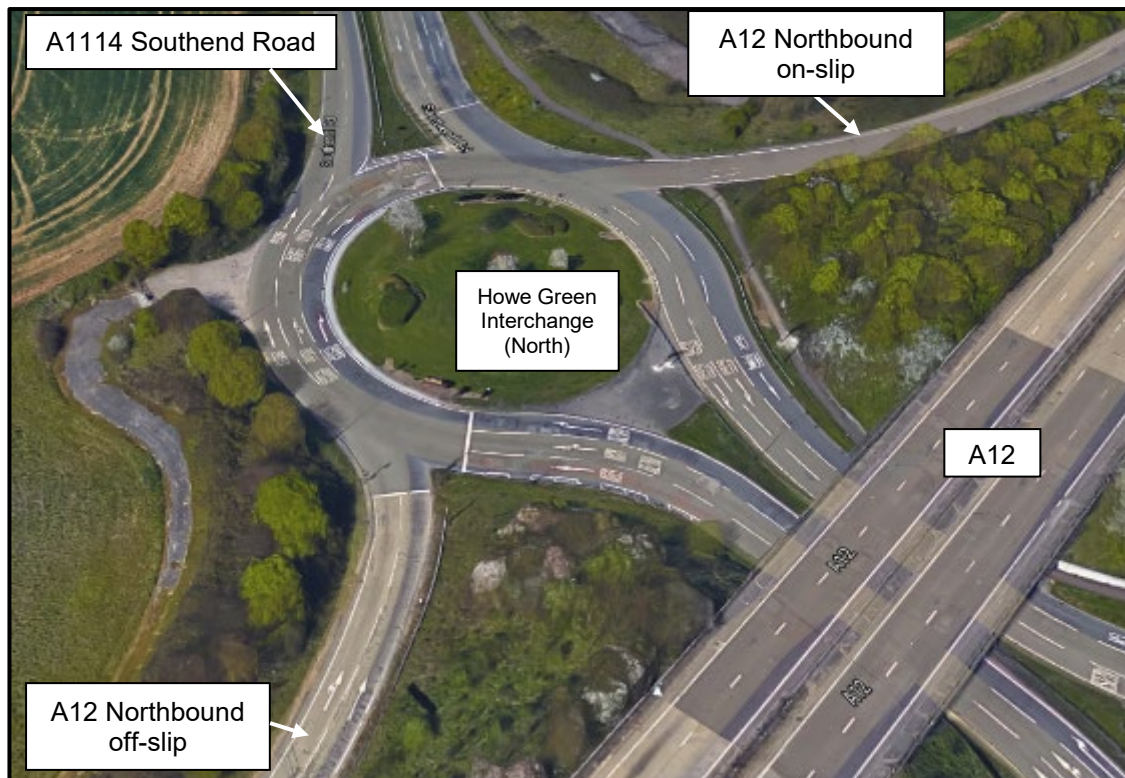
Surveys/design only in current year.

Road user origin/destination video surveys required to identify driver behaviour and lane discipline issues, potentially leading to revised lane markings and lane destination signs to reduce conflict on roundabout.

Principle: A study of personal injury collisions at the northern roundabout at the A12 Howe Green Interchange indicates that there have been 7 separate collisions within the investigation period, with a distinct pattern of lane change/conflict collisions on the northern side, in the vicinity of the A12 Northbound on-slip road, apparently with vehicles in the nearside lane continuing south towards A130(S).

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A1114 Southend Road (Great Baddow) at A12 Junction 17 Howe Green Interchange (north side), including A12 Northbound off-slip road
Grid Reference	E 573944, N 203540
Speed Limit	National Speed Limit
Street Lit	Yes
Carriageway type	The interchange is marked with mostly 3 circulatory lanes, with various lane destination markings depending upon the junction. Each adjoining road is marked with 2 lanes, including the A12 Northbound off-slip road. All intersecting junctions on the north side of the interchange are controlled by linked traffic signals.
Gradient	Level Gradient around Interchange, with main A12 dual carriageway passing overhead
Traffic Management / Existing Traffic Calming	Dumb-bell interchange with traffic signal control at various intersections.
Utilities Present	Potentially – shouldn't affect any scheme proposals
Existing TRO's	None

<p>Road Surface</p>	<div> </div> <p>Latest SCRIM data (2019/20) indicates a below investigatory level (yellow) for the circulatory carriageway at the Interchange. The carriageway surface through the relevant area appears to predominantly be a high-friction material.</p>
<p>Signing</p>	<p>Travelling north through the circulatory section of the interchange, there are 'Traffic Signals Ahead' (TSRGD Diag.543) signs to both sides of the northbound carriageway just before passing under the A12. There are no relevant dedicated lane signs on this side of the interchange, whereas there are on the southbound side.</p> <p>Approaching along the A12 Northbound off-slip road, there are 'Traffic Signals Ahead' warning signs in both nearside and offside verges approximately midway along the slip road, followed by a further pair of 'Traffic Signals Ahead' warning signs with '100 yds' sub-plates, accompanied by 'SLOW' markings in each lane. Beyond these, there is a large map-type ADS sign in the nearside verge and a yellow-bordered chevron sign (TSRGD Diag.515) in the offside verge as the slip road sweeps to the left towards the traffic signals and stop line at the interchange. The primary traffic signals either side of the stop line are duplicated by high-level signal heads. There is a further yellow-bordered flexible chevron sign, together with a 'Turn Left' arrow (TSRGD Diag.606) and a secondary traffic signal head, on the circulatory centre island directly opposite the slip road.</p> <p>On the southbound approach from the A1114 Southend Road there are again 'Traffic Signals Ahead' warning signs to both sides of the carriageway, followed by a large map-type ADS sign in the nearside verge. The traffic signals at the interchange are clearly visible; the primary signals either side of the stop line are duplicated by high-level signal heads. There are two yellow-bordered chevron signs, either side of a 'Turn Left' arrow sign (TSRGD Diag.606), and a secondary traffic signal head, on the circulatory centre island facing southbound traffic.</p> <p>All road signs were clearly visible.</p>

Road Markings	<p>Negotiating the circulatory northbound, passing under the A12 the three lanes are marked as:</p> <ul style="list-style-type: none"> • Nearside lane: Ahead lane arrow, and 'A1114' • Middle lane: Ahead/Right lane arrow, and 'A1114' and 'A12(N)' • Offside lane: Right lane arrow, and 'A12(N)'. <p>The three lanes are so marked on the northbound carriageway just before passing under the A12, where they are accompanied by 'Traffic Signals Ahead' warning signs to both the nearside and offside, and repeated just prior to the stop line at the traffic signals at the adjoining A12 Northbound off-slip.</p> <p>Passing the adjoining A12 Northbound off-slip, the three lanes are again marked as:</p> <ul style="list-style-type: none"> • Nearside lane: Ahead lane arrow, and 'A1114' • Middle lane: Ahead/Right lane arrow, and 'A1114' and 'A12(N)' • Offside lane: Right lane arrow and 'A12(N)'. <p>Just before the exit to the A1114 Southend Road northbound those lane markings are repeated again as the nearside lane becomes a lane drop to the A1114, leaving two lanes at the traffic signals stop line prior to the adjoining A1114 southbound. At the stop line, the nearside lane is marked with an Ahead lane arrow and the offside lane is marked with an Ahead/Right lane arrow.</p> <p>The lane marking lines are all clearly visible, however some of the arrow/worded markings are somewhat faded and would benefit from being refreshed.</p> <p>Continuing around the circulatory and passing back under the A12 heading southbound through the interchange, there are three lanes (with accompanying dedicated lane ADS signs to the nearside and offside), marked as:</p> <ul style="list-style-type: none"> • Nearside lane: Ahead lane arrow, and 'Howe Green' • Middle lane: Right lane arrow, and 'A130' • Offside lane: Right lane arrow, and 'A130' and 'A12(S)'. <p>Approaching the interchange on the A1114 Southend Road (southbound), the two-lane carriageway is marked with yellow bar markings, widening to three lanes approaching the stop line at the traffic signals. These lanes are marked with lane arrows thus:</p> <ul style="list-style-type: none"> • Nearside lane: Ahead/Left lane arrow • Middle lane: Ahead lane arrow • Offside lane: Ahead lane arrow <p>A12 Northbound off-slip road – this is marked with two lanes, the nearside lane with lane arrows indicating Ahead/Left, and the offside lane arrow indicating Ahead only. All road markings clearly visible.</p>
Visibility	<p>There is good forward visibility on each of the approaches to the roundabout. Visibility to the right from each approach is not an issue, due to the approach roads and circulatory all being signal controlled. All traffic signal heads are clearly visible.</p>

Vegetation	There is well established vegetation growth on all approaches to the interchange and on the circulatory central island itself, however this provides a good background contrast for the various chevron signs and traffic signals on the island.		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes– some amendment to road markings/signs may be required on the A12 Northbound off-slip road (Highways England) (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site:	0	1	6	0	1	12

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Lane change/conflict collisions	0	0	3	0	0	8

Additional information	It should be acknowledged that improvements at the roundabout may also necessitate revisions to the signs/lane markings on the A12 Northbound off-slip, to be implemented in conjunction with Highways England.
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4.0 Site Photographs



Image 1 – northbound approach at interchange (on circulatory)



Image 2 – circulatory northbound, between adjoining A12 Northbound off-slip and exit to A1114



Image 3 – circulatory, at stop line prior to A1114 southbound joining/A12 on-slip



Image 4 – circulatory, southbound, with dedicated lane markings and signs



Image 5 – A1114 southbound approach to Howe Green (N) interchange



Image 6 – A12 Northbound off-slip road



Image 7 – A12 Northbound off-slip road, approaching stop line at interchange

5.0 Recommendations

Remedial Measures

Video or Automatic Origin/Destination Surveys to determine driver behaviour and lane discipline, with a view to revise lane markings on roundabout circulatory and approaches, including dedicated lane ADS signs/markings (particularly on the A12 Northbound off-slip, in conjunction with Highways England), to improve lane discipline on the circulatory.

6.0 Estimated Costs

Surveys/Design only in current year	£6500
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	41%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Site Report Essex Highways Casualty Reduction Site Report 2021/22



Location: A1114 London Road/A1016 Westway roundabout, Widford
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site 043 (Single Site)

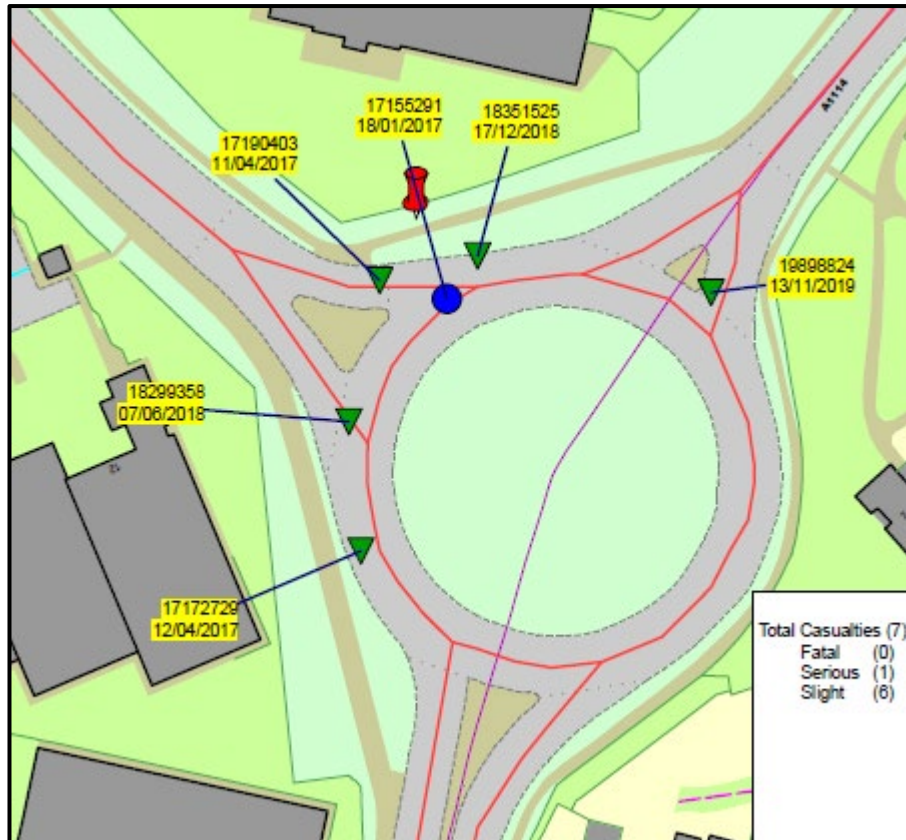
EXECUTIVE SUMMARY

Intervention works:

Revisions to road markings and lane destination signs, including nearside 'lane drop' marking into Westway, to improve lane discipline and alleviate conflict on roundabout.

Principle: A study of personal injury collisions at the roundabout at the junction of A1114 London Road and A1016 Westway (known locally as the 'Britvic roundabout') indicates that there have been 6 separate collisions within the investigation period, with a pattern of poor lane discipline leading to conflict collisions on the north-western quadrant, in the vicinity of the entry to/exit from Westway. One of these incidents resulted in serious injury to a pedal cyclist, another two incidents involved P2Ws.


1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A1114 London Road, Widford/A1016 Westway/A1114 London Road, Chelmsford
Grid Reference	E 569479, N 205287
Speed Limit	40 mph
Street Lit	Yes
Carriageway type	<p>A1114 London Road, Widford is a dual carriageway with 2 lanes in each direction, linking to the A414 Greenbury Way and the A12 at Junction 15.</p> <p>A1060 Westway is an urban single carriageway serving the adjacent industrial and commercial areas and central Chelmsford, with one lane northbound widening to 2 lanes at junctions and 2 lanes southbound from Robjohns Road.</p> <p>A1114 London Road is a single carriageway road with one lane in each direction, separated by centre hatching.</p> <p>All are PR1 roads and are significant feeder routes into and across central Chelmsford.</p>
Gradient	Generally level gradient with slight uphill approach from Westway, which may contribute to slower entry onto the roundabout for LGVs.
Traffic Management / Existing Traffic Calming	Three Arm Roundabout
Utilities Present	Potentially – shouldn't affect any scheme proposals

Existing TRO's	40mph speed limit; Clearway (all three approaches and roundabout)
Road Surface	 <p>Latest SCRIM data (2019/20) indicates critical intervention level (red) for the circulatory part of the roundabout, with below investigatory level (yellow) for the northbound and eastbound approaches.</p>
Signing	<p>A1114 northbound – there is a map-type ADS sign in the nearside verge. There are no other warning signs or dedicated lane ADS signs on this approach.</p> <p>A1060 Westway southbound – there is a map-type ADS sign in the nearside verge near the junction with the service road to the adjacent vehicle dealerships. There are no other warning signs or dedicated lane ADS signs on this approach.</p> <p>A1114 London Road south-westbound – there is a map-type ADS sign to the nearside, on the sweeping left-hand bend approaching the roundabout. There are no other warning signs or dedicated lane ADS signs on this approach</p> <p>There is a flag-type direction sign on the splitter island at each exit arm, and a chevron sign and 'Turn Left' sign (TSRGD Diag.606) are located on the roundabout centre island opposite each entry arm.</p>
Road Markings	<p>A1114 northbound – a two-lane dual carriageway approach, marked with edge of carriageway lines to both sides and lanes separated by centre hazard warning lines. One 'SLOW' marking in each lane approximately 40m prior to the roundabout. All markings clearly visible.</p> <p>A1060 Westway southbound – a single carriageway with 2 lanes approaching the roundabout, separated by lane marking lines. Two 'SLOW' markings in each lane prior to the entry deflection at the roundabout. All road markings very worn and not conspicuous.</p> <p>A1114 London Road south-westbound – a single carriageway with edge of carriageway markings and centre hatching, reducing to centre hazard warning line approaching the roundabout. Widens to two lanes approaching the roundabout Give Way line. Centre lines faded and indistinct (from centre hatching).</p> <p>Roundabout circulatory - two lanes marked passing the Westway arm, together with 'Keep Clear' markings across both circulatory lanes at the entry from Westway. All clearly visible.</p>

	There are no lane destination markings or arrows on any approach or on the circulatory.		
Visibility	<p>There is good forward visibility, and to the right, at each entry to the roundabout, however it can be difficult to assess the intended direction of road users on the circulatory, especially at Westway.</p> <p>Approaching the roundabout from A1114 London Road (south-west bound) forward visibility through the sweeping left-hand bend is somewhat limited by a number of mature established trees to the nearside.</p>		
Vegetation	<p>The roundabout centre island is planted with mature trees and maintained ornamental shrub beds and grass, set back to provide an appropriate clear unobstructed view from the Westway entry arm.</p> <p>As described above, tree branches alongside A1114 London Road limit forward visibility towards the roundabout for south-westbound road users.</p>		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site:	0	1	5	0	1	6

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Lane change/conflict collisions on north-western quadrant	0	1	4	0	1	5

Additional information	None.
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4.0 Site Photographs



Image 1 – A1114 London Road, Widford, northbound approach



Image 2 – A1114 northbound – forward view at 'Give Way' line, clear mutual view to/from A1060 Westway entry arm (dark van)



Image 3 – A1060 Westway, southbound uphill approach to roundabout



Image 4 – A1114 London Road south-westbound approach to roundabout

5.0 Recommendations

Remedial Measures

Provide 'lane drop' markings on the circulatory into A1060 Westway, reducing the circulatory to one lane passing that arm, to improve lane discipline and alleviate confusion for road users emerging from Westway onto the roundabout.

Review and revise lane markings on entry arms and circulatory accordingly; provide dedicated lane ADS signs as appropriate, and advance warning signs/'Give Way' signs on Westway approach.

Refresh road markings on Westway, between j/w Robjohns Road and the roundabout.

Face back/crown lift trees to nearside on A1114 London Road (south-westbound approach) and Westway (southbound approach), to improve forward visibility to roundabout Give Way lines.

6.0 Estimated Costs

Total Scheme Design and Implementation	£36500
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	41%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings}}{\text{Scheme Cost}} \times 100$$

Assumptions:

Average annual collision cost (£)
Collisions treated
Casualties treated
Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	1	3
0	1	3
	3	

Source: STATS19, Transport Analysis Guidance - WebTAG

Estimated cost of recommended remedial measures

(Including Design, Audit and Traffic Management)

As per recommendations in Section 6

£36,500.00

Collision saving produced by proposed treatment (%)

41

%FYRR fatal
%FYRR serious
%FYRR slight

0
97
30

Total % FYRR 126

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

1.64 or **0.55** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

1.64 or **0.55** each year

Site Report Essex Highways Casualty Reduction Site Report 2021/22



Location: A1060 Parkway/Rainsford Road junction
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site 061 (Single Site)

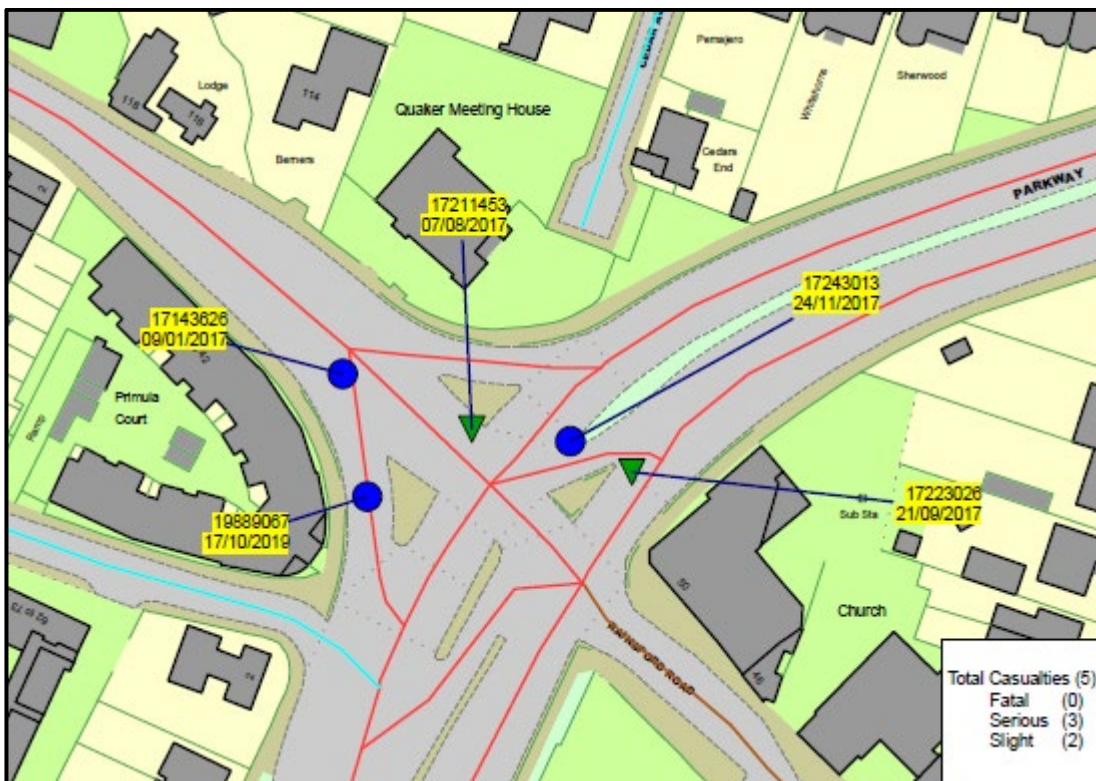
EXECUTIVE SUMMARY

Intervention works:

Provision of louvres on pedestrian signal heads to resolve 'see-through' issue.

Principle: A study of personal injury collisions at the junction of A1060 Parkway and Rainsford Road indicates that there have been 5 separate collisions within the investigation period, of two collision types; rear end shunts at the signals (one of which involved a cyclist, sustaining slight injury) and vehicle/pedestrian conflicts, resulting in serious injury to the pedestrian in each case.

1.0 Site Plan with Collision Plot

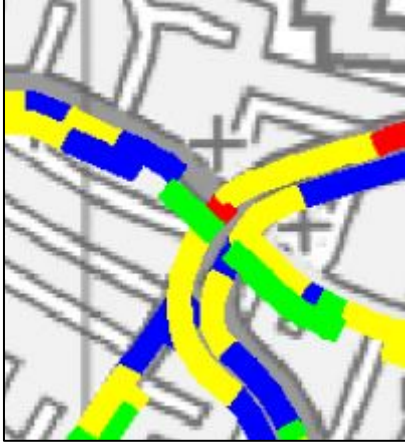




Note: worn anti-skid surfacing is evident on Parkway approaches to traffic signals

2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A1060 Parkway/A1016 Parkway, A1060 Rainsford Road (W), Chelmsford
Grid Reference	E 570154, N 207276
Speed Limit	40mph on Parkway and Rainsford Rd (W), 30mph on Rainsford Rd (E)
Street Lit	Yes
Carriageway type	<p>Complex signal-controlled junction of urban PR1 roads.</p> <p>A1060 Parkway – multi-lane dual carriageway, with a kerbed central reservation incorporating ornamental planting beds. Northbound - two lanes in a segregated left-turn, three lanes ahead northbound, and a further two lanes in a segregated right-turn lane. Southbound – three lanes ahead (nearside also left turn), with a segregated right turn-lane.</p> <p>A1060 Rainsford Road (W) – eastbound approach – three lanes ahead (offside two lanes both turn right onto Parkway South), with segregated left turn lane onto Parkway North. Rainsford Road (E) – one way eastbound.</p>
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	<p>Four arm signal controlled junction on a dual carriageway, with segregated (signalled) turn lanes.</p> <p>Pedestrian crossing phases across A1060 Rainsford Road (W) and A1016 Parkway (north side of junction only).</p>
Utilities Present	Potentially – shouldn't affect any scheme proposals
Existing TRO's	<p>40mph Speed Limit and Clearway on Parkway.</p> <p>U-turn prohibition on A1016 Parkway (southbound) at right-turn lane.</p>

Road Surface	<p>Poor condition in Parkway – existing high-friction surface stripped in wheel tracks on northbound approach to stop lines and in southbound right-turn lane. Good condition high-friction surfacing on approach to stop lines in Rainsford Road.</p>  <p>Latest SCRIM data (2019/20) indicates a below investigatory level (yellow) and critical (red) for the Parkway approaches to the junction.</p>		
Signing	<p>A1060 Parkway northbound - dedicated lane ADS sign on the approach to the junction.</p> <p>A1060 Rainsford Road (W) eastbound approach – stack-type direction sign for the junction ahead, 40mph Speed Limit terminal sign & Clearway sign, and a further stack-type direction sign for various city centre car parks.</p> <p>A1016 Parkway southbound – two map-type direction signs for the junction ahead.</p> <p>There are 40mph repeater signs on lighting columns at regular intervals, and flag-type direction signs at appropriate locations on islands at the junction.</p> <p>All traffic signal heads, both vehicular and pedestrian, are clearly visible, however several ‘see-through’ issues were identified where a waiting pedestrian can see a ‘green man’ signal beyond a ‘red man’ signal.</p>		
Road Markings	All in reasonable condition, although poor conspicuity of lane markings on Parkway due to lack of contrast against deteriorating high-friction surface.		
Visibility	There is good forward visibility on each of the approaches to the junction, and unobstructed view of all signal heads.		
Vegetation	There is well established ornamental vegetation in the central reservation; this appears to be maintained such that it does not obstruct intervisibility at the junction.		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	<p>Yes</p> <p>(*if the land is not highway the scheme should only proceed on feasibility design & land acquisition/dedication stage)</p>

Does the scheme require change to an existing TRO or Speed Limit	No
Other	None

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site:	0	3	2	0	3	2

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
1) Vehicle v pedestrian	0	2	0	0	2	0
2) Rear end shunts at signals	0	1	2	0	1	2

Additional information	None.
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4.0 Site Photographs



Image 1 – A1060 Parkway, northbound approach to junction.
Note deterioration of high-friction surfacing and poor conspicuity of road markings.



Image 2 – A1016 Parkway, southbound approach (right-turn lane into Rainsford Road (W))



Image 3 – A1060 Rainsford Road (W), eastbound approach



Image 4 – Pedestrian crossing, Parkway (N) - pedestrian signal head 'see-through'



Image 5 – A1060 Rainsford Road (W) – looking south to north –
Pedestrian signal head 'see-through'



Image 6 – A1060 Rainsford Road (W) – looking north to south –
Pedestrian signal head 'see-through'

5.0 Recommendations

Remedial Measures

Install louvres on relevant pedestrian signal heads.

6.0 Estimated Costs

Total Scheme Design and Implementation	£3500
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	42%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	2	0
0	2	0
	3	

Source: STATS19, Transport Analysis Guidance - WebTAG

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

As per recommendations in Section 6

£3,500.00

Collision saving produced by proposed treatment (%)

42

%FYRR fatal

0

%FYRR serious

2064

%FYRR slight

0

Total % FYRR 2064

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

0.84 or **0.28** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

0.84 or **0.28** each year

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



Location: A1060 Parkway/Victoria Road South (Bellmead Roundabout)
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site 087 (Single Site)

EXECUTIVE SUMMARY

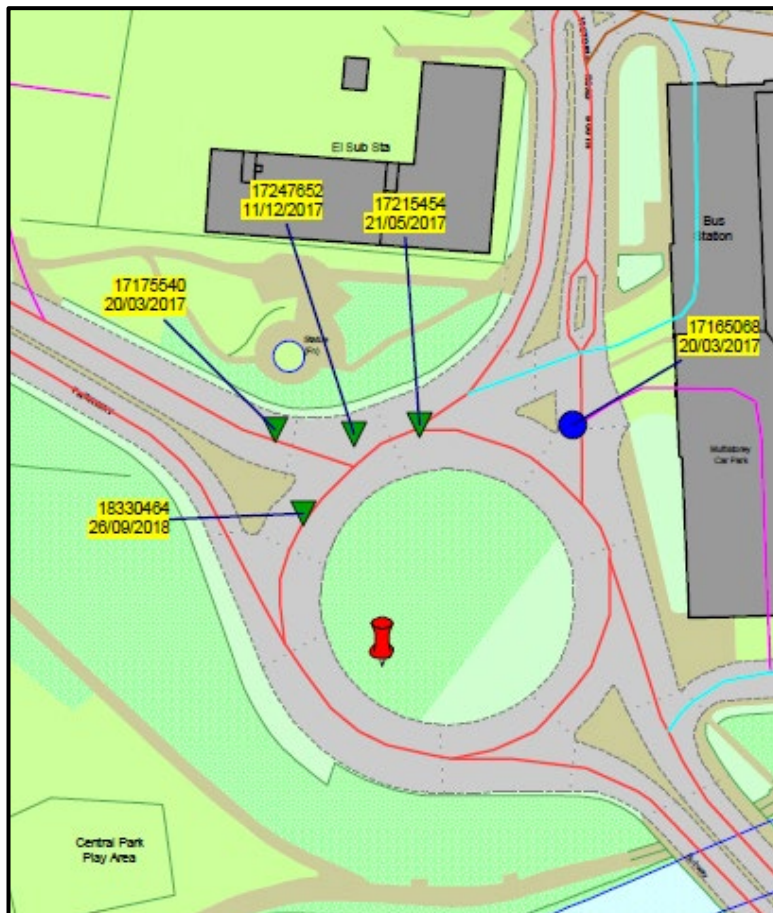
Intervention works:

Surveys/design only in current year.

Road user origin/destination video surveys required to identify driver behaviour, to explore revision of lane markings to reduce conflict on roundabout and approaches.

Principle: A study of personal injury collisions at the roundabout junction of Parkway and Victoria Road South indicates that there have been 5 separate collisions within the investigation period, all on the north-western quadrant (Parkway eastbound/Victoria Road South). Of these, one involved a cyclist on the circulatory not seen by an emerging driver; two other collisions may also be attributed to poor lane discipline or conflict/lane change manoeuvres approaching Victoria Road South. One nose-to-tail shunt collision occurred while entering the roundabout from Victoria Road South and resulted in serious injury to a motorcyclist; another nose-to tail shunt resulted in slight injury.

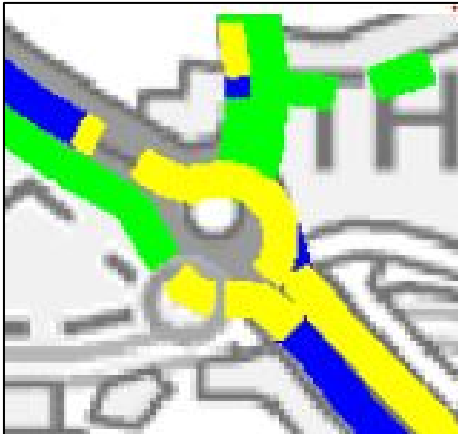
1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A1060 Parkway/A1099 Victoria Road South/Bellmead, Chelmsford
Grid Reference	E 570578, N 206742
Speed Limit	40mph on Parkway, 30mph on Victoria Road South
Street Lit	Yes
Carriageway type	<p>A1060 Parkway is a busy urban distributor road, a dual carriageway with 2 lanes in each direction separated by a kerbed central reservation, widening to three lanes at the approaches to the roundabout and with a segregated left turn lane travelling from east to west. Part-time traffic signals operate on the north-west quadrant, controlling traffic on the circulatory and on the Parkway eastbound entry arm.</p> <p>A1099 Victoria Road South also has three lanes on the entry arm to the roundabout, complicated by the presence of a bus lane crossing the southbound lane, and the Market service exit and the 2-lane exit from the adjacent multi-storey car park.</p> <p>Both roads are classified PR1.</p>
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Three Arm Roundabout
Utilities Present	Potentially – shouldn't affect any scheme proposals
Existing TRO's	40mph Speed Limit; Clearway on Parkway

<p>Road Surface</p>	 <p>Latest SCRIM data (2019/20) indicates below investigatory level (yellow) for the Parkway approaches to and circulatory carriageway of the roundabout. Victoria Road South is recorded as being in sound condition (green).</p>
<p>Signing</p>	<p>A1060 Parkway westbound approach – there is a map-type direction in the nearside verge, followed by a stack-type sign for city centre car parks with a 40mph speed limit repeater and a clearway sign affixed to its signpost. In the offside verge adjacent is a rather faded triangular ‘Roundabout Ahead’ warning sign (TSRGD Diag.510) with a speed camera sign beneath. Just prior to the bridge over the River Can there is a dedicated lane ADS sign to the nearside. At the roundabout there is a ‘Traffic Signals Ahead’ warning sign (TSRGD Diag.543) with ‘Part time signals’ subplate to the offside, in the central reservation. Directly opposite the entry arm, in the roundabout centre island, is a ‘Queuing traffic’ warning sign (TSRGD Diag.584) with ‘Queues likely’ subplate, to the left of a chevron sign (TSRGD Diag.515) with a ‘Turn Left’ sign (TSRGD Diag.606).</p> <p>Part-time traffic signals are present on the circulatory, just prior to the Parkway eastbound entry arm.</p> <p>A1060 Parkway eastbound approach (from Google Streetview July 2019) - there is a map-type ADS sign in the nearside verge, co-located with a dedicated lane ADS sign, followed by another map-type ADS sign for various city centre car parks. Just prior to the roundabout is a set of part-time traffic signals; there is a chevron sing with ‘Turn Left’ sign located on the roundabout centre island directly opposite the entry arm.</p> <p>A1099 Victoria Rad South southbound approach – passing Market Road, there is a map-type ADS sign in the nearside verge, set back behind the wide footway, followed by a stack-type ADS sign for city centre car parks. Both these signs are somewhat obscured by low branches from nearby trees. At the commencement of a centre island, where the bus lane crosses the southbound lane, are 40mph Speed Limit terminal signs and Clearway signs (TSRGD Diag.642) to both sides. The ends of the island are marked with reflective bollards with ‘Pass either side’ signs (TSRGD Diag.611). On the roundabout centre island, directly opposite the entry arm, is a chevron sign with a ‘Turn Left’ sign, with a ‘Traffic Signals Ahead’ warning sign and</p>

	<p>'Part time signals' subplate to its right and a 'Queuing Traffic' warning sign with 'Queues likely' subplate to its left.</p> <p>There are flag-type direction signs on the centre islands beside each Parkway exit arm from the roundabout, but not on the exit arm to Victoria Road South, where there are 'No Entry' signs (TSRGD Diag.616) with 'Except buses' subplates at the bus lane crossing the southbound lanes.</p>
Road Markings	<p>Parkway eastbound approach (from Google Streetview) – two lanes with centre lane markings, widening to three lanes approaching the roundabout, with the nearside lane becoming a segregated left turn lane. The nearside lane is marked with a 'Left turn' lane arrow, the centre and offside lanes marked with an 'Ahead' lane arrow. At the roundabout the road widens to three lanes, the nearside lane becoming a segregated left turn lane (in effect, continuing ahead onto Parkway), the middle lane marked with an 'Ahead/Right' lane arrow and the offside lane marked with a 'Turn Right' lane arrow.</p> <p>Victoria Road South southbound approach – marked as two lanes, one passing either side of a centre island; the nearside lane is marked with an 'Ahead/Right' lane arrow, and the offside lane is marked with a 'Turn Right' lane arrow. These lane arrows are repeated after the yellow-box marking where the bus lane crosses the southbound lane. At this point, the service exit from the Market and two exit lanes from the multi-storey car park adjoin; the offside exit lane joins the 'Ahead/Right' lane with a 'Give Way' line and the nearside exit lane becomes the nearside lane at the roundabout, marked with a 'Turn Left' lane arrow.</p> <p>All road markings were clearly visible, apparently having been refreshed recently.</p> <p>Roundabout circulatory – on the south-west quadrant, marked as two lanes on the circulatory with the segregated left turn lane to the nearside. Passing the Parkway (westbound) exit arm the circulatory is marked with three lanes to the stop line for the part-time traffic signals, with lane arrows marking the nearside lane as 'Ahead', the middle lane as 'Ahead/Right' and the offside lane as 'Turn Right'. The exit arm to Victoria Road South is marked as two lanes, with the bus lane diverging to the offside to cross the southbound entry lanes. There are four 'KEEP CLEAR' markings across the full width of the circulatory at the Victoria Road South entry arm, although these are worn and indistinct; other circulatory markings are clear and visible.</p>
Visibility	<p>There is good forward visibility on each of the approaches to the roundabout. Visibility to the right for each of the approaches is similarly good, although circulatory speeds may be high resulting in hesitation for joining traffic.</p>
Vegetation	<p>Well established trees, shrubs and ornamental flower beds within the roundabout centre island; trees to the nearside of Victoria Road South would benefit from facing back/crown lifting to improve forward visibility and alleviate obscuration of signs.</p>

Highway Boundary / Land & Ownership Check?	N/A	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site:	0	1	4	0	1	4

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Lane discipline/conflict on circulatory	0	0	3	0	0	3

Additional information	None.
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4.0 Site Photographs



Image 1 – A1060 Parkway westbound approach.
Note faded 'Roundabout Ahead' warning sign in central reservation.



Image 2 – A1060 Parkway westbound approach to roundabout



Image 3 – Roundabout circulatory – three lanes and stop line on northwest quadrant



Image 4 – A1099 Victoria Road South, southbound approach
Trees obscuring signs to nearside



Image 5 – Victoria Road South, southbound approach, with
bus lane crossing from offside and market/car park exits merging to nearside

5.0 Recommendations

Remedial Measures

Surveys to identify driver behaviour, conflict points and lane discipline issues.
Review and revise arrangement of dedicated lane markings on circulatory and approach arms, and potentially in Victoria Road South, to improve lane discipline.

6.0 Estimated Costs

Surveys/Design only in current year	£6500
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	41%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



Location: A130 Essex Regiment Way/Little Waltham Road
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site R027 (Rural Site)

EXECUTIVE SUMMARY

Intervention works:

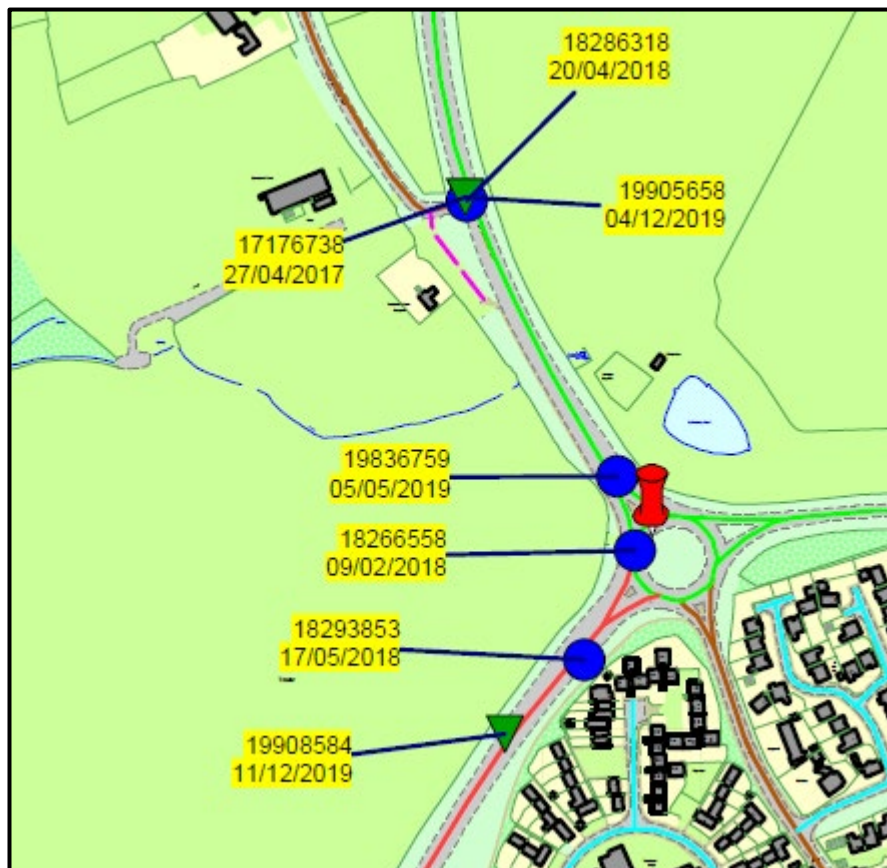
Design only in current year.

Enhanced 'No Right Turn' signs on southbound approach to junction, and potential TRO to prohibit right turns out from Little Waltham Road, together with associated signs and road markings to enforce new prohibition. Provide 'Side Road Ahead' warning sign on northbound approach to junction, face back vegetation to improve visibility.

Principle: A study of personal injury collisions at this location indicates that there have been 3 incidents involving turning movements into or out of Little Waltham Road, including one car turning right across the central bus lane in contravention of the existing right turn prohibition, resulting in serious injury to a motorcyclist.

There is no identifiable pattern amongst the incidents in the vicinity of the A130/Pump Lane roundabout.


1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A130 Essex Regiment Way, Little Waltham Road
Grid Reference	E 571872, N 209907
Speed Limit	National Speed Limit
Street Lit	No
Carriageway type	A130 Essex Regiment Way – PR1 road, single carriageway with a central bus lane (motorcycles and taxis permitted), part of the frequent bus route between Chelmer Valley Park & Ride site and Chelmsford city centre. Little Waltham Road – single carriageway, unclassified rural ‘No Through Road’, serving a small number of private properties, agricultural and light commercial premises. Provides PRoW link (bridleway, cycle route) to Mill Lane, Broomfield. Appears to be used for informal/ad hoc parking.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Uncontrolled side road junction; no traffic calming measures present
Utilities Present	Potentially – shouldn’t affect any scheme proposals
Existing TRO’s	Prohibited Right Turn (A130 Essex Regiment Way)

<p>Road Surface</p>	 <p>Latest SCRIM data (2019/20) indicates the A130 Essex Regiment Way is in sound condition (green). No SCRIM data is available for Little Waltham Road.</p>
<p>Signing</p>	<p>Travelling north on Essex Regiment Way from the roundabout at Pump Lane/White Hart Lane, there are no relevant road signs for road users.</p> <p>Travelling south on Essex Regiment Way from the Beaulieu Park roundabout (Armistice Avenue/Regiment Gate), there are signs depicting the offside bus lane, permitting buses, motorcycles and taxis. Shortly after the commencement of the bus lane, there is a 'No Excuses' road safety campaign sign in the nearside verge, followed by a LED variable message sign (at the time of site visit, showing a Covid safety message). Approaching the junction with Little Waltham Road (to the offside) is a temporary informatory sign (black text on yellow) relating to the removal of the Army & Navy flyover. Directly opposite the junction is a 'No Right Turn' regulatory sign (TSRGD Diag.612), beyond which is another bus lane sign and then a map-type ADS sign. These signs in combination significantly reduce the conspicuity of the regulatory sign (see Image 3 below).</p> <p>Little Waltham Road – small 'No Through Road' sign (TSRGD Diag.816) on each street nameplate either side of the junction. Travelling southbound, there is a chevron sign (TSRGD Diag.515) warning of the deviation of route at the sharp left-hand bend prior to the junction, and a rather faded 'Give Way' warning sign accompanying the corresponding inverted triangle marking at the junction with Essex Regiment Way.</p>
<p>Road Markings</p>	<p>Essex Regiment Way at this location has one lane northbound and two lanes southbound, the offside southbound lane being a dedicated bus lane, demarcated by continuous white lines to both sides and red-coloured surfacing.</p> <p>The northbound lane is marked with 'Ahead' lane arrows at regular intervals; there is an 'edge of carriageway' continuous white line, changing to a broken white line where necessary along the nearside kerb, with a 'Give Way' marking across the junction with Little Waltham Road. The central bus lane, to the offside of the northbound lane, is delineated by a continuous white line.</p>

	<p>The nearside southbound lane is similarly marked, with 'Ahead' lane arrows at regular intervals and an edge of carriageway white line to the nearside. The carriageway widens to two southbound lanes at the approach to the roundabout, in addition to the offside bus lane. At the roundabout, the nearside lane is marked with a 'Turn Left' lane arrow and the middle lane with an 'Ahead/Right' lane arrow.</p> <p>The offside southbound lane is clearly marked as a bus lane, with 'Ahead' lane arrows accompanied by 'BUS LANE' markings on the red-coloured surfacing; continuous white lines define both sides of the bus lane.</p> <p>The nearside southbound lane</p> <p>Little Waltham Road is marked with a centre hazard warning line (long lines with short gaps), and a 'Give Way' inverted triangle marking together with 'Give Way' broken white lines across the junction with Essex Regiment Way.</p> <p>All road markings were in good condition and clearly visible.</p>		
Visibility	<p>There is good forward visibility on A130 Essex Regiment Way. Visibility to the right for road users emerging from Little Waltham Road is somewhat restricted by the adjacent hedgerow.</p>		
Vegetation	<p>There is well established vegetation growth on the western side of Essex Regiment Way, both sides of the junction. Visibility to the right for emerging road users could be substantially improved by facing back the vegetation.</p>		
Highway Boundary / Land & Ownership Check?	N/A	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	Yes – recommended prohibition of right turn from Little Waltham Road		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Information	Collision	COLLISIONS			CASUALTIES		
		FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site		0	4	3	0	4	8

Identified Collision Pattern(s) at Cluster Site	Collision	COLLISIONS			CASUALTIES		
		FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Collisions involving vehicles turning into or emerging from the side road junction.		0	1	2	0	1	2

Additional information	None.
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4.0 Site Photographs



Image 1 – A130 Essex Regiment Way northbound, approaching Little Waltham Road



Image 2 – A130 Essex Regiment Way (northbound) junction with Little Waltham Road



Image 3 – A130 Essex Regiment Way southbound (Little Waltham Road to offside)
Note poor conspicuity of 'No Right Turn' sign against background



Image 4 – Little Waltham Road, travelling southbound towards junction



Image 5 – Little Waltham Road, junction with Essex Regiment Way



Image 6 – illustration of view to right from Little Waltham Road
(image from Google Streetview, dated April 2019)

5.0 Recommendations

Remedial Measures

Design, and preparation for potential TRO, in current year only.
Improve/enhance conspicuity of 'No Right Turn' signs on Essex Regiment Way southbound.
Introduce Right Turn prohibition/enforce left turn out from Little Waltham Road.
Trim back vegetation to improve visibility on emerging from Little Waltham Road.
Provide 'Side Road Ahead' warning sign on northbound approach.

6.0 Estimated Costs

Feasibility Study/Design only	£6500
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	42%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



Location: Waltham Road/Boreham Road, Boreham
District: Chelmsford
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: Site R116 (Rural Site)

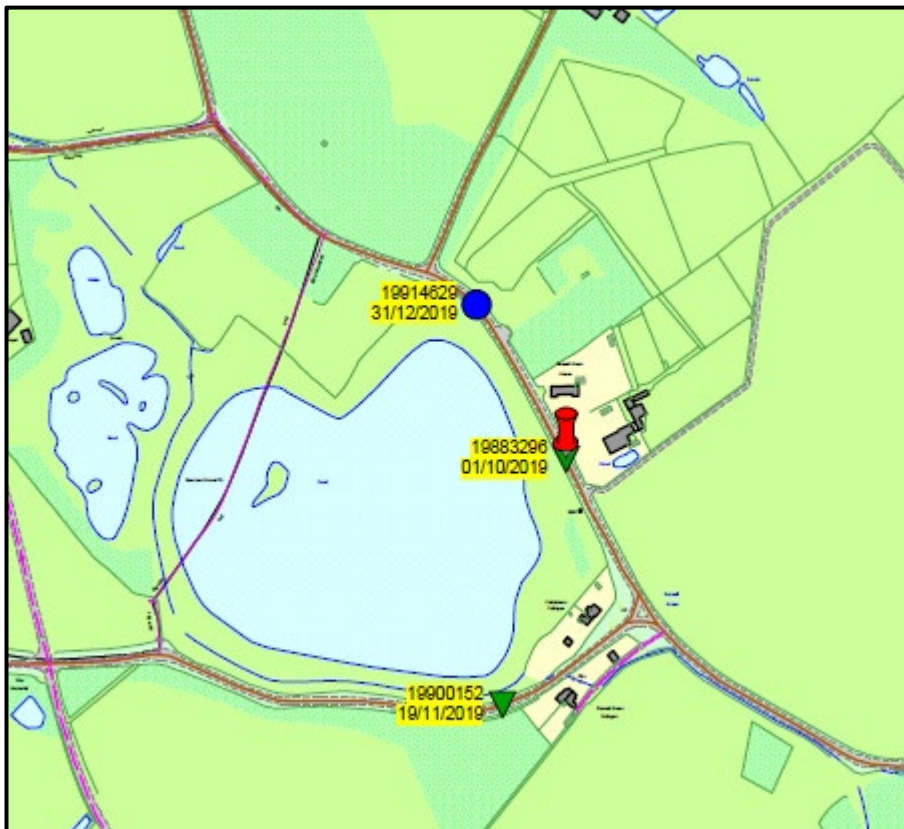
EXECUTIVE SUMMARY

Intervention works:

Review carriageway drainage and skid resistance. Review and revise road markings and warning signs, including alteration of centre lines and enhancing carriageway edge lines where appropriate.

Principle: A study of personal injury collisions at this location indicates that there have been 3 incidents involving vehicles travelling in opposite directions, one involving an LGV and resulting in serious injury to the other driver. All three collisions occurred in wet/damp weather.


1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	Waltham Road/Boreham Road and Cranham Road, Boreham, in the vicinity of their junction.
Grid Reference	E574561, N212839
Speed Limit	Derestricted
Street Lit	No
Carriageway type	All three roads are rural single carriageways, with one lane for traffic in each direction. There are no footways along these roads.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Y-shaped priority "Give Way" junction at Cranham Road, with a small grass verge island between arms, where it meets Waltham Road/Boreham Road.
Utilities Present	Potentially – shouldn't affect any scheme proposals
Existing TRO's	None

<p>Road Surface</p>	 <p>There is no SCRIM data for these roads. The SCANNER condition survey for 2019-20 indicates the carriageways are generally in sound condition (coloured green), with a number of short sections approaching warning status (blue).</p>
<p>Signing</p>	<p>Boreham Road southbound (from Drakes Lane) – warning sign (TSRGD Diag. 512.1) for ‘Bend Ahead’ to the right, with nearside junction (Birds Farm Lane) and ‘150 yds’ subplate, situated on a left-hand bend immediately prior to the hazard. There is a corresponding warning sign for ‘Bend Ahead’ to the left, with offside junction, facing northbound road users (from Cranham Road).</p> <p>Cranham Road eastbound – no warning signs; inverted triangular ‘Give Way’ sign in the triangular splitter island at junction with Boreham Road/Waltham Road, beside a fingerpost sign.</p> <p>Waltham Road southbound (from Cranham Road) – a ‘Double Bends Ahead’ warning sign (TSRGD Diag.513) with ‘For 500 yds’ subplate, coinciding with the commencement of centre white lines and a SLOW marking. The bend at Brent Hall Lodge is marked with chevron signs (TSRGD Diag.515).</p> <p>Waltham Road northbound (from Holts Lane) – similarly, there is a ‘Double Bends Ahead’ warning sign with ‘For 500 yds’ subplate, coinciding with a SLOW marking. The bend at Brent Hall Lodge is marked with chevron signs (TSRGD Diag.515) in this direction too.</p>
<p>Road Markings</p>	<p>Boreham Road – edge of carriageway markings to both sides, with a slightly worn centre hazard marking (long line with short gaps). No reflective studs. SLOW marking associated with the ‘Bend Ahead’ warning sign, after which the centre marking is omitted, apparently due to reduced carriageway</p>

	<p>width, resuming briefly approaching the junction with Cranham Road before ceasing again across the junction.</p> <p>Cranham Road – edge of carriageway markings to both sides of the road and centre hazard warning line (long lines with short gaps); no reflective road studs.</p> <p>Waltham Road – edge of carriageway markings to both sides of the road. The centre hazard warning line (long lines with short gaps) extends only through the double bends, widening to centre hatching through the bend by Brent Hall Lodge. There is a SLOW marking beside each of the ‘Double Bends Ahead’ warning signs.</p>		
Visibility	For each of these roads, forward visibility through the bends is restricted by dense vegetation close to the carriageway edge.		
Vegetation	There is well established vegetation growth along both sides of all three roads, which in places restricts forward visibility through the bends. However, there is adequate visibility of the junction itself from all approaches.		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Total incidents at Cluster Site	0	1	2	0	1	4

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Head-on collisions involving opposing vehicles	0	1	2	0	1	4

Additional information	None.
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4.0 Site Photographs



Image 1 – Waltham Road northbound, approaching Brent Hall Lodge



Image 2 – Waltham Road northbound, bend at Brent Hall Lodge



Image 3 – Boreham Road southbound
worn centre lines and restricted forward visibility through left/right bends



Image 4 – Boreham Road southbound, bend at j/w Birds Farm Lane
(opposing view to Image 7)
verge erosion/incursion to both sides and limited forward visibility through narrow bend



Image 5 – Cranham Road westbound
visibility limited by dense vegetation at both sides of road



Image 6 – Cranham Road eastbound
(opposing direction to Image 5 above)
Note: locked tyre marks swerving to nearside and restricted forward visibility through bend



Image 7 – Boreham Road northbound
verge erosion/incursion to both sides and limited forward visibility through narrow bend



Image 8 – Waltham Road northbound, approaching j/w Cranham Road;
nearside verge erosion/incursion into roadside ditch

5.0 Recommendations

Remedial Measures

Review and revise warning signs and road markings, potentially removing centre lines where appropriate, and provision of posts/vergemarkers or kerbing to deter vehicle over-run.

Review carriageway profile and effective surface water drainage – assess during/after rainfall.

6.0 Estimated Costs

Total Scheme Design and Implementation	£30000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	41%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

Casualties treated	0	1	4
Investigation time period (years)	3		
Estimated cost of recommended remedial measures (including Design, Audit and Traffic Management)			
As per recommendations in Section 6	£30,000.00		
Collision saving produced by proposed treatment (%)	41		
%FYRR fatal	0		
%FYRR serious	133		
%FYRR slight	29		

Total % FYRR 162

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

1.23 or 0.41 each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

2.05 or 0.68 each year

Site Report Essex Highways Casualty Reduction Site Report 2020/21



Location: A414 Main Rd jw Hulls Lane

District: Chelmsford

Collision Investigation Period: 01/01/2016 – 31/12/2018

Site Ranking: 165 (Single Site)

EXECUTIVE SUMMARY

Intervention works:

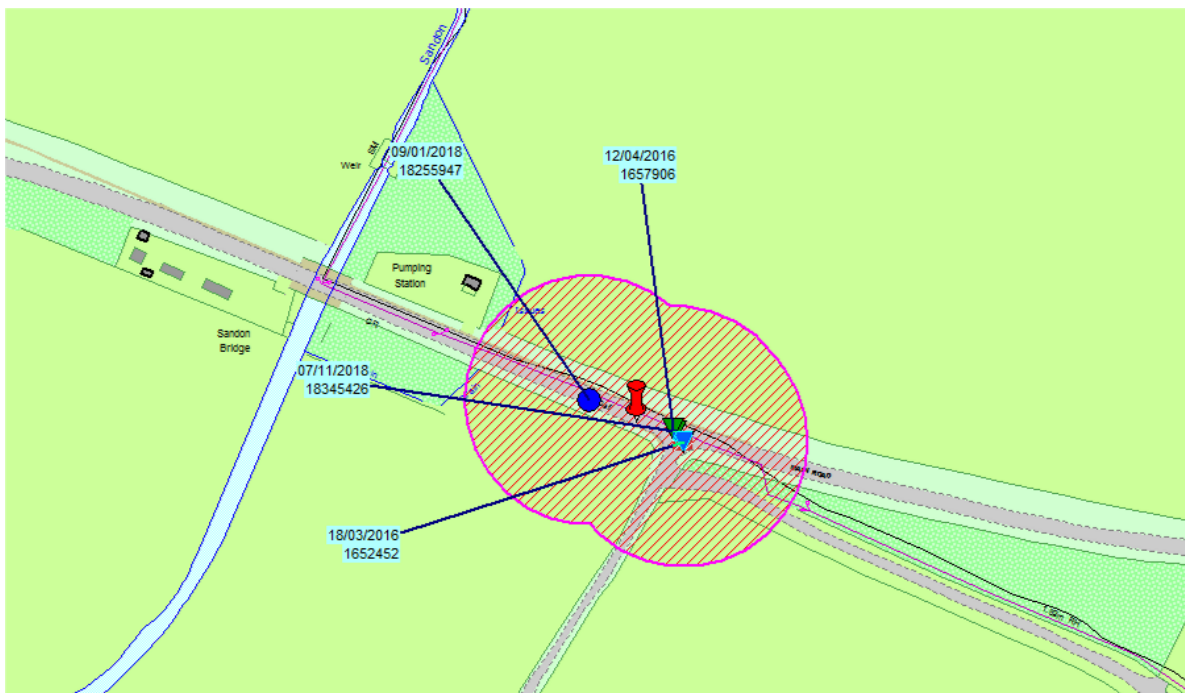
Feasibility study undertaken 2020/2021. Provision of ghost right turn lane at this location would exceed the FYRR.

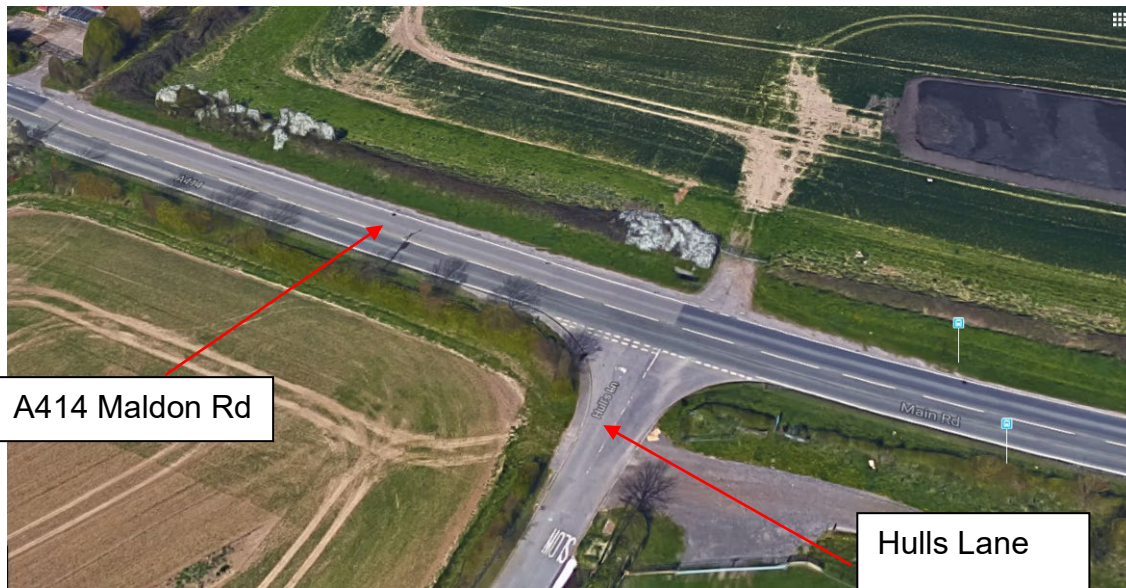
Section along A414 EB approach is to be resurfaced with HFS via different department.

ITS to be commissioned to design a vehicle activated sign (VAS) – indicating 'queuing traffic ahead' when a vehicle is stationary waiting to turn right into Hulls Lane. Existing queues ahead warning sign is to be relocated and will further supplement the VAS.


Principle: A study of personal injury collisions at this location indicates a pattern of eastbound road users travelling along the A414 waiting to turn right into Hulls Lane. Two of these collisions involved a nose to tail collision with the road user waiting to turn right. The other two collisions involved eastbound road users failing to stop in time for queuing traffic and swerving into the opposing lane colliding with westbound road user.

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A14 Maldon Rd at its junction with Hulls Lane
Grid Reference	575659, 205354
Speed Limit	Derestricted
Street Lit	No
Carriageway type	Single Carriageway
Gradient	None
Traffic Management / Existing Traffic Calming	None
Utilities Present	None Affected
Existing TRO's	None Affected
Road Surface	 <p>19-20 Scrim Data indicates that there is a 'Sound' scrim condition for the eastbound approach to the junction – this is the section which appears to be covered by high friction surfacing. However on the eastbound departure from the junction this then reduces to a 'below investigatory' level.</p>

Signing	.As per Image 1 – on the A414 eastbound nearside approach there is a series of yellows backed warning signs depicting ‘Queues ahead likely’ and ‘Side Rd Junction ahead’. Opposite the junction there is ‘directional’ signing for Maldon and Chelmsford (as per Image 2)		
Road Markings	Edge of carriageway line and centre line present – worn slightly.		
Visibility	There is good forward visibility in both directions approaching the junction.		
Vegetation	Slight vegetation along the A414 nearside Eastbound approach to the junction, does this does not affect the overall visibility of the junction.		
Highway Boundary / Land & Ownership Check?	Possibly	Is the scheme within Highway boundary or on land owned by ECC(*)	Check Required (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	None		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	1	3	0	1	5

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
A414 Eastbound road users failing to observe stationary or other road users slowing to to turn right into Halls Lane	0	1	3	0	1	5

Additional information	None.
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4.0 Site Photographs



Image 1 – A414 eastbound approach to Hulls Lane



Image 2 – A414 Maldon Rd at junction with Hulls Lane



Image 3 – A414 eastbound approach to jw Hulls Lane

5.0 Recommendations

Remedial Measures

Section along A414 EB approach is to be resurfaced with HFS via different department.

ITS to be commissioned to design a vehicle activated sign (VAS) – indicating ‘queuing traffic ahead’ when a vehicle is stationary waiting to turn right into Hulls Lane. Existing queues ahead warning sign is to be relocated and will further supplement the VAS.

6.0 Estimated Costs

Feasibility /Design only	£21,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
VAS sign – warning signs	46%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR – NA DESIGN ONLY

First Year Rate of Return (FYRR) Calculation: Non Built Up Rds (other than Motorways) with Speed Limit of 40mph or greater

% FYRR = $\frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,305,312	£282,408	£31,213
0	1	3
0	1	5
	3	

Estimated cost of recommended remedial measures

(Including Design, Audit and Traffic Management)

As per recommendations in Section 6

XXXXXXX

Collision saving produced by proposed treatment (%)

XXXX

%FYRR fatal

%FYRR serious

%FYRR slight

#VALUE!

#VALUE!

#VALUE!

Total % FYRR **####**

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

or **####** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

or **####** each year

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



Location: A1124 Lexden jw A12 J26

District: Colchester

Collision Investigation Period: 01/01/2017 – 31/12/2019

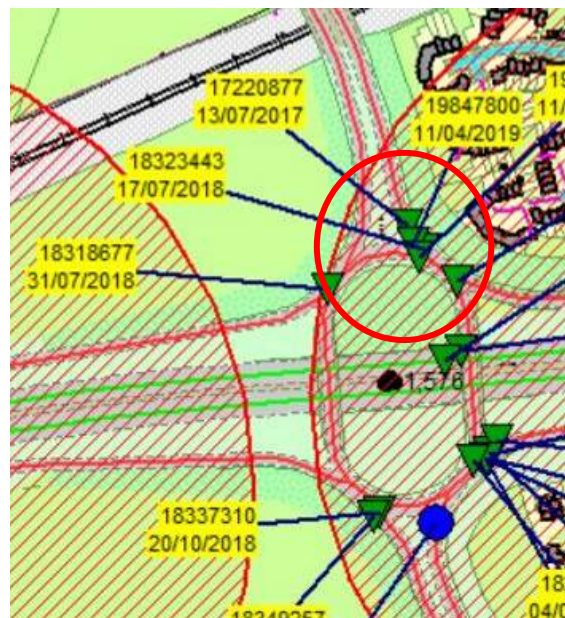
Site Ranking: 004 (Rural Site)

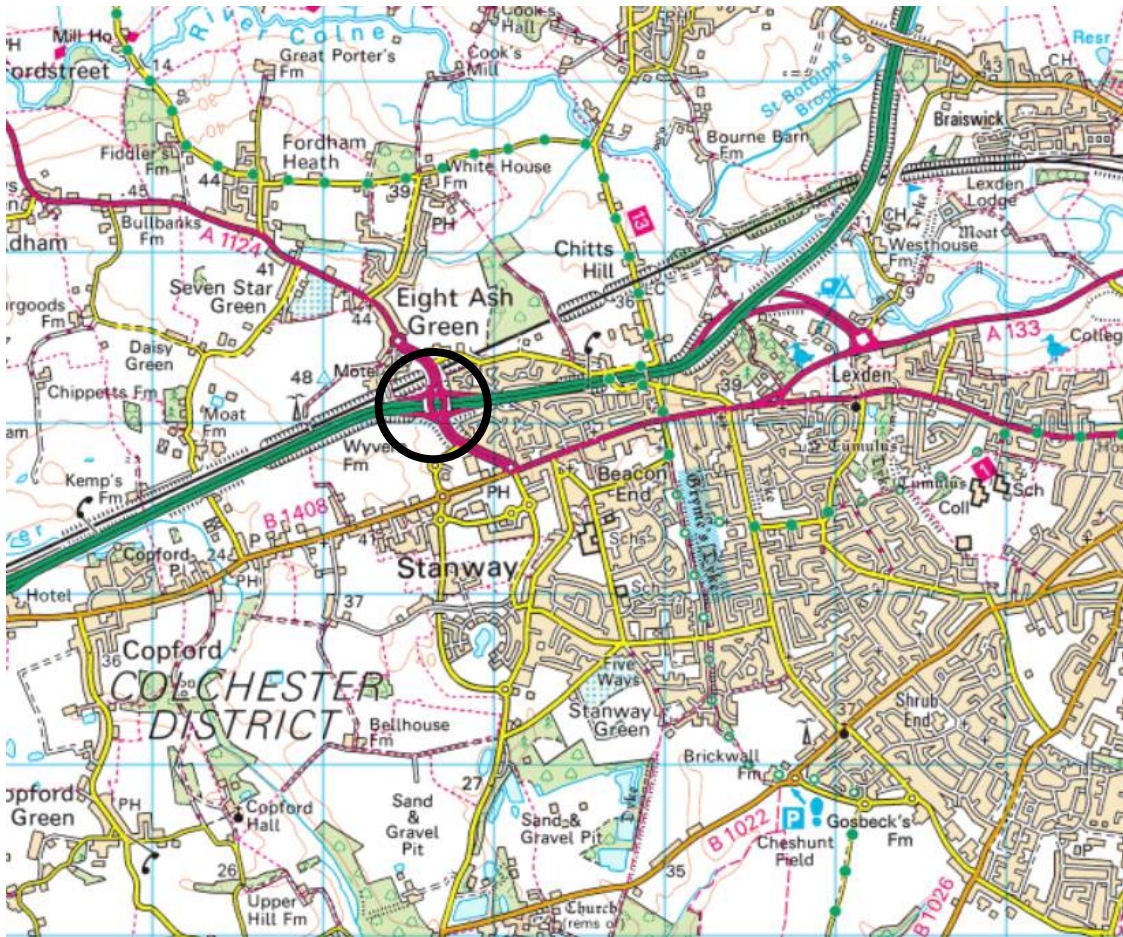
EXECUTIVE SUMMARY

Intervention works: Provide hedgerow vegetation within the large northern splitter island to assist in reducing visibility to the right on the southbound approach to the roundabout.



Principle: A study of personal injury collisions at this location indicates a pattern of collisions involving rear shunt collisions on the A1124 southbound approach to the roundabout

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	A1124 southbound approach to the junction with A12 J26
Grid Reference	594710, 225070
Speed Limit	40mph on the approach, and changing to National speed limit at the intersection of the A1124 and A12 roundabout.
Street Lit	Yes
Carriageway type	The A1124 is a section of 2 lane dual carriageway with a wide central reservation.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Existing roundabout junction
Utilities Present	Potentially
Existing TRO's	None
Road Surface	 <p>Latest Scrim data from 2020_21 indicates the southbound approach to the cluster location is at SCRIM "Warning Level". However, this is not considered to be a contributory factor in the collisions that have occurred here.</p>
Signing	<p>There is an existing map type advanced directional signs present on the A1124 (southbound). However, this sign is totally obscured by vegetation.</p>  <p>Figure 1: ADS obscured by vegetation</p> <p>There are no lane destination signs present on any of the approaches.</p>

Road Markings	Existing road markings are generally in fair condition. Two sets of "SLOW" carriageway markings are provided approx. 54m & 64m north of the give way line		
Visibility	Forward visibility towards the junction is fair. Driver awareness of the junction will be improved when the vegetation blocking the ADS is removed. Visibility to the right at the junction could be interpreted as excessive.		
Vegetation	No vegetation at the junction is considered to cause any issues.		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other			

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Cluster initial analysis covered entire roundabout circulatory.	0	1	21	0	1	23

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Rear shunt type collisions on the A1124 southbound approach to the roundabout	0	0	4	0	0	4

Additional information	N/a
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4.0 Site Photographs



Image 1 – ADS sign obscured by vegetation. (southbound approach)



Image 2 – Southbound approach to the roundabout



Image 3 – Visibility to the right approx. 55m from give way line.



Image 4 – Visibility to the right approx. 40m from give way line.



Image 5 – Visibility to the right approaching the give way line

5.0 Recommendations

Remedial Measures

- 1) It is recommended that visibility to the right is restricted. For aesthetic considerations, it is proposed that vegetation in the form of hedgerow is provided in the central reserve.
- 2) It is recommended that the vegetation obscuring the ADS sign is removed.

6.0 Estimated Costs

Total Scheme Design and Implementation	£14500
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	42%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

First Year Rate of Return (FYRR) Calculation: Built Up Rds (other than Motorways) with Speed Limit of 40mph or Less

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

Assumptions:

	Fatal	Serious	Slight
Average annual collision cost (£)	£2,227,264	£257,975	£26,312
Collisions treated	0	0	4
Casualties treated	0	0	4
Investigation time period (years)		3	

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

As per recommendations in Section 6

£14,500.00

Collision saving produced by proposed treatment (%)

42

%FYRR fatal

0

%FYRR serious

0

%FYRR slight

102

Total % FYRR **102**

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

1.68 or **0.56** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

1.68 or **0.56** each year

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



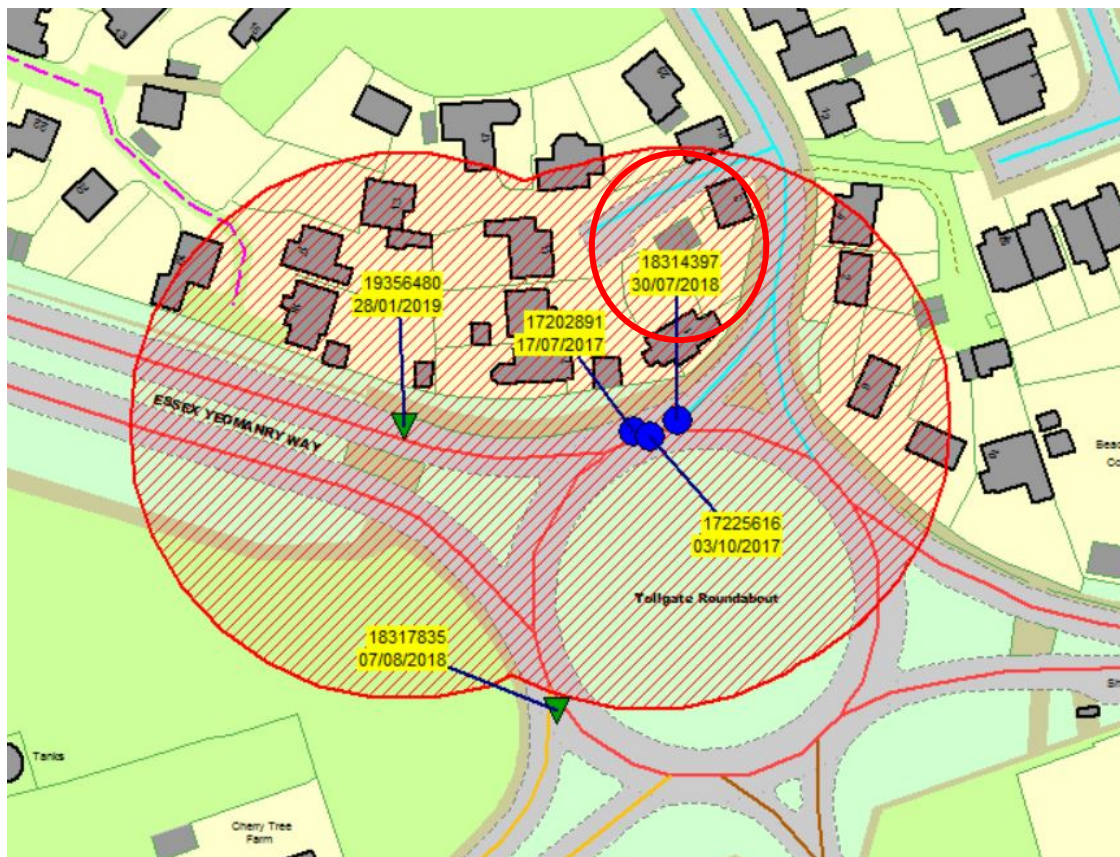
Location: A1124 jw Tollgate Drive (Tollgate Roundabout)
District: Colchester
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: 107 (Single Site)

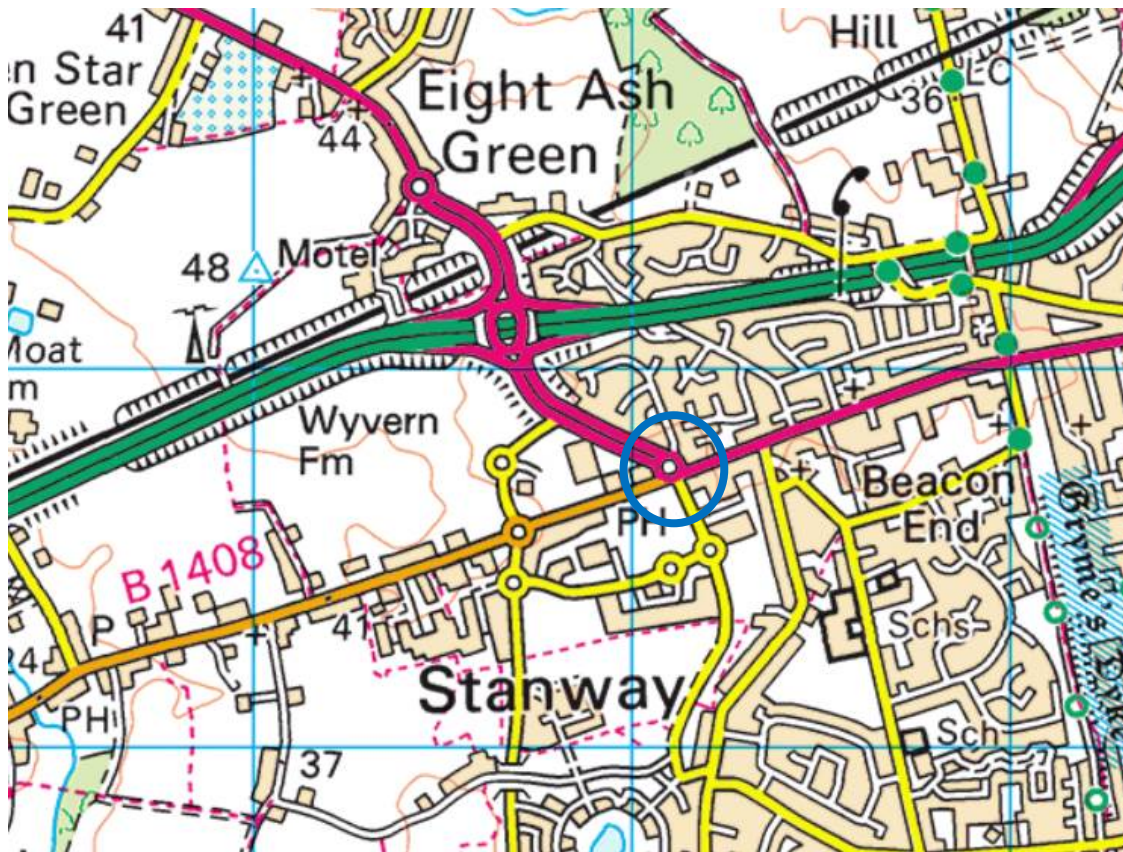
EXECUTIVE SUMMARY

Intervention works: Data collection/speed surveys/cycle destination surveys. Set up CRIMMS discussion with various stakeholders

Principle: A study of personal injury collisions at this location indicates a pattern of 3 serious injury collisions involving cyclists. 2 involving vehicles entering the roundabout in to the path of cyclists on the circulatory carriageway and the third involving a side impact collision of a cyclist entering the circulatory carriageway.

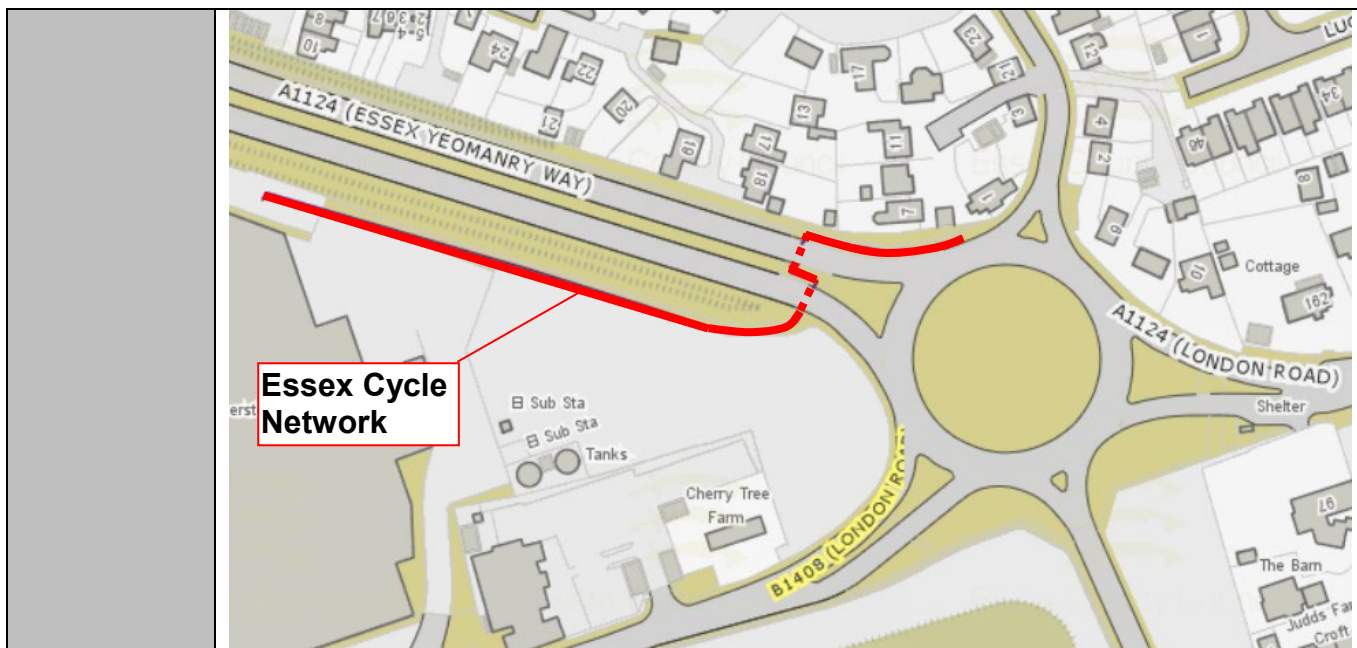
1.0 Site Plan with Collision Plot





2.0 Site Description & Observations

Details	Description/Observations		
Road Name (s)	A1124 Tollgate Roundabout		
Grid Reference	595072, 224791		
Speed Limit	30mph		
Street Lit	Yes		
Carriageway type	Tollgate Roundabout is a 5 arm roundabout. Except for the north west arm (Essex Yeomanry Way) all approach roads are 2 way single carriageway		
Gradient	Level Gradient		
Traffic Management / Existing Traffic Calming	Existing roundabout junction		
Utilities Present	Potentially		
Existing TRO's	None		
Road Surface	Latest Scrim data from 2019/2020 indicates Essex Yeomanry Way on the approach to the roundabout is in good condition. There is no data available for the Tollgate Roundabout circulatory carriageway		
Signing	A1124 Essex Yeomanry Way approach to the junction: Roundabout warning signs approx. 210m in advance of the junction in the nearside verge and the central reserve; Map type direction sign approx. 150m in advance of the junction; 30mph terminal signs (gated) approx. 80m in advance of the junction;		
Road Markings	Existing give way road markings on all arms at the roundabout are in fair condition. It is difficult to establish if the roundabout circulatory carriageway has a centre lane line. There are several "Keep Clear" text markings on the circulatory carriageway.		
Visibility	Forward visibility towards the junction is good		
Vegetation	No vegetation at the junction is considered to cause any issues.		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	There is a Toucan Crossing on A1124 Essex Yeomanry Way linking the superstore west of the junction to the north west footway on the roundabout (see below).		



3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	3	2	0	3	2

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Rear shunt type collisions on the A1124 southbound approach to the roundabout	0	3	0	0	3	0

Additional information	N/a
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4.0 Site Photographs



Image 1 – Advanced Roundabout Warning Signs on Essex Yeomanry Way



Image 2 – Map type ADS on Essex Yeomanry Way



Image 3 – Existing Toucan Crossing on Essex Yeomanry Way approaching roundabout



Image 4 – Entry to roundabout from Essex Yeomanry Way.



Image 5 – Visibility to the right from Essex Yeomanry Way.

5.0 Recommendations

Remedial Measures

Data collection/speed surveys/cycle destination surveys. Set up CRIMMS discussion with various stakeholders

6.0 Estimated Costs

Total Scheme (feasibility only)	£13,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	N/A

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

Collisions treated	0	0	0
Casualties treated	0	0	0
Investigation time period (years)	3		

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

As per recommendations in Section 6

£0.00

Collision saving produced by proposed treatment (%)

42

%FYRR fatal

#DIV/0!

%FYRR serious

#DIV/0!

%FYRR slight

#DIV/0!

Total % FYRR **####**

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

0 or 0.00 each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

0 or 0.00 each year

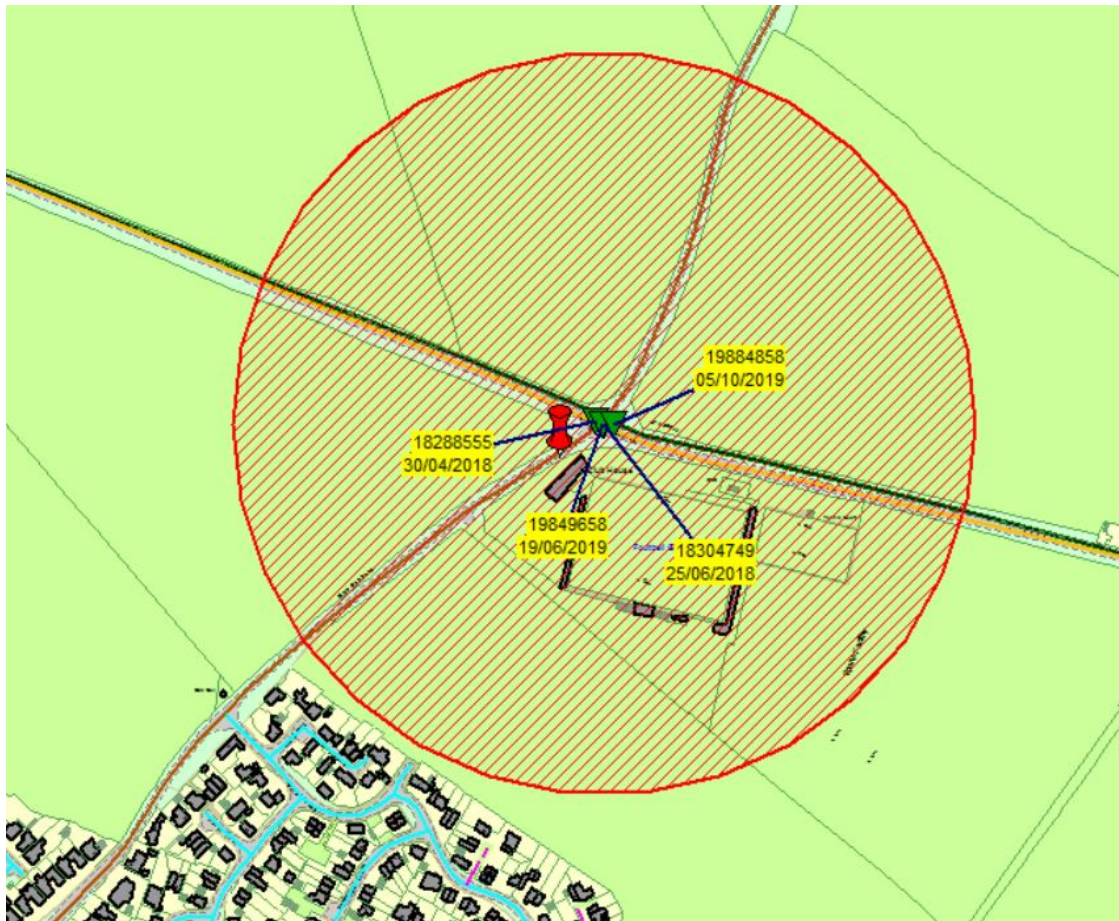
Location: Brightlingsea Road jw Elmstead Road
District: Colchester
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: 087 (Rural Site)

EXECUTIVE SUMMARY

Intervention works: Renew junction road markings on Elmstead Road (north). Cut back vegetation east and west of Elmstead Road (north) outside the visibility splays. Remove existing Give Way sign on offside of Elmstead Road (north) junction and replace with 900mm high triangular sign on yellow backing board in nearside verge at junction. Remount existing weight restriction signs on new Give Way sign post.


Principle: A study of personal injury collisions at this location indicates a pattern of 4 collisions involving southbound road users crossing the carriageway in to the path of oncoming traffic. 2 involving westbound road users and 2 involving eastbound road users.

1.0 Site Plan with Collision Plot



2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	B1027 Brightlingsea Road jw Elmstead Road, Wivenhoe
Grid Reference	604500, 223710
Speed Limit	All roads at the junction are subject to National Speed Limit
Street Lit	No
Carriageway type	Brightlingsea Road is a 2 way single carriageway. Elmstead Road (south) is a narrow 2 way single carriageway of insufficient width to accommodate a centre line, with localised widening at the junction. Elmstead Road (north) is a 2 way single carriageway.
Gradient	Level Gradient
Traffic Management / Existing Traffic Calming	Existing cross roads junction
Utilities Present	Potentially
Existing TRO's	Weight limit restrictions are signed on both north and south Elmstead Road.
Road Surface	SCRIM data indicates that Brightlingsea Road is at or below investigatory level on the approaches to the junction. Elmstead Road (north and south) is in poor surface condition at the junction.
Signing	Brightlingsea Road: Cross Roads warning sign on yellow backing board and "Reduce Speed Now" supplementary plate, accompanied by "ineffective" rumble strips are located west of the junction. Cross Roads warning sign on yellow backing board and "Reduce Speed Now" supplementary plate, accompanied by "ineffective" rumble strips are located east of the junction. Elmstead Road (south): Give Way sign on yellow backing board is provided in the nearside at the junction. Forward visibility to the sign face is restricted by existing hedgerow. Elmstead Road (north): Give Way sign is provided on offside at the junction. Forward Visibility to the sign face is restricted by existing vegetation/tree.
Road Markings	Brightlingsea Road: Centre line road markings appear in fair condition. Elmstead Road (south): Centre of carriageway markings on the approach to the junction appear faded. The junction markings are in very poor condition. Elmstead Road (north): Centre of carriageway markings and junction markings at the junction are in poor condition.
Visibility	Visibility to the right from Elmstead Road (north) is partially obstructed by exiting vegetation (see below)

			
Vegetation	It appears that vegetation in the verge on Brightlingsea Road at the junction is partially restricting the visibility splays from the side roads.		
Highway Boundary / Land & Ownership Check?	Map Essex records indicate that the verges at the junction are not maintained by Essex Highways.	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other			

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	0	4	0	0	5

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
4 collisions involving southbound road users crossing the carriageway in to the path of oncoming traffic. 2 involving westbound road users and 2 involving eastbound road users	0	0	4	0	0	5

Additional information	The measures are proposed to address collisions involving southbound road users at the junction. The junction markings and give way signs on Elmstead Road (south) are also in poor condition. It is recommended that the maintenance requirements on the south road are carried out at the same time as the north side mitigation measures.
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4.0 Site Photographs



Image 1 – Elmstead Road (north) approach to junction.



Image 2 – Visibility to the right at Elmstead Road (north) junction



Image 3 – Visibility to the left at Elmstead Road (north) junction.



Image 4 – Brightlingsea Road eastbound approach to junction.



Image 5 – Brightlingsea Road westbound approach to junction

5.0 Recommendations

Remedial Measures

Proposals Elmstead Road (north):

- Re-apply give way markings and approach centre line;
- Replace existing give way sign with a new 900mm high triangular sign on yellow backing board in nearside verge at junction;
- Remove vegetation on north side of Brightlingsea Road located within the visibility splays;

6.0 Estimated Costs

Total Scheme Design and Implementation	£15,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	41%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

Assumptions:

	Fatal	Serious	Slight
Average annual collision cost (£)	£2,422,598	£292,513	£31,937
Collisions treated	0	0	4
Casualties treated	0	0	5
Investigation time period (years)		3	

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

As per recommendations in Section 6

£15,000.00

Collision saving produced by proposed treatment (%)

41

%FYRR fatal

0

%FYRR serious

0

%FYRR slight

116

Total % FYRR 116

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

1.64 or **0.55** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

2.05 or **0.68** each year

Site Report Essex Highways Casualty Reduction Site
Report 2021/22



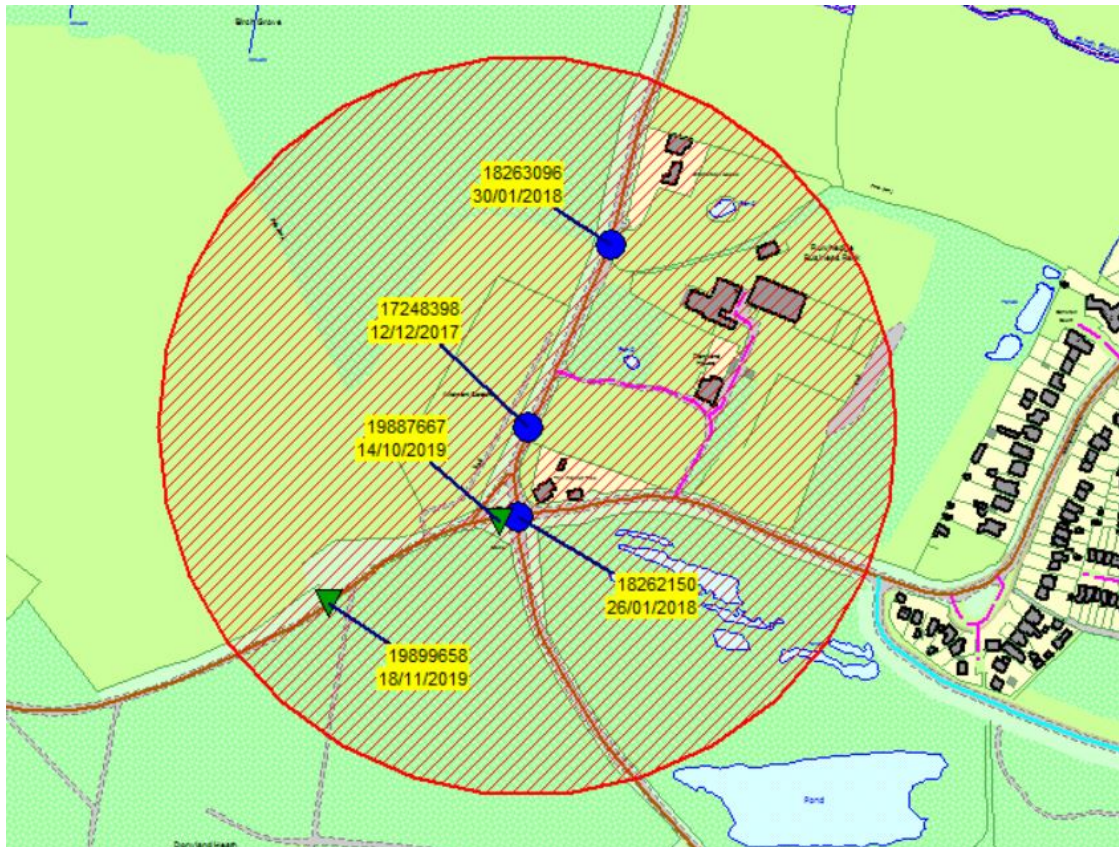
Location: Fingringhoe Road near jw Weir Lane
District: Colchester
Collision Investigation Period: 01/01/2017 – 31/12/2019
Site Ranking: 045 (Rural Site)

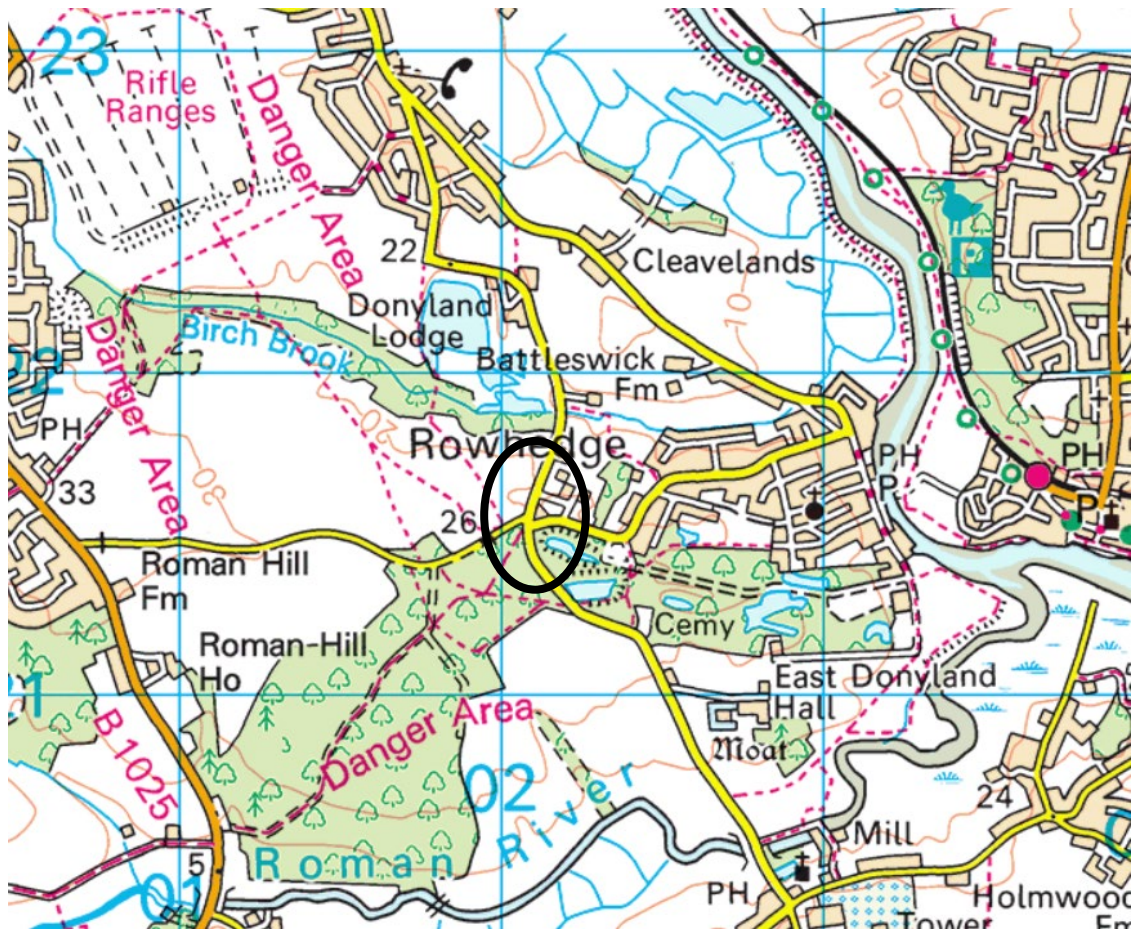
EXECUTIVE SUMMARY

Intervention works: Remark junction and main line centre line markings using rain line or similar. Provide yellow backed Give Way sign and Give Way triangle road marking on Rectory Road. Provide yellow backing boards to junction warning signs on Fingringhoe Road approaches to increase conspicuity. Vegetation clearance from visibility splays for Rectory Road.

Principle: A study of personal injury collisions at this location indicates a pattern of 4 collisions occurring on a wet/damp carriageway surface, 2 of which involved westbound vehicles entering in to the path of southbound vehicles and 1 southbound loss of control collision.

1.0 Site Plan with Collision Plot





2.0 Site Description & Observations			
Details	Description/Observations		
Road Name (s)	Fingringhoe Road jw Weir Lane/Rectory Road		
Grid Reference	602094, 221588		
Speed Limit	The junction and approaches are subject to the National Speed Limit		
Street Lit	No		
Carriageway type	Fingringhoe Road is a 2 lane single carriageway. Rectory Road is a 2 lane single carriageway. Weir Lane is a narrow single carriageway with a Bennet Island at the junction.		
Gradient	Level Gradient		
Traffic Management / Existing Traffic Calming			
Utilities Present	Potentially		
Existing TRO's	None		
Road Surface	Available Scanner data indicates some small areas at the junction considered 1 step below optimum. All other areas at the junction are considered good.		
Signing	Fingringhoe Road: Horse warning sign approx. 110m south of junction. Crossroads warning sign with supplementary plate "Reduce Speed Now" approx. 80m south of junction. Crossroad warning sign approx. 100m north of junction. Horse warning sign approx. 55m north of junction. Rectory Road: Give way sign in the nearside verge at the junction.		
Road Markings	Road markings are showing signs of wear, particularly where junction turning manoeuvres occur.		
Visibility	Visibility from Rectory Road is partially limited to the right due to boundary fence. Visibility to the right from Weir Lane is limited due to vegetation in verge. Map Essex indicates the verge is not maintained by Essex Highways.		
Vegetation	See above		
Highway Boundary / Land & Ownership Check?	No	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other			

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
	0	3	2	0	4	4

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
4 collisions on wet/damp carriageway surface, 2 of which involved westbound vehicles entering in to the path of southbound vehicles and 1 south and 1 northbound loss of control collision	0	2	1	0	2	2

Additional information	<p>The measures are proposed to address 2 collisions involving westbound vehicles approaching Fingringhoe Road and 1 loss of control collision northbound.</p> <p>The junction markings and layout is also in poor condition.</p> <p>It is recommended that the maintenance requirements on Weir Lane are carried out at the same time as the north side mitigation measures.</p>
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4.0 Site Photographs



Image 1 – Northbound Fingringhoe Road approach to junction.



Image 2 – Northbound Fingringhoe Road at junction



Image 3 – Southbound Fingringhoe Road approach to junction.



Image 4 – Southbound Fingringhoe Road at junction



Image 5 – Eastbound Weir Lane approach to junction



Image 6 – Eastbound Weir Lane at junction



Image 7 – Westbound Rectory Road approach to junction



Image 8 – Westbound Rectory Road at junction

5.0 Recommendations

Remedial Measures

Re-apply junction give way markings on Rectory Road using “Rainline” or “thick” thermoplastic screed.
 Provide Give Way Triangular Road marking on Rectory Road using “Rainline” or “thick” thermoplastic screed
 Replace existing Give Way sign with similar on yellow backing board on Rectory Road.
 Remove vegetation within Rectory Road visibility splays.

6.0 Estimated Costs

Total Scheme Design and Implementation	£17000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Package of measures	41%

8.0 Other engineering options for consideration

N/A	-
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9.0 Scheme Approval

Safety Engineering Team:	Tel No.	Date

Appendix A: FYRR

urn (FYRR) Calculation: Built Up Rds (other than Motorways) with Speed Limit of 40mph or Less

$\frac{\text{al Collision Savings} \times 100}{\text{Scheme Cost}}$

	Fatal	Serious	Slight	Source: S
Collision cost (£)	£2,422,598	£292,513	£31,937	
	0	2	1	
	0	2	2	
period (years)		3		
of recommended remedial measures (n, Audit and Traffic Management)				
ations in Section 6	£17,000.00			
produced by proposed treatment (%)	41			
	0			
	470			
	26			

FYRR 496

ions that would not have occurred had the remedial actions been
the start of the collision period

1.23 or **0.41** each year

alties that would not have occurred had the remedial actions been
the start of the collision period

1.64 or **0.55** each year

Site Report Essex Highways Casualty Reduction Site
Report 2019/20



Location: A134 ON ROUNDABOUT WITH NAYLAND ROAD District: Colchester
Collision Investigation Period: 01/01/2015 – 31/12/2020 (6 years)
Site Ranking: 110

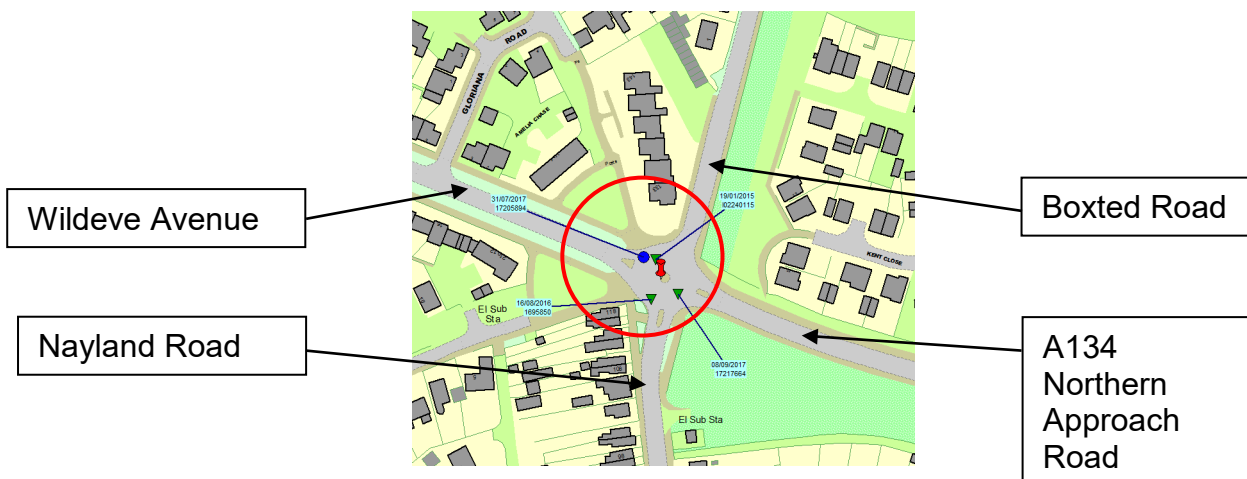
EXECUTIVE SUMMARY

Intervention works: Following a detailed feasibility study – reviewing cyclist movements in and around the junction, the following measures will be implemented.

Roundabout will be increased in size and diameter (to reduce the east to west and vice versa straight over manoeuvres). Improved Chevron block paving and chevron signing will be provided within the new roundabout. Cyclist warning signs on the roundabout circulatory and on the east and west bound approaches to the roundabout will be provided.

Principle: A study of the personal injury collisions along this section of A134 show that there are issues involving vulnerable road users (cyclists) being injured by motorists entering the roundabout circulatory.

1.0 Site Plan with Collision Plot





Site location

2.0 Site Description & Observations

Details	Description/Observations
Road Name (s)	Wildeva Avenue/ Boxted Road/ Northern Approach Road/ Nayland Road
Grid Reference	598910/ 228170
Speed Limit	30mph
Street Lit	Yes
Carriageway type	Single
Gradient	None
Traffic Management / Existing Traffic Calming	N/a
Utilities Present	None affected
Existing TRO's	None affected
Road Surface	<p>2017/18 SCANNER survey data indicates that the surface is generally in a 'sound' condition. There are blue sections on the approaches to the roundabout but this is to be expected as this is a braking zone.</p>

Signing	<u>Wildevve Avenue</u> 1. Advanced Direction Sign for the roundabout. 2. End of clearway signs <u>Boxted Road</u> 1. Advanced Direction Sign for the roundabout. 2. End of clearway sign <u>Northern Approach Road</u> 1. Advanced Direction signs for the roundabout <u>Nayland Road</u> 1. Bus gate signing. 2. Cycle shared use facility signing There are also signs for the roundabout island on all four approaches including chevron signs and keep left 606 signs.		
Road Markings	There are centre lines on all four roads. There are roundabout giveway marking on all four approaches. There are 'No entry' & 'Buses Only' road markings on Nayland Road and hatched areas for the bus gate.		
Visibility	Visibility is good on all approaches to the roundabout.		
Vegetation	Yes there is grassed verges on Wildevve Avenue and on Northern Approach Road. There is vegetation and trees along Boxted Road, and some dense vegetation at the corner of Northern Approach Road and Nayland Road.		
Highway Boundary / Land & Ownership Check ?	Not required.	Is the scheme within Highway boundary or on land owned by ECC(*)	Yes / (*if the land is not highway the scheme should only proceed to feasibility design & land acquisition/dedication stage)
Does the scheme require change to an existing TRO or Speed Limit	No		
Other	It was observed that vehicles are failing to stop to look at the giveway lines when approaching the roundabout from west to east. As there is little movement from Nayland road due to the bus gate.		

3.0 Personal Injury Collision Analysis

Cluster Site Collision Information	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Collisions included: All collisions involved motor vehicles failing to giveaway and colliding with Cyclists on the roundabout circulatory.	0	2	6	0	2	6

Identified Collision Pattern(s) at Cluster Site	COLLISIONS			CASUALTIES		
	FATAL	SERIOUS	SLIGHT	FATAL	SERIOUS	SLIGHT
Cyclists being struck by motor vehicles on the roundabout circulatory.	0	2	6	0	2	6

Additional information	The scheme has had a detailed feasibility undertaken on it by SuSTRANS. The various scheme options put forward were then discussed in detail and reviewed further by various stakeholders. The final design to be implemented has come about through detailed discussions with these stakeholders, as well as having the primary aim to reduce cyclist collisions on the circulatory.
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4.0 Site Photographs



Image 1 – View looking North from the bus gate on Nayland Road



Image 2 – View looking East on Wildeve Avenue (notice articulated vehicle over running the over run area)



Image 3 – View looking North from the bus gate on Nayland Road



Image 4 – View looking south at the roundabout on Boxted Road



Image 5 – View looking west on Northern Approach Road.



Image 6 – View looking East on Wildeve Avenue

5.0 Recommendations

Remedial Measures

Following the Commission of the feasibility study undertaken by Sustrans in 2019/2020 Safety engineering remedial measures have now been designed in 2020/2021

These will now be implemented as per below:

Roundabout will be increased in size and diameter (to reduce the east to west and vice versa

straight over manoeuvres). Improved Chevron block paving and chevron signing will be provided within the new roundabout. Cyclist warning signs on the roundabout circulatory and on the east and west bound approaches to the roundabout will also be provided.

6.0 Estimated Costs

Implementation	£104,000
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7.0 Predicted Collision Cost Saving from remedial measure

Remedial Measures	Reduction in Collisions (RoSPA)
Traffic Calming – Vertical / roundabout Imps	65%

8.0 Other engineering options for consideration

NA	

9.0 Scheme Approval

Appendix A: FYRR

$$\% \text{ FYRR} = \frac{\text{Annual Collision Savings} \times 100}{\text{Scheme Cost}}$$

Assumptions:

Average annual collision cost (£)

Collisions treated

Casualties treated

Investigation time period (years)

Fatal	Serious	Slight
£2,227,264	£257,975	£26,312
0	2	6
0	2	6
	6	

Estimated cost of recommended remedial measures

(including Design, Audit and Traffic Management)

As per recommendations in Section 6

£91,000.00

Collision saving produced by proposed treatment (%)

65

%FYRR fatal

0

%FYRR serious

61

%FYRR slight

19

Total % FYRR 80

Number of collisions that would not have occurred had the remedial actions been implemented at the start of the collision period

5.2 or **0.87** each year

Number of casualties that would not have occurred had the remedial actions been implemented at the start of the collision period

5.2 or **0.87** each year

Safety Engineering Team:	Tel No.	Date

