Appendix 7 – Survey Data Summary

A176 NOAK HILL ROAD_WASH ROAD (WEST) – RIGHT TURN PROHIBITION

DEBRIEF:

Casualty Reduction engineering measures were fully installed and operational 27 August 2018

COLLISION ANALYSIS:

The most recent collision data has been analysed post scheme construction (Sept 2018 to April 2019) and indicates there have been no personal injury collisions at the junction of A176 Noak Hill Rd / Wash Rd. There have also been no recorded collisions post construction along Lower Dunton Rd / High Rd North / Hornbeam Way. One slight collision was recorded on 08/12/2018 along Willowfield at junction of Hornbeam Way.

DESTINATIONS ANALYSIS:

A = Road users travelling north (A176)

B = Road users travelling east (Wash Rd)

C = Road users travelling south (A176)

D = Wash Road travelling east (Wash Rd)

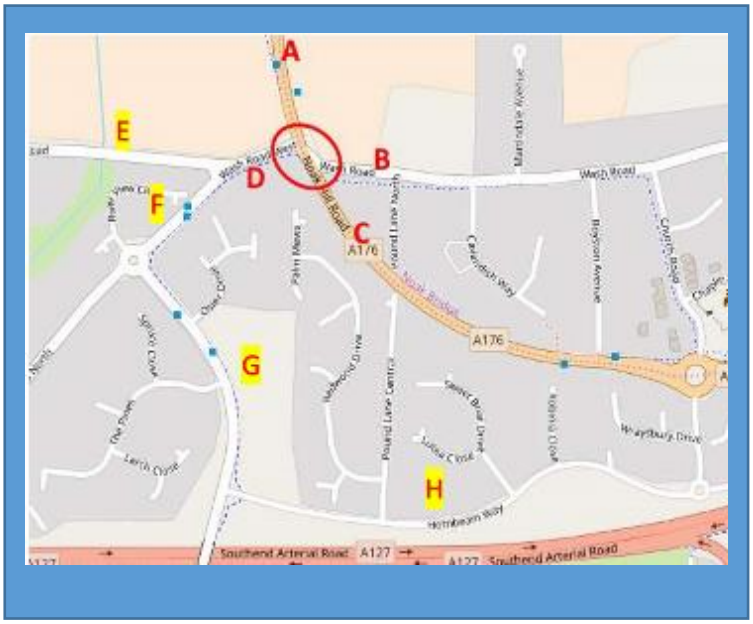
SPEED SURVEYS:

E = Dunton Rd Speed Survey Location

F = High Rd Nth Speed Survey Location

G = Willowfield Speed Survey Location

H = Hornbeam Way Speed Survey Location

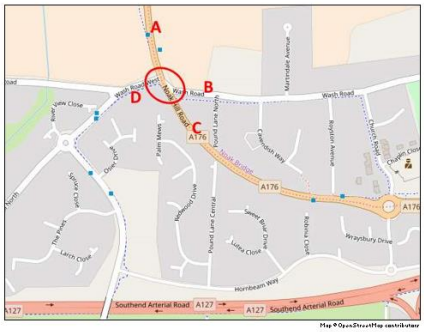


Appendix 7 – Survey Data Summary

BEFORE INSTALLATION DESTINATION OF ROAD USERS:

Tuesday 27th Feb 2018 (13 hour period) 06:00 to 19:00

Movement D to B = 233 vehicles / Movement D to C = 431 vehicles (664 vehicles in total)



A 13hr survey, commencing at 06:00 on Tue 27 Feb 2018, recorded a total of 19,691 vehicle movements in 9 classes at the 4-arm junction.

PSL	40mph
OSGR	568538, 190512
LAT, LNG	51.588256, 0.431470

9 cyclists were recorded, 0.05% of the total volume.

1.45% of the total volume consists of rigid and articulated HGVs.

There were no recorded incidents.

The AM peak was in the 15min period commencing at 08:00, whilst the PM peak was 17:15

The busiest route over 13hrs was between A176 Noak Hill Rd (N) and A176 Noak Hill Rd (SE) (see matrices).

VEHICLE MOVEMENTS

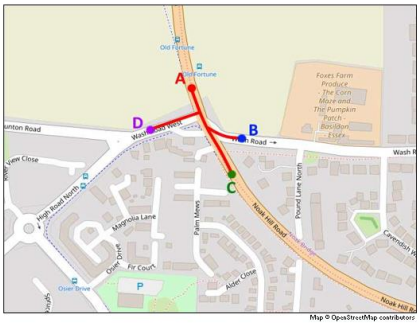
		Entering	Exiting
ARM A	A176 Noak Hill Rd (N)	9164 ↓	8493 ↑
ARM B	Wash Rd (E)	0 ←	571 →
ARM C	A176 Noak Hill Rd (SE)	7350 ↖	6569 ↘
ARM D	Wash Rd West (W)	3177 →	4058 ←
		19691	19691

TABLE 1	A	B	C	D	
A	0	337	6138	2689	9164
B	0	0	0	0	0
C	5980	1	0	1369	7350
D	2513	233	431	0	3177
	8493	571	6569	4058	19691

5 MONTHS AFTER INSTALLATION: DESTINATION OF ROAD USERS:

Tuesday 22nd Jan 2019 (13 hour period) 06:00 to 19:00

Movement D to B = 4 vehicles / Movement D to C = 32 vehicles (36 vehicles in total)



A 13hr survey, commencing at 06:00 on Tue 22 Jan 2019, recorded a total of 20,898 vehicle movements in 9 classes at the 4-arm junction.

PSL	40mph
OSGR	568538, 190512
LAT, LNG	51.588256, 0.431470

16 cyclists were recorded, 0.08% of the total volume.

1.7% of the total volume consists of rigid and articulated HGVs.

There were no recorded incidents.

The AM peak was in the 15min period commencing at 08:30, whilst the PM peak was 17:30

The busiest route over 13hrs was between A176 Noak Hill Rd (N) and A176 Noak Hill Rd (S) (see matrices).

ENTRY refers to entering the junction, EXITING refers to vehicles leaving the junction area.

VEHICLE MOVEMENTS

		Entering	Exiting
ARM A	A176 Noak Hill Rd (N)	10046 ↓	8982 ↑
ARM B	Wash Rd (E)	0 ←	422 →
ARM C	A176 Noak Hill Rd (S)	8046 ↑	6738 ↓
ARM D	High Rd North / Wash Rd West (W)	2806 →	4756 ←
		20898	20898

TABLE 2	A	B	C	D	
A	0	418	6706	2922	10046
B	0	0	0	0	0
C	6212	0	0	1834	8046
D	2770	4	32	0	2806
	8982	422	6738	4756	20898

Appendix 7 – Survey Data Summary

5 MONTHS AFTER INSTALLATION: BANNED MANOEURVES:

Results below in table 3, detail that a small % of road users are still ignoring the temporary 'no u turn' prohibition which was put in place to prevent road users who were turning left out of Wash Rd, and then performing a 'u-turn' manoeuvre to then travel south again along the A176.

It is unclear whether these manoeuvres are being performed at the end of the installed 'Jislon poles' or whether they are being performed in the bus-stop layby further north.

It was also evident that a small % of road users are also choosing the ignore the 'right turn prohibition' and are continuing to turn right out of Wash Rd onto A176 Noak Hill Rd.

To undertake this manoeuvre would require road users to turn right and travel head-on into the path of northbound road users. Essex Police have been informed of the times that these manoeuvres have been occurring and have targeted enforcement to address this.

Survey data	Illegal Manoeuvre Undertaken	No. of vehicles
22/01/2019 (24 hour survey)	Wash Road (W) left-turn then u-turn south to A176	27
23/01/2019 (24 hour survey)	Wash Road (W) left-turn then u-turn south to A176	23
24/01/2019 (24 hour survey)	Wash Road (W) left-turn then u-turn south to A176	43
22/01/2019 (24 hour survey)	Wash Road (W) right-turn to A176	10
23/01/2019 (24 hour survey)	Wash Road (W) right-turn to A176	1
24/01/2019 (24 hour survey)	Wash Road (W) right-turn to A176	7

Table 3:

TRAFFIC FLOWS & SPEEDS BEFORE & AFTER SCHEME CONSTRUCTION:

7 Day Surveys	BEFORE (MAY 2018)	AFTER (JAN 2019)	% INC OR DEC	BEFORE (MAY 2018)	AFTER (JAN 2019)	% INC OR DEC	BEFORE (MAY 2018)	AFTER (JAN 2019)	% INC OR DEC
	Average Daily Traffic Volumes (7 day average)	Average Daily Traffic Volumes (7 day average)	Average Daily Traffic Volumes (7 day average)	Average Daily Speed (7 day average)	Average Daily Speed (7 day average)	Average Daily Speed (7 day average)	Average 85th%tile Speed (7 day average)	Average 85th%tile Speed (7 day average)	Average 85th%tile Speed (7 day average)
Dunton Rd Eastbound (30mph Limit)	2160	1918	-11.20%	33	33.8	2.42%	38.2	38.8	1.57%
High Rd North SW Bound (30mph Limit)	3402	3968	16.64%	30.3	30.1	-0.66%	34.6	33.8	-2.31%
Willowfield Sth Bound (30mph limit)	4119	4559	10.68%	33.6	33.1	-1.49%	38.3	37.5	-2.09%
Hornbeam Way Eastbound (30mph Limit)	2890	3266	13.01%	34.8	35.1	0.86%	41.1	40.1	-2.43%

Table 4:

As part of the implementation of the no right turn prohibition, it was estimated that traffic volumes would likely increase along alternative routes being used by road users to access the A176 or A127.

The results detailed above indicate that there has been a small increase in the volume of vehicles using the alternative routes of High Rd North, Willowfield and Hornbeam Way however Dunton Rd has shown a small decrease in overall volume of vehicles.

Reviewing the average daily speeds (based on a 7 day average) there has been a minimal increase along Dunton Rd and Hornbeam Way, however average speeds along High Rd North and Willowfield showed a marginally decrease in average daily speeds.

Reviewing the 85%tile speeds (based on a 7 day average) there has been a minimal increase along Dunton Rd, however 85%tile speeds along High Rd North, Willowfield and Hornbeam Way all displayed a marginal decrease in 85%tile speeds.

CONCLUSIONS:

- To conclude, a comparison of the before and after data (shown in tables 1 & 2) indicates that the scheme has been successful in reducing 95% of vehicular movements attempting to turn right out of Wash Rd onto A176 Noak Hill Road.
- Collision data collected so far, post construction indicates that no collisions have occurred at the junction where the scheme has been implemented, further monitoring over a longer period will be required to determine the schemes long term effectiveness.
- However from a road safety perspective the information detailed in table 3 displays the fact that there is still 5% of road users who are attempting to turn right out of the junction or attempt a 'u turn manoeuvre' is unacceptable.
- A conclusion of the before and after data shown in table 4, clearly shows that the differences in traffic volumes, average vehicular speeds, and the speeds at which 85% of vehicles are travelling at, are minimal and would not be clearly evident in terms of outside observations from members of the public.

RECOMMENDATIONS:

To address the 5% of road users still undertaken 'prohibited movements' at the junction the following is recommended:

1) It is recommended that the temporary prohibition of right turn order from Wash Rd into Noak Hill Rd be made a permanent order.
2) As a temporary measure It is recommended that additional 'red/white' water filled barriers be positioned within the central hatching just to the north of the 'jislong pole' arrangement. These barriers should be continued north for a distance which continues the length of 'u turn prohibition order' and extends up to and just past the existing bus stop layby.
3) A further 'prohibited manoeuvres' survey should then be undertaken (3-6 months post water filled barrier implementation) to determine if the level of 'u turn manoeuvres' has dissipated or remains.
4) Depending on the analysis of the results of the 'prohibited movements' survey a permanent arrangement of 'jislong poles' should be considered along the central hatching length to extend up to and past the bus stop layby.
5) Consideration should also be giving to making the 'no u turn' prohibition order permanent.

Funding as part of the CMA 19_20 for Casualty Reduction sites in Basildon is currently being sought in order to implement the recommendations in points 1 to 4 above.