PEOPLE STREETS | OSTMAN ROAD

WORKSTAGES 1 – 3 | CLOSURE REPORT

City of York Council (CYC)

June-22

Delivering a better world

Quality information

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Executive Summary

Located approximately two miles west of York city centre, Ostman Road in Acomb has been identified as a potential location for '*People Street'* enhancement measures. Broadly speaking, this involves reducing the impact of motor vehicles to create a more pleasant and appealing environment for people to walk, cycle and negotiate. Reflecting the adjacent location of Carr Junior School and Carr Infant School on the north side of Ostman Road, a key existing issue is the prevalence of parked vehicles during school drop-off and collection periods. Parked vehicles can also impede the passage of the No.5 bus service, the passage of cyclists, and affect access to private driveways on Ostman Road.

A trial layout was implemented by Sustrans in March 2021 whereby two large and four small buildouts were temporarily placed in Ostman Road to significantly reduce the space for parent parking during school drop-off and collection periods and to create areas for people to congregate. Of recipients surveyed during and after the trial (parents, carers and residents), 95.5% stated they would support the implementation of similar interventions.

To inform scheme design and optioneering, site visits and a range of survey data has been collected, collated and analysed. This has included 24-hour speed and traffic flow surveys; a pedestrian movement survey and a parking beat survey, both undertaken in 5-minute intervals before, during and after school drop-off and collection periods; manual classified turning count data; and recorded personally injury accident data. The above evidence base has specifically confirmed that there are the following specific existing issues on Ostman Road:

- 85^{th} percentile traffic speeds exceed the posted 20 mph speed limit by typically +3/4mph.
- Occurrence of kerbside parking during school drop-off and collection periods is highest along the southern kerbline, in particular east of the junction with Tostig Avenue. Existing traffic restrictions in the form of 'School Keep Clear' and double yellow road markings along the northern kerbline are generally adhered to.
- As expected, the highest proportion of pedestrians cross Ostman Road in the vicinity of the school entrances, without any existing formal pedestrian/cycle crossing facilities.

To ensure proposed schemes were not just focussed on engineering measures but also about creating a sense of place, AECOM Traffic Engineers and Landscape specialists worked collaboratively to develop three potential scheme options. These options were discussed with CYC Officers during interim progress meetings and are summarised in the table below with increasing levels of intervention and associated costs reflecting the inclusion of variable design features.

Option	Summary Description	'Low' Cost Estimate	'Medium' Cost Estimate
1	**Retention of existing kerblines** with landscaping enhancements on both sides of Ostman Road	£670K *(£445K for localised interventions only)*	£740K *(£515K for localised interventions only)*
2	**Modular buildouts** along northern kerbline with landscaping enhancements on both sides of Ostman Road	£740K	£765K
3	**Full construction parklet with new kerblines on both sides** (wider footway/verge) with landscaping enhancements on both sides of Ostman Road	£950K	£1.09M

Common features across all three design options include:

- Proposed parallel (Zebra) pedestrian/cycle crossing facilities in close proximity to the school entrances
- Gateway features to improve conspicuity of the 'School Street'
- 'Continuous footways' across side roads / school entrances

- Replacement of the existing concrete block footway with chipped asphalt footway surfacing
- Traffic calming enhancements
- Varying levels of optional parking restrictions.

The three options are to be presented to Elected Members for a decision on how to proceed.

1. Introduction

1.1 Study Area

The study area, shown in Figure 1, is the section of Ostman Road between Viking Road and Danbury Drive, approximately 2 miles west of York city centre, in Acomb. Ostman Road provides access to two school main entrances, Carr Junior School and Carr Infant School are accessed along the northern footway and located to the north-east and north-west of the study area respectively. Ostman Road also serves the No.5 bus both eastbound and westbound.

Figure 1. Ostman Road – Site Boundary

A significant number of parents currently park directly outside the schools during school drop-off / pick-up times causing problems in terms of safety for children crossing the road; safety for cyclists using Ostman Road; blocking of residential driveways; and delays to No. 5 bus due to congestion. Improvements to the environment for cyclists, pedestrians and residents on Ostman Road outside/near Carr Junior and Infant schools are therefore required, through reducing the impact of parked vehicles.

1.2 Site Trial (in 2021)

Sustrans carried out a trial on 10/3/21 in which 2 large and 4 small build-outs were placed in the road ahead of the school drop-off period and were left in place until an hour after the end of the school day. Of recipients surveyed during and after the trial (parents, carers and residents), 95.5% stated they would support the implementation of the street design trialled.

Images from the Sustrans street trial are shown as Figure 2, with an indicative street layout included within the accompanying Sustrans Report provided as Figure 3.

Figure 2. Sustrans Feasibility Study Trial

Figure 3. Sustrans Feasibility Report Indicative Layout

Following this initial trial, CYC commissioned AECOM to deliver up to three Preliminary Design solutions to enable a proposed scheme to be taken to consultation. The project aims and objectives are set out below.

1.3 Project Aims

The aims of the scheme are to address the following:

- A solution that resolves safety and amenity issues caused by parked vehicles during school peak drop-off and pick-up times.
- To improve the safety and amenity of cyclist journeys along Ostman Road.
- To determine a design solution that both supports model shift and enhances the public realm / streetscape.

1.4 Project Objectives

- *Implement a solution to resolve the safety and amenity issue* - Feasibility work will determine options for rectifying the existing issues, with the ultimate objective of gaining approval from CYC Transport Board and implementation of the most appropriate solution.
- *Enhance and encourage active travel* - Evaluate measures to enhance active travel and look to implement design solutions that encourage and facilitate modal shift and to discourage parent parking during school drop-off and pick-up times.

1.5 Report Structure

In order to achieve the project deliverables and objectives, AECOM proposed a staged approach with Key Workstages shown below, with further detail provided within the associated Commissioning Brief, approved by CYC on 3rd February 2022.

This document is the first of two reports to be provided and covers Key Workstages 1-3. Report 2 will be issued after completion of Workstages 4-6, assuming the scheme receives approval to progress beyond preliminary design.

Following on from an initial workshop meeting with CYC at Concept Design Stage on 19th April 2022. This report provides information relating to AECOM's proposed Preliminary Designs and associated supporting information to inform the Executive Members / Transport Board decision process. The remaining sections of this report are structured as follows:

- **Chapter 2** summarises details of the Site Visit & Concept Optioneering
- **Chapter 3** provides results of Survey Data
- **Chapter 4** provides a summary of the Preliminary Design proposals
- **Chapter 5** provides details of High-level Cost Estimates
- **Chapter 6** summarises potential Design Feature Variables as required by CYC
- **Chapter 7** provides a summary of potential Traffic Regulation Orders (TRO);
- **Chapter 8** details both the Existing & Proposed Audits Scores
- **Chapter 9** concludes detailing a Summary and Next Steps.

Supporting technical appendices are referenced as appropriate.

2. Site Visit

2.1 General site observations

Before considering design proposals, AECOM undertook a site visit on 17th February 2022 between 2pm – 4pm to gather information during a typical school PM peak.

Ostman Road is considered to be a low trafficked street, with a moderate proportion of residential parking on-street near to the schools. However, during school pick-up / drop-off times, for a period of around half an hour, significant increases in parking are experienced, between its junctions with Danebury Drive and Tostig Avenue. Existing parking observed during the site visit between the hours of 3–3.30pm is shown in Figure 5, in images A, B and C. Other general site observations included:

- Parking during school drop-off / pick-up times takes place mainly along the southern footway, with parents ignoring double yellow parking restrictions and occasionally parking over driveways.
- Footways are constructed of concrete block paving and are in generally poor condition. This creates level differences and an uneven surface where areas of subsidence and cracking have occurred.
- Existing bollards to prevent parking on the grass verges are in poor condition, with inconsistent styles used, which detracts from the aesthetic of Ostman Road.
- Crossing of Ostman Road is sporadic during school drop-off / pick-up times, with parents and children crossing between parked cars, with formal crossing points unclear and unused. The majority of parents / children crossing directly outside of the school gates in order to access the southern footway where their cars were parked.
- The carriageway is constructed of jointed concrete pavement approx. 5 x 6m slabs, with areas of patching, cracking and inconsistent surface dressing creating a poor quality and uneven surface that also detracts from the aesthetic of the street.

Figure 4 below identifies the location and Figure 5 shows the pictures taken during the site visit.

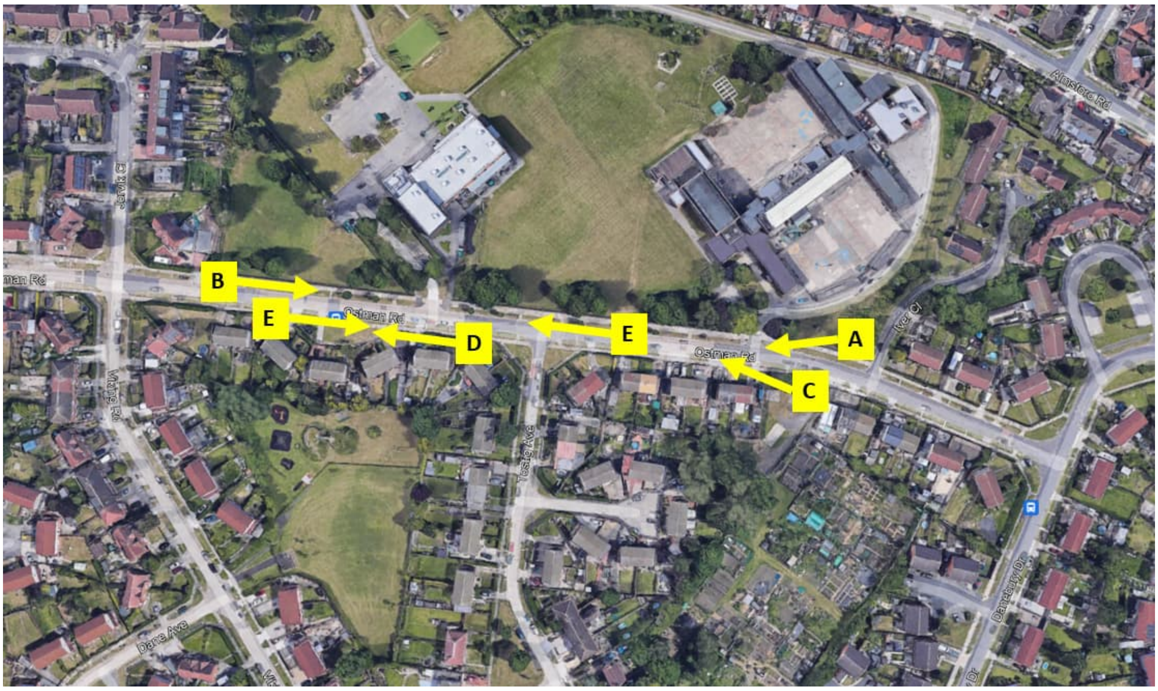


Figure 4. Site Photograph Locations

Location A | Location B

Location C | Location D

Location E | Location F

Figure 5. Site Photographs

2.2 Additional parcels of land

AECOM noted two triangular parcels of land located to the south the carriageway that may be appropriate to include within the study area to provide additional public realm / parking opportunities.

Through further discussions with CYC it was clarified that the parcel of land next to the allotment is leased to a third party and the other parcel is owned by CYC Housing. As such, CYC were not looking to make changes to either of these due to the complications and delays they may incur. On this basis, any public realm and placemaking benefits within the proposals are limited to the original study area.

2.3 Potential expansion of the study area

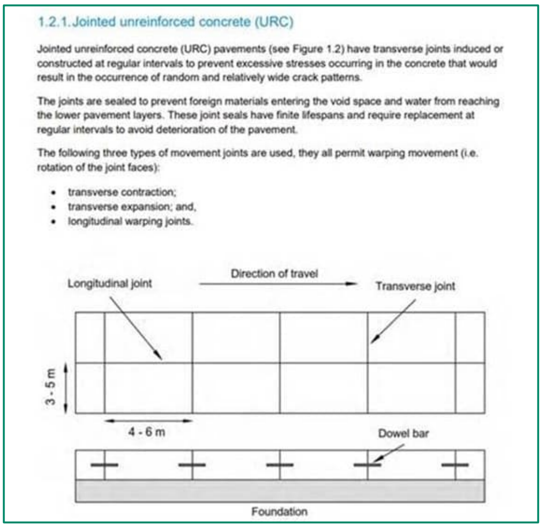
During the site visit several parents highlighted that, in addition to school related parking issues on Ostman Road, similar school related parking issues are experienced along Almsford Road to the north of the respective school sites. In addition, it was noted from the site visit that a large proportion of parents appeared to walk along the northern footway of Ostman Road from Carr Infact School into Carr Junior School during the PM Peak in order to access the northern entrance leading to Almsford Road.

Following this observation, AECOM discussed with CYC extending the study area to cover Almsford Road and the surrounding network to make a more informed assessment of the wider potential impacts relating to school drop off / pick up. CYC noted and agreed that they are aware that there may be wider issues and areas impacted that are not covered within the Ostman Road study area, but that the immediate priority and associated budget needs to be focussed on and limited to Ostman Road.

2.4 Concrete slab surfacing

The site visit confirmed that the carriageway is constructed of jointed concrete pavement approx. 5 x 6m slabs, as per Figure 6 (although the Ostman Road pavement does not have a longitudinal joint). Unfortunately, this is likely to be problematic when wanting to undertake either resurfacing or constructing buildouts.

In addition, concrete surfacing is present across driveways along Ostman Road, which will require breaking out if the footway is to be replaced or re-surfaced.


1.2.1. Jointed unreinforced concrete (URC)

Jointed unreinforced concrete (URC) pavements (see Figure 1.2) have transverse joints induced or constructed at regular intervals to prevent excessive stresses occurring in the concrete that would result in the occurrence of random and relatively wide crack patterns.

The joints are sealed to prevent foreign materials entering the void space and water from reaching the lower pavement layers. These joint seals have finite lifespans and require replacement at regular intervals to avoid deterioration of the pavement.

The following three types of movement joints are used, they all permit warping movement (i.e. rotation of the joint faces):

- transverse contraction;
- transverse expansion; and,
- longitudinal warping joints.

Figure 6. Concrete Slab Surfacing

Following discussion with the client and a review from AECOM Pavement specialists, four potential solutions were presented as below, along with their respective advantages and disadvantages:

1. Break out concrete over full length and reconstruct with flexible (asphalt) pavement
2. Break out concrete over targeted sections only (where constructing buildouts)
3. Leave carriageway surface and use bolt-down products to create buildouts
4. No buildouts and limit scheme to changing surface appearance (for example through micro-surfacing) plus new road markings.

CYC reviewed the information and instructed AECOM to omit Option 1 due to cost implications and to continue with Options 2-4 above as the three Concept / Preliminary Design options to be taken forward.

3. Survey Data

3.1 Key Findings

1. Illegal parking occurrences are highest along Ostman Road between the Carr Junior and Infant School (see Zones D & E in Figure .7)
2. Traffic flows are considered low. Therefore, an on-street quiet route for cyclists meets LTN 1/20 requirements.
3. 85th percentile traffic speeds are slightly higher than the legal speed limit. Therefore, further traffic calming measures and signage would be beneficial.
4. The highest proportion of pedestrians cross near to the school entrances, in Zones C, D & E.
5. Recorded personal injury accident data does not suggest any pattern or trend in accidents, with only one incident 'slight' in severity recorded within the most recent 60-month period.

3.2 Data Collection

Traffic survey data was collected in order to inform design proposals, with the following surveys undertaken between Monday 25th April – Sun 1st May 2022:

- **Manual classified turning count data** at the Ostman Road/Viking Road & Ostman Road/Danebury Drive junctions between the hours of 7.00am–7.00pm.
- **A parking beat survey** across the study area observed in 5-minute time periods during both the AM and PM peak periods, between the hours of 08:00am-10:00am and 2.45pm–4.00pm (which covers half an hour before and after school opening / closing times).
- **A pedestrian crossing survey** observed in 5-minute time periods during both the AM and PM peak periods, between the hours of 08:00am-10:00am and 2.45pm–4.00pm (which covers half an hour before and after school opening / closing times).

In addition, **24-hour speed surveys and traffic flows** were also undertaken between Friday 13th May – Mon 23rd May 2022 at two locations along Ostman Road near to the school entrances and **personal injury accident data** was obtained along Ostman Road for the most recent 60-month period between 01/01/2017 and 31/12/2021.

n order to assess both the parking beat and pedestrian crossing surveys, the study area was split into separate Zones A – F as shown in

Figure 7.

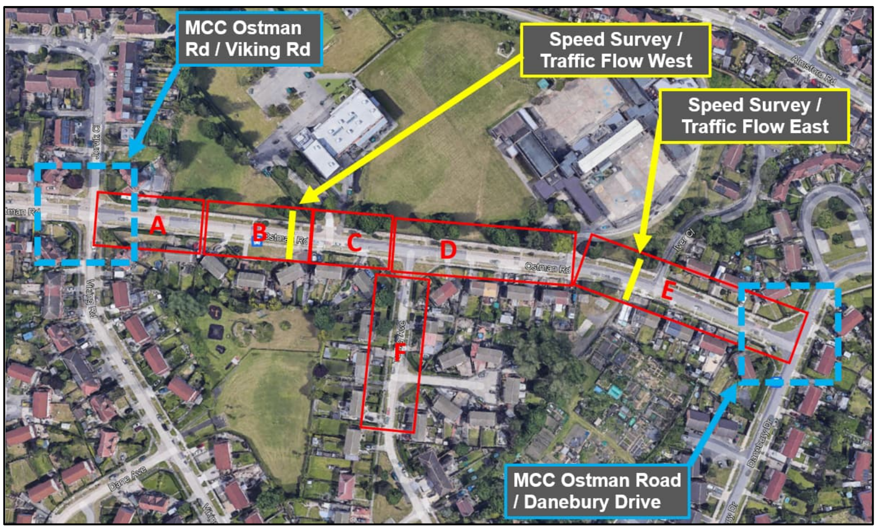


Figure 7. Zones A – F (Pedestrian & Parking Beat Survey locations)

3.3 Manual Classified Counts

Manual classified counts were assessed in order to determine the typical traffic flows along Ostman Road during a neutral month. The resulting traffic flows were then used to determine the existing traffic flows and HGV percentages outside of the school and, in conjunction with speed survey information, to determine whether classifying Ostman Road as an 'on-street quiet route' was suitable in relation to LTN 1/20 audit criteria.

The highest traffic counts within the survey period were determined to be between 08:00–09:00 and 15:15-16:15, during AM and PM peaks respectively on Wednesday 27th April. The traffic flows at the Ostman Road/Viking Road and Ostman Road/Danebury Drive junctions are shown in Figure 8-Figure 11 for the AM and PM peak periods respectively.

Total Vehicles - Excluding Pedal Cycles					
	A	B	C	D	Total
A	0	1	1	3	5
B	1	0	1	61	63
C	0	2	0	19	21
D	3	75	6	0	84
Total	4	78	8	83	

Total Pedal Cycles					
	A	B	C	D	Total
A	0	0	3	1	4
B	0	0	1	3	4
C	5	1	0	3	9
D	2	4	2	0	8
Total	7	5	6	7	0

Total HGV + Buses					
	A	B	C	D	Total
A	0	0	0	0	0
B	0	0	0	2	2
C	0	0	0	0	0
D	0	2	0	0	2
Total	0	2	0	2	0

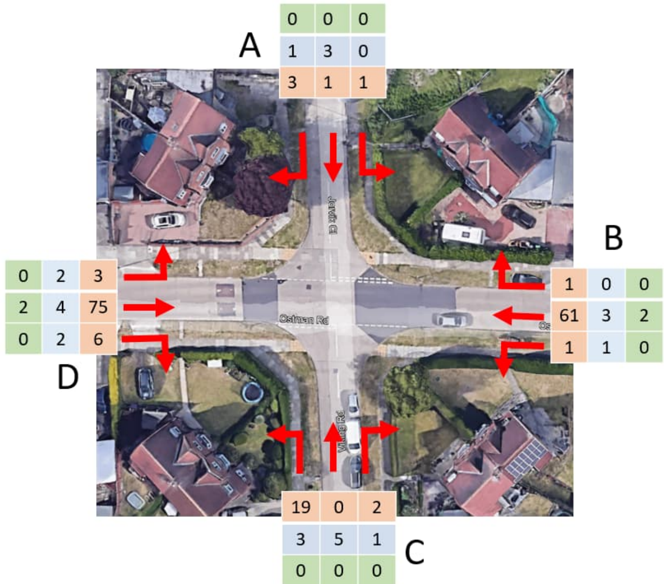


Figure 8. AM Peak (08:00-09:00) Traffic Flows – Ostman Road / Viking Road junction

As shown in **Figure 7** above, during the AM peak a total of 78 vehicles and 5 cyclists travelled eastbound along Ostman Road into the study area from the Viking Road junction, with 64 vehicles and 4 cyclists travelling westbound along Ostman Road out of the study area. All HGV movements were associated with the No.5 bus.

Total Vehicles - Excluding Pedal Cycles					
	A	B	C	D	Total
A	0	3	0	5	8
B	3	0	5	49	57
C	0	0	0	19	19
D	3	58	12	0	73
Total	6	61	17	73	

Total Pedal Cycles					
	A	B	C	D	Total
A	0	1	5	0	6
B	0	0	0	1	1
C	0	0	0	1	1
D	3	12	9	0	24
Total	3	13	14	2	

Total HGV + Buses					
	A	B	C	D	Total
A	0	0	0	0	0
B	0	0	0	2	2
C	0	0	0	0	0
D	0	2	0	0	2
Total	0	2	0	2	

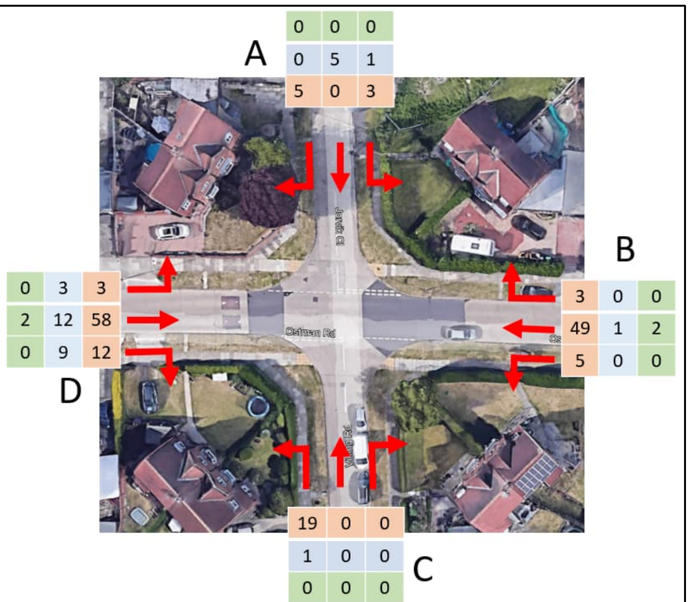


Figure 9. PM Peak (15:15 - 16:15) Traffic Flows – Ostman Road / Viking Road junction

As shown in **Figure 8** above, during the PM peak a total of 61 vehicles and 13 cyclists travelled eastbound into the study area, with 47 vehicles and 1 cyclist travelling westbound along Ostman Road out of the study area. All HGV movements were associated with the No.5 bus.

Total Vehicles - Excluding Pedal Cycles				
	A	B	C	Total
A	0	52	33	85
B	87	0	39	126
C	34	34	0	68
Total	121	86	72	

Total Pedal Cycles				
	A	B	C	Total
A	0	3	5	8
B	9	0	2	11
C	3	0	0	3
Total	12	3	7	

Total HGV + Buses				
	A	B	C	Total
A	0	1	0	1
B	1	0	2	3
C	0	2	0	2
Total	1	3	2	

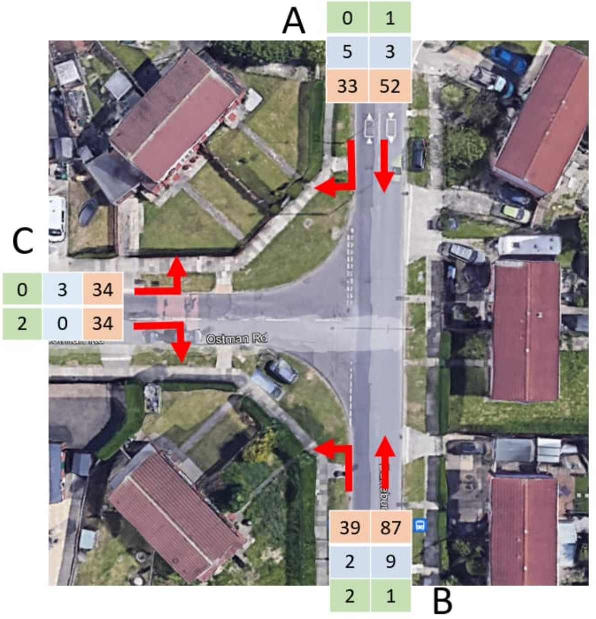


Figure 10. AM Peak (08:00-09:00) Traffic Flows – Ostman Road / Danebury Drive

As shown in **Figure 9** above, during the AM peak a total of 64 vehicles and 3 cyclists travelled eastbound along Ostman Road towards Danebury Drive, with 72 vehicles and 7 cyclists travelling westbound along Ostman Road from Danebury Drive. All HGV movements were associated with the No.5 bus.

Total Vehicles - Excluding Pedal Cycles				
	A	B	C	Total
A	0	61	24	85
B	82	0	16	98
C	28	16	0	44
Total	110	77	40	

Total Pedal Cycles				
	A	B	C	Total
A	0	3	7	10
B	2	0	1	3
C	5	2	0	7
Total	7	5	8	

Total HGV + Buses				
	A	B	C	Total
A	0	1	0	1
B	0	0	2	2
C	0	2	0	2
Total	0	3	2	

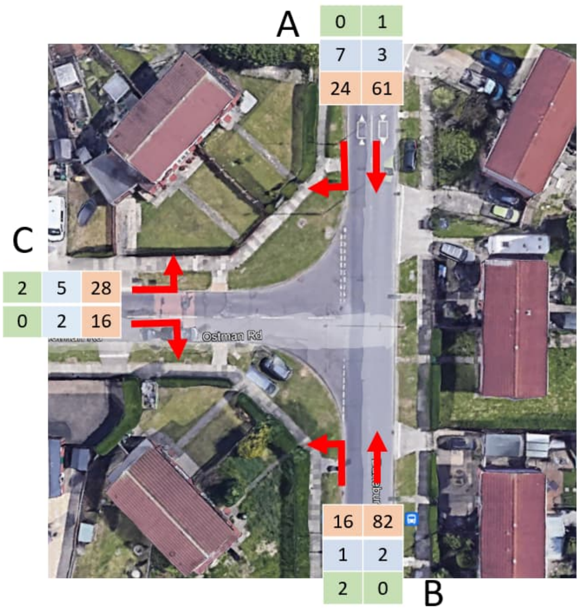


Figure 11. PM Peak (15:15 - 16:15) Traffic Flows – Ostman Road / Danebury Drive

As shown in **Figure10**, during the PM peak a total of 44 vehicles and 7 cyclists travelled eastbound along Ostman Road towards Danebury Drive, with 40 vehicles and 8 cyclists travelling westbound along Ostman Road from Danebury Drive. All HGV movements were associated with the No.5 bus.

In summary, the recorded turning count data at the two junctions which 'bookend' the Ostman Road study area indicates that peak periods traffic flows are considered to be low, with only small proportions of heavy vehicle movements that are accounted for by the No.5 Bus service. Data also indicates there are small proportions of cyclists using the street during peak hours, with between 1-8 cyclists per hour routing along Ostman Road during the peak periods.

3.4 Pedestrian Survey

Pedestrian crossing counts were assessed in order to determine the volume and location of pedestrians crossing across both Ostman Road and Tostig Avenue. The results can then be used to determine the most beneficial location for proposed pedestrian crossing facilities.

The highest crossing volumes within the survey period were determined to be on Thursday 28th April between 08:00–10:00 and 14:45-16:00 for the AM and PM peaks respectively. The location and volume of crossing pedestrians during these time periods is shown in Figure 12 and Figure 13, with the study area split into Zone's A to F.

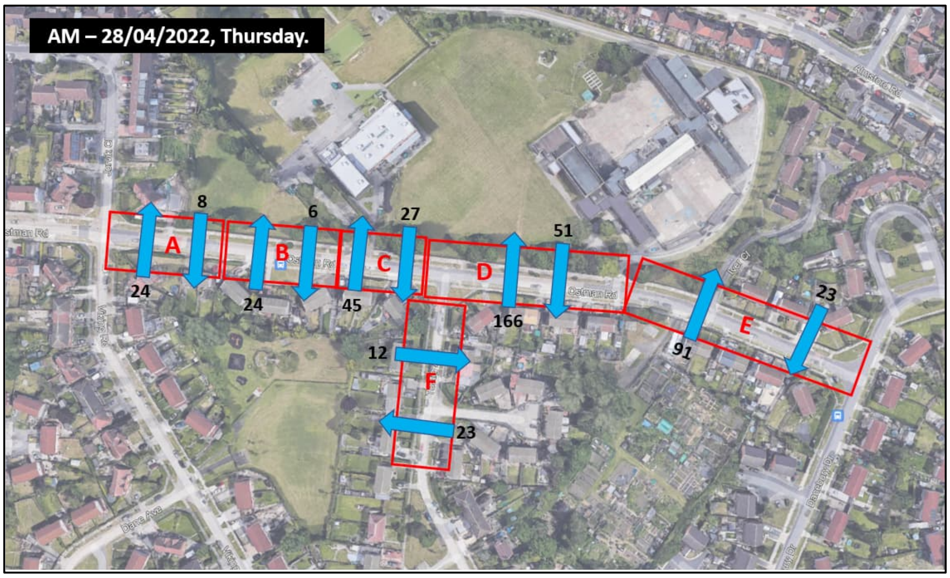


Figure 12. PM Peak (15:15-16:15) Traffic Flows – Ostman Road / Danebury Drive

In total, Zones C, D and E had the highest number of pedestrian crossing movements during the AM peak, with 72, 217 and 114 crossing movements respectively.

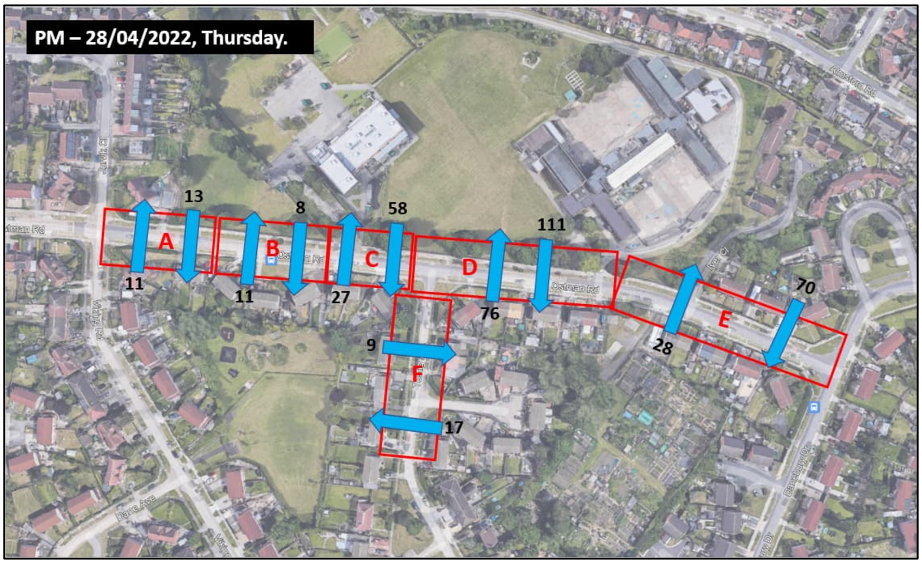


Figure 13. PM Peak (15:15 - 16:15) Traffic Flows – Ostman Road / Danebury Drive

In total, Zones C , D and E again had the highest number of crossing movements during the PM peak, with 85, 187 and 98 movements respectively.

In summary, data indicates that crossing demand is highest within the zones nearest the school entrances. This corresponds with on-site observations, with the majority of crossing undertaken in Zones C, D & E. As such, proposed crossing points should be focused near to these locations.

3.5 Parking Beat Survey

A parking beat survey was undertaken to determine the location of on-street parking and illegal parking occurrences along Ostman Road and Tostig Avenue. The results can then be used to determine the most beneficial location for Traffic Regulation Orders (TRO's).

The highest classified traffic counts within the survey period were determined to be on Wednesday 27th April, between 08:00–09:00 and 15:15-16:15, during AM and PM peaks respectively. As such, the following table shows the corresponding level of parking and illegal parking occurrences within the busiest 5-minute period within each zone during these time periods. However, due to the PM parking beat survey not extending beyond 16:00, the time assessed for the PM peak is between 15:00-16:00.

Ostman Rd	Zone A	Zone B	Zone C	Zone D	Zone E	Total		Tostig Avenue - Zone F	
No. of Parked Vehicles									
Southern Footway	7	8	7	8	12	**42**		**Eastern Footway**	2
Northern Footway	0	0	0	0	0	**0**		**Western Footway**	7
No. of illegal Parking Occurrences									
Southern Footway	2	0	0	4	2	**8**		**Eastern Footway**	0
Northern Footway	0	0	0	0	0	**0**		**Western Footway**	0

Table 1. Parking Beat Survey – Wednesday 27th April 2022 - 08:00-09:00

Ostman Rd	Zone A	Zone B	Zone C	Zone D	Zone E	Total		Tostig Avenue - Zone F	
No. of Parked Vehicles									
Southern Footway	3	8	7	10	9	37		**Eastern Footway**	2
Northern Footway	1	0	0	0	2	2		**Western Footway**	5
No. of illegal Parking Occurrences									
Southern Footway	0	1	1	4	3	9		**Eastern Footway**	0
Northern Footway	0	0	0	0	0	0		**Western Footway**	0

Table 2. Parking Beat Survey – Wednesday 27th April 2022 - 15:00-16:00

In addition, the highest level of overall parking during the weekday period were experienced on Friday 29th April 2022, between the hours of 08:25 – 09:25 and 14:45 – 15:45 during the AM and PM peaks respectively. As such, the following tables provide a summary of corresponding highest level of parking and illegal parking occurrences within each zone for these time periods.

Ostman Rd	Zone A	Zone B	Zone C	Zone D	Zone E	Total	Tostig Avenue - Zone F	
No. of Parked Vehicles								
Southern Footway	8	8	7	7	11	41	**Eastern Footway**	2
Northern Footway	0	0	0	1	1	2	**Western Footway**	5
No. of illegal Parking Occurrences								
Southern Footway	2	1	0	2	2	7	**Eastern Footway**	0
Northern Footway	0	0	0	0	0	0	**Western Footway**	0

Table 3. Parking Beat Survey – Friday 29th April 2022 - 08:25 - 09:25

Ostman Rd	Zone A	Zone B	Zone C	Zone D	Zone E	Total	Tostig Avenue - Zone F	
No. of Parked Vehicles								
Southern Footway	4	6	6	6	11	33	**Eastern Footway**	2
Northern Footway	0	0	0	0	4	4	**Western Footway**	5
No. of illegal Parking Occurrences								
Southern Footway	2	1	1	2	2	8	**Eastern Footway**	0
Northern Footway	0	0	0	0	0	0	**Western Footway**	0

Table 4. Parking Beat Survey – Wednesday 27th April 2022 – 14:45 – 15:45

When comparing the above parking levels to those experienced between 08:00–09:00 and 15:00-16:00, during AM and PM peaks respectively on Wednesday 27th April, parking levels during the hour calculated to have experienced the overall highest levels of parking are broadly comparable. This indicates that levels of parking and illegal parking occurrences throughout a weekday period are consistent.

The data indicates that traffic restrictions along the northern footway of Ostman Road that include double yellow lines and 'School Keep Clear' markings are adhered to during school drop off and pick-up time. However, parking restrictions along the southern footway are ignored, with between 7 – 10 drivers ignoring existing TRO's during peak periods. During these periods the number of parked vehicles is also high. Therefore, illegal parking occurrences are likely due the demand for parental parking outside of the schools. This corresponds with on-site observations, with the majority of illegal parking occurrences taking place within Zone D & E.

3.6 Speed Survey

In addition to the traffic count data, traffic speed data was recorded at two locations along Ostman Road, shown within

Figure 7. The tables below provide the mean and 85th percentile speeds at the survey locations for differing time periods over the weekday and weekend in either direction between Friday 13th May – Monday 23rd May. Table 5 and Table 6 provide details from the survey undertaken on Ostman Road (East) east of Carr Junior School. **Table 7** and **Table 8** provide details from the survey undertaken on Ostman Road (West) west of Carr Infant School.

	Weekday				Weekend			
	Mean Speed (mph)		**85TH Percentile Speed (mph)**		**Mean Speed (mph)**		**85TH Percentile Speed (mph)**	
Mean Speed (mph)	**East**	**West**	**East**	**West**	**East**	**West**	**East**	**West**
Midnight - 7am	18	17	23	21	18	17	23	21
7am-9am	17	15	21	19	19	16	24	20
10am-3pm	16	15	20	20	17	16	21	21
4pm-6pm	16	15	21	19	17	16	22	21
8pm-Midnight	17	18	22	22	17	18	22	22
8am – 3.30pm (School Period)	16	15	20	19	N/A	N/A	N/A	N/A

Table 5. Speed Survey Data (East) Time Period – Friday 13th May – Mon 23rd May 2022

	Weekday				Weekend			
	All-day		**School Period 8am – 3.30pm**		**All-day**		**School Period 8am – 3.30pm**	
	East	**West**	**East**	**West**	**East**	**West**	**East**	**West**
Mean Speed (mph)	17	15	16	15	17	17	N/A	N/A
85th Percentile Speed (mph)	21	20	20	19	22	21	N/A	N/A
95th Percentile Speed (mph)	24	23	23	22	25	24	N/A	N/A
Top Speed (mph)	36	33	32	32	38	30	N/A	N/A
% Above ACPO enforcement speed	5%	2%	3%	1%	6%	4%	N/A	N/A
Percentage above speed limit	21%	15%	16%	10%	25%	21%	N/A	N/A

Table 6. Speed Survey Data (East) Summary – Friday 13th May – Mon 23rd May 2022

In summary, recorded data indicates that the 'All-day' and 'School Period' 85th percentile speeds along Ostman Road (East) east of Carr Junior School were within 1mph of the 20mph speed limit during the weekday and 2mph above the speed limit during the weekend. The highest 85th percentile speeds were seen between Midnight - 7am during the weekday, with speeds of 3mph above the limit and between 7am - 9am during the weekend, with speeds of up to 4mph over the limit.

	Weekday				Weekend			
	Mean Speed (mph)		85^{TH} Percentile Speed (mph)		Mean Speed (mph)		85^{TH} Percentile Speed (mph)	
	East	West	East	West	East	West	East	West
Midnight - 7am	17	17	24	21	17	18	23	22
7am-9am	19	16	23	20	20	19	25	22
10am-3pm	19	17	24	21	20	18	24	22
4pm-6pm	20	18	24	22	20	19	24	22
8pm-Midnight	18	18	22	23	20	19	25	23
8am – 3.30pm	18	16	23	21	N/A	N/A	N/A	N/A

Table 7. Speed Survey Data (West) Time Period – Friday 13th May – Mon 23rd May 2022

	Weekday				Weekend			
	All-day		School Period 8am – 3.30pm		All-day		School Period 8am – 3.30pm	
	East	West	East	West	East	West	East	West
Mean Speed (mph)	19	17	20	18	18	16	N/A	N/A
85th Percentile Speed (mph)	23	21	24	22	23	21	N/A	N/A
95th Percentile Speed (mph)	26	24	27	25	26	23	N/A	N/A
Top Speed (mph)	41	47	46	34	39	41	N/A	N/A
% Above ACPO enforcement speed	10%	4%	13%	7%	9%	2%	N/A	N/A
8am – 3.30pm (School Period)	31%	20%	39%	25%	29%	16%	N/A	N/A

Table 8. Speed Survey Data (West) Summary – Friday 13th May – Mon 23rd May 2022

Table 7 and Table 8 indicate that the 85th percentile speeds along Ostman Road (West) west of Carr Infant School were 3mph and 4mph over the 20mph speed limit during the weekday ‘All-day’ and ‘School Period’ respectively and 3mph above the speed limit during the weekend.

The highest 85^{th} percentile speeds of 4mph over the speed limit were consistent throughout several time periods during the weekday, whereas during the weekend 85^{th} percentile speeds of 5mph over the speed limit were the highest between 7am - 9am.

In summary, speed data suggests that 85th percentile speeds are slightly above the 20mph speed limit. Ostman Road is a relatively straight road with a decline in gradient eastbound and as such this may encourage higher vehicle speeds. Therefore, additional traffic calming measures and / or signage along Ostman Road would be beneficial to further reduce vehicle speeds, particularly given its direct access to Carr Infant and Junior Schools.

3.7 Average Daily Traffic Flows

Traffic flow data along Ostman Road was collected at both survey positions identified on

Figure 7, with the following average daily flows both east and west at both survey locations as summarised in **Table 9** below.

	Ostman Road (East) East of Carr Junior School			Ostman Road (West) West of Carr Infant School		
Direction of Travel	**East**	**West**	**Total**	**East**	**West**	**Total**
Average	314	298	**612**	436	344	**780**
Average Weekday	365	344	**709**	506	386	**892**
Average Weekend	245	234	**479**	333	283	**616**

Table 9. Ostman Road - Traffic Flow Summary

In summary, recorded traffic flow data suggests that average weekday and weekend traffic flows are between 709-892 vehicles on a weekday and 479–616 vehicles on a weekend over a 24-hour period. As such, traffic flows along Ostman Road are considered low.

These levels of traffic flow are well below the 2,000 PCU threshold at a speed limit of 20mph identified in Table 10 below, taken from LTN 1/20 guidance. Therefore, data indicates that Ostman Road is suitable to provide a mixed traffic environment 'suitable for most people'.

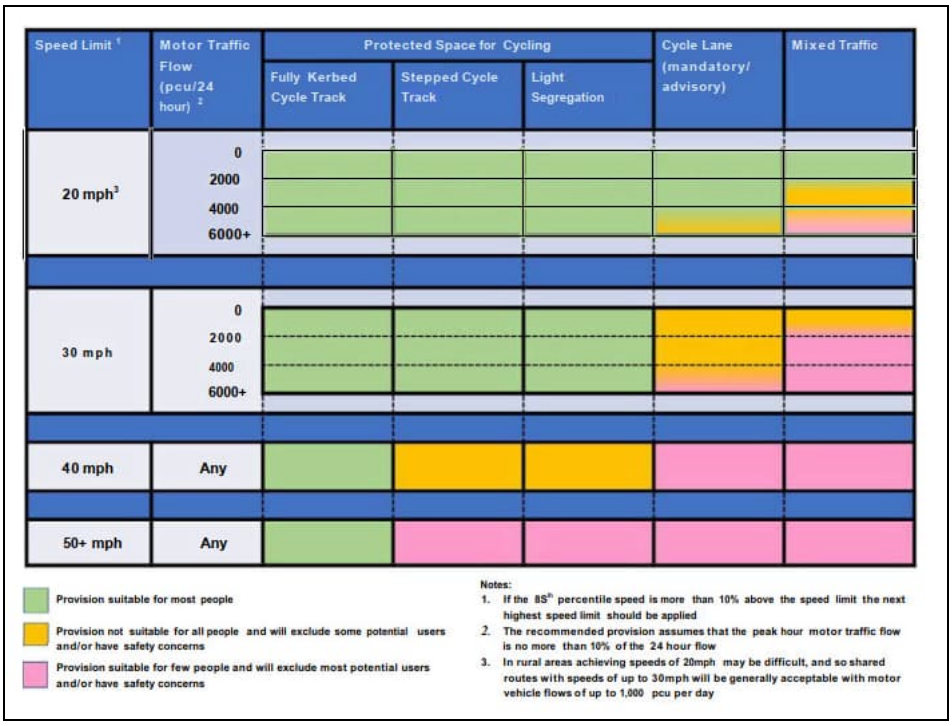


Table 10. LTN 1/20 - Appropriate Protection from Motor Traffic on Highways

Given the above and with additional traffic calming measures and/or additional signage along Ostman Road to help further reduce average speeds, together with widened 3m shared footways for pedestrians/school children on scooters or bikes, Ostman Road would not only cater for more experienced cyclists in a mixed on-street environment, but also less confident children making their way to/from Carr Infant and Junior Schools along a shared use facility.

3.8 Recorded Personal Injury Accident Data

Recorded Personal Injury Accident data was also obtained for the study area for the most recently available 60-month period, between the 01/01/2017 and 31/12/2021.

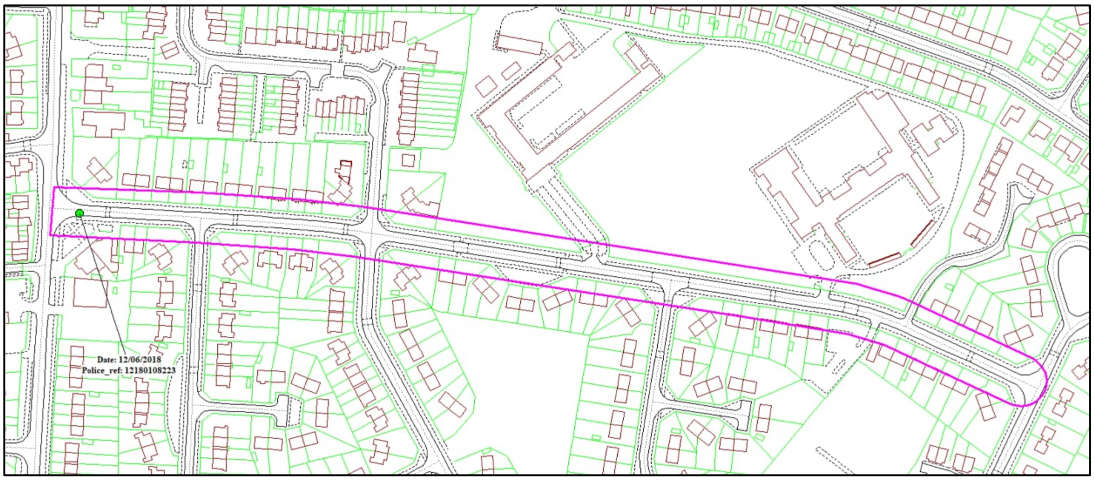


Figure 14. Ostman Road – Accident Data 01/01/2017 and 31/12/2021

In total, there has been one recorded personal injury accident along Ostman Road within the most recent 60-month period; this accident took place on 12/06/2018 and was considered slight in severity. The accident was between a moving vehicle and a parked car due likely to a failure to look and / or careless driving.

In summary, recorded personal injury accident data does not suggest any pattern or theme which is likely to be exacerbated by scheme proposals. In fact, a reduction in parking spaces is likely to reduce the risk further of vehicles striking parked cars.

4. Preliminary Design

Based on the findings of the site visit and following subsequent agreement with CYC at the design workshop of 20th April 2022, three Concept Design proposals were progressed providing a range of options with varying levels of infrastructure intervention and resulting costs.

The options considered were as follows:

- **Option 1** – Retention of existing kerblines with landscaping enhancements on both sides of Ostman Road
- **Option 2** – Modular buildouts along northern kerbline with landscaping enhancements on both sides of Ostman Road
- **Option 3** – Full construction parklet with new kerblines on both sides (wider footway/verge) with landscaping enhancements on both sides of Ostman Road

In addition, other similarities within the three concept design options were:

- Proposed parallel crossing facilities in close proximity to the school entrances
- Gateway features to enhance conspicuity of the 'School Street'
- Continuous footways across side roads / school entrances
- Replacement of the existing concrete paved within the study area with chipped asphalt, including removal and breakout of concrete across driveways.
- Traffic calming enhancements
- Varying levels of optional parking restrictions.

Concept design proposals were presented to CYC for comment prior to progression to Preliminary Design. The aim was to provide CYC with three design solutions with varying magnitudes of engineering requirement and cost / benefit, whilst also providing a low, medium and high-cost variants of each option considered.

Following a client meeting / review of concept design proposals, high-level cost estimates and initial audit results on 20/04/2022, CYC advised that the three concept design proposals should be progressed to preliminary stage with no significant changes to proposed designs.

In addition to preliminary design drawings, CYC requested further detail as to why certain elements have been included, and what the implications may be if removed or altered (cost, LTN 1/20, aesthetic appeal etc). This report can then assist in CYC's decision making process and recommendations Transport Board submission.

Following this instruction and supplemented by survey data, three preliminary design proposals were progressed, informed by survey data. The proposed preliminary design scheme option drawings are provided in **Appendix A**.

As instructed by CYC, for the purposes of comparison, the lower and medium cost variants of each option have been provided within this report. CYC did not consider the higher cost variant to be appropriate to progress at this stage. As such, high-level cost estimates are presented within **Section 5.**

It was also noted that each option had a number of design feature variables that would either negatively or positively impact the overall cost. Therefore, further information in regard to design feature variables are presented in **Section 6**.

5. High-Level Cost Estimates

The following section details the high-level Preliminary Design cost estimates for both the medium and low-cost variables as requested by CYC within Table 11 - Table 14. Cost estimate outputs are also provided at **Appendix B**.

An additional cost (highlighted in blue) has also been included for Option 1 which represents the predicted cost if the footway replacement within the study area was reduced to one third of the area between Danebury Drive and Viking Road. This is approximately 125m, which would cover each side of the road between the two schools and has been included as an example of how altering one of the variants can impact the total cost estimate. Any reduction in provision should be considered with care and impacts assessed against the audit criteria.

It should be noted that each option has a number of variants that will either negatively or positively impact the overall cost, which are outlined in Chapter 6.

	Low Cost	Medium Cost
Option 1	**£670,000** **(£445K for localised interventions only)**	**£740,000** **(£515K for localised interventions only)**
Option 2	**£740,000**	**£780,000**
Option 3	**£950,000**	**£1,090,000**

Table 11. Summary of Option 1 – 3 Low and Medium Cost Comparison

	Option 1 – Low Cost	Option 1 – Medium Cost
Construction Costs (including typical uplifts)	**£670,000** **(£515K for localised interventions only)**	**£740,000** **(£515K for localised interventions only)**
	Construction Costs + Prelims (20%) + Design Development (14%) + Risk Allowance (40%)	
Option Description	**<u>Landscaping Elements</u>** ✓ Northern footway school to school supply and planting: 121m length x 1.3m width. ✓ 8 no. Trees ✓ Modular concrete benches 33% of distance between schools. **<u>Carriageway works</u>** ✓ Replacement of cracked kerbs (50m) ✓ Replacement of gully grates (18no.) ✓ Renew existing road surfacing at cushions / speed tables – Approx. 315sqm ✓ 2 x parallel crossings ✓ Gateway features ✓ Continuous footways, through breakout of concrete driveways / school entrances. ✓ Replacement of existing concrete block footway within the study area, replaced with chipped asphalt surfacing.	**<u>Landscaping Elements</u>** ✓ Gateway to Gateway Planting along northern and southern footways: 250m Supply and plant ✓ 10 no. Trees ✓ Modular concrete benches 50% of distance between schools **<u>Carriageway works</u>** ✓ As per Low-Cost Option

Table 12. Option 1 Low and Medium Cost Options

	Option 2 – Low Cost	Option 2 – Medium Cost
Construction Costs (including typical uplifts)	**£740,000**	**£765,000**
	Construction Costs + Prelims (20%) + Design Development (14%) + Risk Allowance (40%)	
Option Description	**Landscaping Elements** As per Option 1, plus: ✓ 2 x General Modular Street Buildouts (14k) ✓ 1 x Basic Modular Compound Parklet (15k) **Carriageway works** As per Option 1 – Low-Cost Option	**Landscaping Elements** As per Option 1, plus: ✓ 2 x General Modular Street Buildouts (14k) ✓ 1 x Mid-range Modular Compound Parklet (25k) **Carriageway works** As per Option 1 – Medium Cost Option

Table 13. Option 2 Low and Medium Cost Options

	Option 3 – Low Cost	Option 3 – Medium Cost
Construction Costs (including typical uplifts)	**£950,000**	**£1,090,000**
	Construction Costs + Prelims (35% - TM Increase to 20% considering scale of carriageway works) + Design Development (14%) + Risk Allowance (40%)	
Option Description	**Landscaping Elements** As per Option 1, plus: ✓ 1 x Parklet Landscaping Elements (15k) **Carriageway works** As per Option 2 'Low Cost' Option plus additional elements below: ✓ Breakout of concrete slab for distance of approx. 75m to form buildout with typical carriageway build-up. ✓ Replacement of kerbs (780m) ✓ Replacement of gully grates (35no.) ✓ Carriageway surfacing between gateway features. ✓ 2 x parallel crossings ✓ Gateway features ✓ Continuous footways, through breakout of concrete driveways / school entrances. ✓ Replacement of existing concrete block footway within the study area, replaced with chipped asphalt.	**Landscaping Elements** As per Option 1, plus: ✓ Gateway to Gateway Planting along northern and southern footways: 309m Supply and plant ✓ 1 x Parklet Landscaping Elements (25k) **Carriageway works** As per Option 2 'Medium Cost' Option plus additional elements included within Option 3 – Low Cost'.

Table 14. Option 3 Low and Medium Cost Options

6. Design Feature Variables

This section provides further information in relation to design feature variables, highlighting the advantages / disadvantages and resulting impacts on cost implications and audit appraisals.

Given the budget parameters, a key criteria for selecting which option to progress to detailed design is cost. By investigating the variables that impact cost, this informs the decision-making process. It is recognised that the selection of lower cost options is most likely to impact quality and potentially limit the benefits achieved when reviewed against audit criteria.

Due to the nature public realm features, a number of the design feature variables can be bespoke single item features or more function based higher production products, with a number of lower or higher cost alternatives with varying aesthetic and functional attributes. On this basis, a range of variables have been provided that are intended inform and enable discussions around the type of infrastructure and to better understand the potential impact on aesthetic and audit indicators respectively.

It should be noted that design feature variables are not limited to the examples shown within this document and a further detailed study of variable design features should be undertaken once a single option is selected for progression to detailed design.

The main design feature variables consist of the following:

- Planting
- Modular Concrete Benches
- Chipped Asphalt Footway
- Micro Re-surfacing and Concrete Block Breakout
- Parklets and Modular Buildouts
- Additional Optional Elements – Play features.

A detailed review of these variables is provided at **Appendix C**, with a summary of this information included on the following page.

The summary table highlights the main variables against the following indicators:

- Proposal & why included
- Implications if removed / altered
- Estimated cost (raw cost without uplifts).

Ostman Road - Design Feature Variables

	Planting	Modular Concrete Benches	Chipped Asphalt Footway	Micro Re-surfacing / Concrete Breakout	Parklets and Modular Buildouts
					
General Information					
Proposal & why included	Planting is to run along the edge of the northern and southern footways between the proposed gateway features in all three of the design proposals. It will draw the eye away from the carriageway, increase green space and provide a buffer for pedestrians, which will be positively reflected within the 'Ostman Road School Street Audit' criteria relating to aesthetics and safety. New planting would also remove the need for existing bollards, most of which need replacing. Providing a green buffer will not only add aesthetic value but also give environmental benefits. We have proposed to remove 8 trees and plant 10 as replacements along the street between the schools. These trees would be 5m+ high and have an instant aesthetic impact to the street.	Modular concrete benches are priced in all options and are to run along the Northern footway between the planting and shared space. They will act as a vertical buffer for pedestrians, lead pedestrians to official crossing points and provide a physical barrier to deter drop off and pick up parking. Modular benches will also provide much needed places for rest and relation something that isn't currently featured along Ostman Road. Similarly, to the proposed planting they will be positively reflected within the 'Ostman Road School Street Audit' criteria.	The installation of chipped asphalt surface is proposed along both the northern and southern footways in each proposal between Danebury Avenue and Viking Road, with an increase in footway width from 2m to 3m. This element of the proposal is to provide a widened and improved shared surface for children / parents / pedestrians, ensuring the space is sufficient for children (cycling and scootering) to ride alongside their parents. The new chipped asphalt will also provide a smoother surface in comparison with the existing concrete block paving and allow proposed continuous footways to be delineated more clearly, emphasising pedestrian priority. This will be positively reflected within the 'Ostman Road School Street Audit' criteria relating to comfort and safety.	Both carriageway micro-resurfacing and concrete block paving features within Option 3. This will increase the aesthetic appeal and provide a smoother surface for on-carriageway cyclists, which will be positively reflected within the 'LTN 1/20 CLoS Audit Assessment' criteria relating surface type. Removal of the concrete block also allows for a full depth construction parklet within Option 3. In terms of reducing the overall costs, Options 1 & 2 offer solutions that do not breakout the concrete slab and only provide small sections of reinstating of existing surfacing at speed tables. However, Option 3 proposes a localised 70m breakout of the concrete only.	Parklets are proposed to be installed on the northern side of the carriageway in Options 2 and 3. Parklets provide a place for rest and recovery and increased aesthetical appeal / green space within the streetscape, all of which are key indicators included within the 'Ostman Road School Street Audit'. In addition to proposed parklets in Options 2 and 3, two. modular buildouts are proposed. The two buildouts currently proposed are the Corona modular circular planter from BROXAP street furniture. This is a segmented composite which can be done in any RAL colour and has an associated cost of approximately 7k. The planters serve to slow vehicular traffic on either approach, defining the 'School Street' area between the gateway features. Planters also offer additional aesthetic and environmental benefits, which are positively reflected within the 'Ostman Road School Street Audit'.
Implications if removed / altered	If not undertaken, replacement bollards will be required. An indicative cost of a bollard is £180 excluding VAT (Reference: Woodscape-Square Fixed Bollard). Mimicking of planting on either side of the carriageway will create a uniformed cohesion on the street. The specification of this planting could be reduced. Allowing for a low evergreen hedge outlining the pavement edge, and wildflower planting proposed between the road kerb and hedge. Seeding is considerably more affordable than shrub planting at approximately £5-10 per sq.m. However, will not offer the continuous vertical barrier year-round. Gateway to gateway seed planting Approx. 629sqm x £10 = £6,290 A cost saving for trees would be to reduce the height to 3-4m.	An option to reduce cost associated with concrete modular benches would be a reduction in the area covered. Currently concrete modular benches are proposed 50% and 33% of the distance between schools along the northern footway within the medium and lower cost options respectively. An alternative to these modular concrete benches, would be to install birdsmouth fencing with standalone benches. This would reduce the cost significantly and continue to act as a barrier to pedestrians, whilst also offering places to rest / relax. However, this option may not be considered as aesthetically pleasing. Birdsmouth fencing cost: Approximately £30 per linear metre x 120m = £3,600 Standalone modular bench cost: In the range of £750 - £3000 per unit dependant on supplier / design / construction materials and fixings. 10 x Approx. £2500 unit = £25,000	The proposed cost of resurfacing / widening can be significantly reduced if the southern footway remains at 2m. However, this would eliminate the benefits mentioned above for those using the southern footway and may put increased demand on the northern footway. In addition, it would significantly reduce continuity of the footway provision, particularly as pedestrians cross from north to south across the proposed parallel crossing facilities. Alternatively, other footway materials could be used: • Asphalt surfacing - Approx. £42/m2 x 2410sqm = £101,220 • Cast in-situ concrete surfacing – Approx. £76/m2 x 2410sqm = £183,160 • Precast sett pavers Approx. - £105/m2 x 2410sqm = £253,050	In order to reduce costs, it is likely that only a reduction of the micro-resurfaced areas within Option 3 may achieve this, otherwise the full construction parklet is unlikely to be feasible with a reduction in concrete block breakout. It should be noted that a reduction of micro-resurfaced areas will reduce the area over which the benefits are seen and localise any advantage for cyclists, which are then likely to be negligible. A reduction is proposed micro-surfacing in Option 3 will impact the benefit reflected within the LTN 1/20 CLoS Audit Assessment relating to surface quality.	There are a number of variables that will impact overall cost, that can be increased or decreased based on quality of materials, supplier, permanency and durability of the product. Parklets typically range between 25-45k; however, costs can increase significantly if budgets permit. There are numerous variations of low-profile planters with differing material finishes and cost implications. These planters could provide a typically maintained public realm feature or a dynamic area of community planting with engagement from school children. Each option would offer a varying level of public engagement and aesthetic value. An alternative high-end planter to the Corona modular units specified would be the STREETLIFE planter. This is an oval shaped setup in powder coated steel, consisting of 4 modules and has an associated cost of approx. 18k per unit.
Estimated Cost (Raw cost without uplifts)	£20 - £35 per linear meter dependant on proposed density and plant specification. • Gateway to gateway planting Approx. 629sqm x £27.20 = £17,100 Cost of supply and installation per tree varies from around £350-900 depending on size and species. • 10 x £425 (5m+ high trees) = £4,250	The cost of the current modular concrete benches is approximately £1000 per linear meter. • 50% Distance between schools = Approx. 60m = £60,000 • 33% Distance between schools = Approx. 60m = £40,000	• The cost of the chipped asphalt footway is around £54 per metre squared and covers an area of approximately 2410sqm = £130,140	• The cost of carriageway micro-resurfacing is £35 per square metre x 1401sqm = Approx. £49,035* • Concrete block paving breakout costs approximately £2400 per 5 x 6 metre slab x 15 no. slabs = £36,000*	• Option 1 does not consider parklets / buildouts. • Option 2 considers 2 x £7,500 build out planters and 1 x £30,000 parklet = £45,000 • Option 3 considers £18,000 public realm features that can either be increased or decreased dependent on proposed design features – This is in addition to carriageway realignment costs.

*Indicative costs are based on covering large quantities; therefore, it may be that costs are significantly more expensive.

7. Parking & TRO Options

7.1 Overview

Local authorities in the UK have power under the Road Traffic Regulation Act 1984 (S1 and S6-9) to regulate traffic and restrict access to avoid danger to persons or other traffic using the road; to facilitate the passage on the road of any class of traffic including pedestrians; to prevent the use of a road by vehicular traffic where such use is inappropriate given the street context.

Typically, 'school streets' implemented across the UK aim to restrict access to the street outside the main entrance of the school for between 30-45 minutes at the beginning and end of the school day. This is typically enforced with the use of retractable or collapsible bollards, which are manned and operated by a member of school staff or ANPR cameras. ANPR cameras will enforce restrictions through issuing fixed penalty notices to any vehicle entering the zone who are not exempt.

However, as outlined in the Project Initiation Document and through discussion with CYC, restrictions to access are excluded from the project scope, meaning all users currently able to access the street will continue to be able to access the street. As such, options to restrict parking rather than access have been explored in order to meet the objectives relating to the reduction of parking impact at school drop off / pick-up times.

Increasing the use of TROs along Ostman Road will allow for a reduction in issues relating to on-street parking between the gateway features during the no parking time-zones as well as making fewer spaces available, encouraging parents / children to use active modes as their form of transport.

The following section provides potential options in order to reduce / restrict parking within the study area.

7.2 Double and single yellow markings

Currently parking restrictions along Ostman Road consist of unrestricted parking and double-yellow line restrictions. Implementation of both single and double yellow line markings will create restrictions within those areas currently unrestricted for specific time periods. These time periods are able to coincide with school drop-off and pick-up, with restrictions displayed on signage along the footway, or at entry signs to the controlled parking zone (between gateway features).

As double yellow lines are already in place along Ostman Road that are not adhered to during school drop-off / pick-up, it is likely further TROs will also be ignored. This option will therefore require a form of enforcement to ensure visitors, residents and parents are complying with the new measures. Enforcement could include the employment of a Civil Enforcement Officer to monitor illegal parking occurrences.

This option will still allow for some parking during un-restricted periods, which will narrow the carriageway; two implications of this are its impact on the No. 5 bus route and the continuing hazard that it created for children between the gateway features.

In addition, due to the residential nature of Ostman Road, it is likely that any restriction of parking between particular time periods will have opposition from some residents.

Figure 15. Example of single yellow line restriction

7.3 Permit holder parking

Another possibility to restrict parking along Ostman Road would be to have permit holders only parking, providing single yellow markings where possible to indicate where permit holder parking is appropriate, with restrictions displayed at entry signs to the controlled parking zone (between gateway features); or along the full length of Ostman Road.

This would result in a potential reduction in parking outside of the schools when compared to existing, with permit holders rather than parent's drop-off / pick-up.

Some parking will still narrow the carriageway impacting the No.5 bus route and continue to cause safety issues for children between gateway features if residents' cars are parked on-street during school drop-off / pick-up times.

This type of restriction will be difficult to enforce without Civil Enforcement; however, residents are more likely to be in favour. Some residents are still likely to oppose in regard to the reduced level of parking, particularly for those who may lose parking spaces outside of their property.

Figure 16. Example of parking zone signage

7.4 Positive Parking

Another alternative would be to provide areas of 'positive parking', which would be inset bays within the verge, which would help maintain wider carriageway width, improving passage of No.5 bus route.

In addition, double yellow parking restrictions would be in place within areas not allocated at positive parking bays; as such, it would likely have increased safety benefits due to lack of cars parked alongside the footway between gateway features.

A negative aspect of positive parking bays would be that they reduce the public realm benefits alongside southern footway in comparison to other options. In addition, only a limited number of bays could be provided, which would be significantly lower than the existing un-restricted parking areas. Therefore, it is likely that positive parking would also have some potential opposition from residents.

Figure 17. Example of Positive Parking Bays (Design Quality Framework)

The impact of each parking reduction measure within the three design proposals (between proposed the gateway features) are shown in **Table 15** to Table 17 below. It should be noted that the gateway-to-gateway feature within Option 3 extends further than in Options 1 & 2. Options 1 & 2 comparisons are provided in **Table 15** and Table 16, whereas Option 3 comparison is provided in Table 17.

In total, Option 1 has total loss of approximately 7 parking spaces, providing 9 spaces in comparison with the 16 existing.

With Option 2 there is a complete loss of parking between the gateway features. However, the introduction of positive parking could result in a loss of 7 spaces in total, providing 9 spaces in comparison to the 16 existing.

With Option 3 there is a total loss of 10 spaces, with 16 spaces provided in comparison to 26 existing spaces. Positive parking is not applicable due to changes in the highway alignment.

	No. parking spaces		
Between proposed gateway features	**Existing**	**Option 1**	**Positive Parking Alternative**
Eastern Gateway to Tostig Avenue	**11**	3	6
Western Gateway to Tostig Avenue	**5**	6	3
TOTAL	**16**	**9**	**9**

Table 15. Impact of Parking Interventions Options 1

	No. parking spaces		
Between proposed gateway features	**Existing**	**Option 3**	**Positive Parking Alternative**
Eastern Gateway to Tostig Avenue	11	0	6
Western Gateway to Tostig Avenue	5	0	3
TOTAL	**16**	**0**	**9**

Table 16. Impact of Parking Interventions Options 2

	No. parking spaces		
Between proposed gateway features	**Existing**	**Option 3**	**Positive Parking Alternative**
Eastern Gateway to Tostig Avenue	16	9	N/A
Western Gateway to Tostig Avenue	10	7	N/A
TOTAL	**26**	**16**	**N/A**

Table 17. Impact of Parking Interventions Option 3

8. Existing & Proposed Audits

8.1 Overview

Three types of audits on both the existing and proposed layouts have been undertaken as part of the design process, namely:

- **An LTN 1/20 Cycle Level of Service** - Existing and proposed Option 1 – 3 layouts
- **An LTN 1/20 Junction Assessment Tool**, Ostman Road / Tostig Avenue Junction - Existing and proposed Option 1 – 3 layouts
- **Ostman Road School Street Audit** - Existing and proposed Option 1 – 3 layouts.

Full audit outputs are provided at **Appendix D**.

8.2 LTN 1/20 Cycle Level of Service

The LTN 1/20 Cycle Level of Service framework comprises of five key requirements (cohesion, directness, safety, comfort and attractiveness) and a total of 25 sub-criteria. Each of the sub-criteria is scored 0 (red), 1 (amber) or 2 (green) reflecting the level of provision, resulting in a maximum potential score of 50. Five of the 25 sub-criteria are classed as 'critical fails', with all five falling in the safety theme. Critical fails relate to inadequate width for cycling in mixed traffic lanes, or adjacent to parking/loading; excessive motor traffic volumes for cyclists to be mixed in with general traffic; and speeds of motor traffic >37mph.

The results of the LTN 1/20 Cycle Level of Service are as follows:

- The existing fell just below the 70% pass threshold at 66% with no critical fails
- Options 1, 2 & 3 passed the threshold, scoring 76%, 76% and 82% respectively, with the proposed designs enhancing safety, comfort and attractiveness in comparison with the existing and no critical fails.

8.3 LTN 1/20 Junction Assessment Tool

The LTN 1/20 Junction Assessment Tool considers all cycle movements through a junction, represented graphically by colour-coding each movement red (0), amber (1) or green (2) reflecting the risk of collision for cyclists. Green is taken to mean suitable for all potential cyclists; Amber suitable for most cyclists and red means suitable for a minority of cyclists (and, even for them, it may be uncomfortable to make).

AECOM assessed the Tostig Avenue / Ostman Road junction, this audit produced the same overall amber score within both the proposed and existing layouts.

This is due to the only significant change being the implementation of a continuous footway across the arm of Tostig Avenue.

It is considered that segregated facilities or signalisation of this junction would be over engineering due to the quiet street nature of Ostman Road. This is further confirmed by the low traffic volumes experienced along Ostman Road that fall within the threshold for an on-street quiet route. As such, the current and proposed facilities are considered appropriate.

8.4 School Street Audit

Recognising that the Ostman Road project is not a typical 'School Streets' proposal that aims to limit access during peak periods. The 'Ostman Road School Street Audit' is the project specific appraisal matrix, produced by AECOM and approved for use by CYC.

As instructed, it takes a mainly infrastructure-based approach but draws guidance from LTN 1/20, Healthy Streets, School Streets and Streets 4 all appraisal methodologies.

It has 23 criteria, with 7 key indicators, which comprise:

- Children cycling / scootering on footways
- Pedestrians / children
- General traffic
- Environmental.
- Cost
- Buildability
- Public realm

The purposes of this additional audit tool is to consider a more rounded / overarching approach, that reflects the wider project aims and objectives. Scores of between 0-59% are considered red, 60-70% amber and 70-100% green.

The results of the Ostman Road School Street Audit are as follows:

- The existing provision scored red - 43%
- Option 1 scored amber - 65%
- Option 2 scored green – 75%
- Option 3 scored green - 76%.

The existing layout and Option 1 score particularly low in public realm and general traffic indicators, with a red and an amber score respectively. Options 1, 2 and 3 score particularly well in children cycling / scootering on footways and pedestrian / children indicators.

8.5 Audit Summary

In summary, the three types of audits used to assess the proposals cover a wide-ranging set of indicators that are not only bespoke to the project but also cover the required LTN 1/20 audit criteria for cycle provision. The results show that within both the 'School Street' and 'LTN 1/20 CLoS' audits the Options 1,2 & 3 provide a hierarchy of benefit against the key indicators.

This hierarchy of benefit is reflected within the associated cost of proposals, with Option 1 offering a low, Option 2 medium and Option 3 a higher cost solution.

Options 2 & 3 score a green within the 'School Street' audits, whereas Option 1 is considered amber. Although Option 1 does not provide as greater overall benefit in relation to the key indicators and scheme objectives relating to public realm and streetscape, it is considered a cheaper alternative to other higher cost options considering site constraints.

9. Summary and Next Steps

9.1 Summary

In summary, AECOM have provided hierarchy of interventions, each with an associated magnitude of cost and a number of variables that may be included or omitted from each design to enable CYC to make an informed decision which option they may wish to progress to Detailed Design.

The three options are considered to offer realistic civil infrastructure measures that meet the initial project objectives, taking into account site constraints / limitations associated with concrete slab paving, residential parking / access requirements and the No. 5 bus route.

The three options are:

- **Option 1** – Retention of existing kerblines with landscaping enhancements on both sides of Ostman Road
- **Option 2** – Modular buildouts along northern kerbline with landscaping enhancements on both sides of Ostman Road
- **Option 3** – Full construction parklet with new kerblines on both sides (wider footway/verge) with landscaping enhancements on both sides of Ostman Road

Each option has been developed based on a magnitude of cost, with Option 1 offering a lower, Option 2 a medium and Option 3 a higher cost solution. Each option also has a greater or lesser impact in relation to construction requirements and representative benefits when assessed against audit criteria.

In addition, on-site observations and survey data informed the inclusion of the following measures within each option by theme:

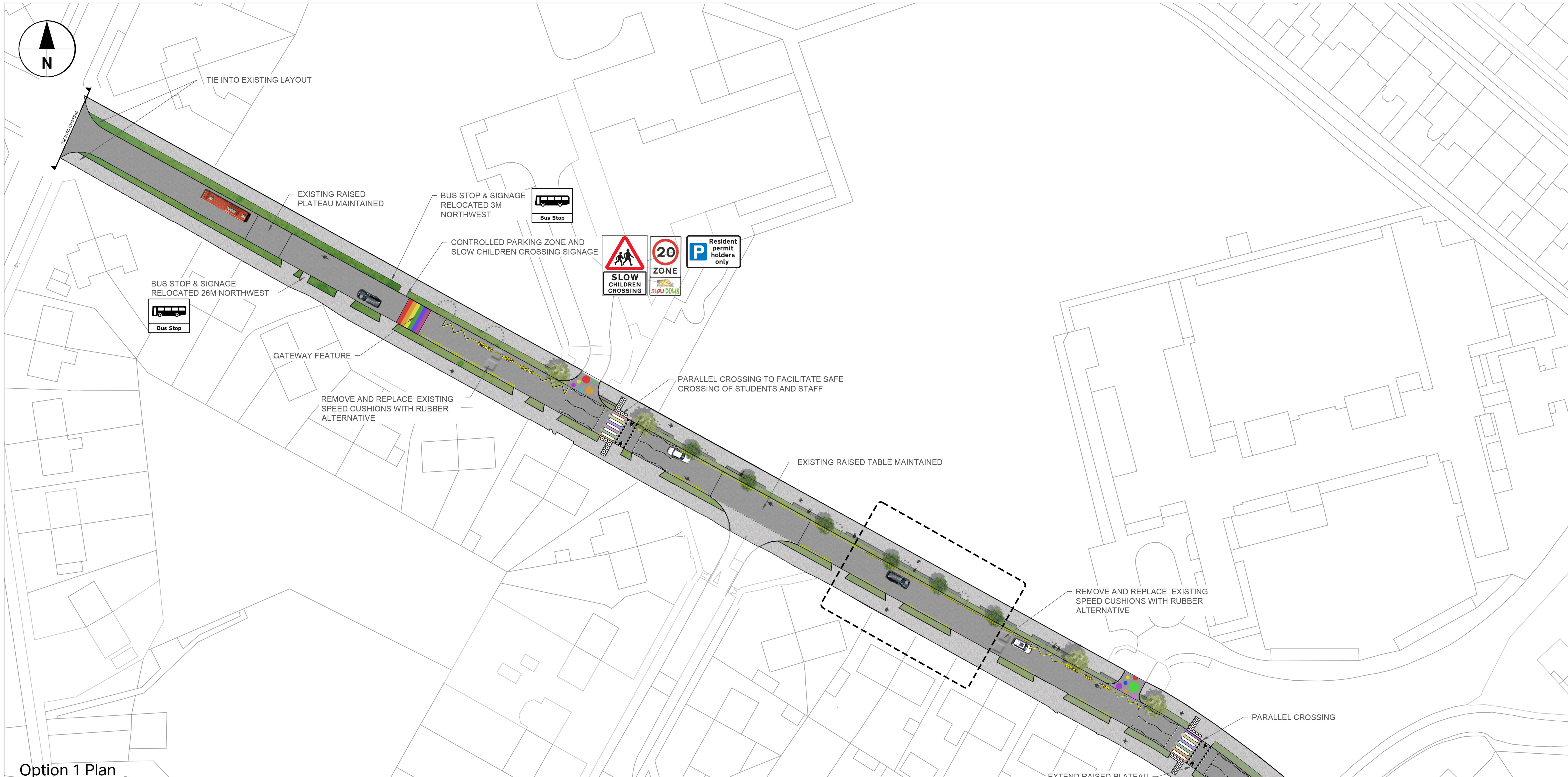
- **Deterring illegal parking** - Illegal parking occurrences are highest Ostman Road between the Carr Junior and Infant School. Therefore, further restrictions to parking have been focused within these locations to deter illegal parking and limit existing parking provision. A number of potential parking and TRO options are presented.
- **Encouraging active travel** - Traffic flows are considered low. Therefore, the proposed on-street quiet route for cyclists meets LTN 1/20 requirements. Notwithstanding, proposals to widen footways will also provide pedestrians and school children a shared surface, further encouraging active travel to / from Carr Infant and Junior Schools.
- **Traffic calming** - 85th percentile traffic speeds are slightly higher than the legal speed limit. Therefore, further traffic calming measures and signage has been included in all designs to encourage lower vehicle speeds – particular outside Carr Infant and Junior Schools.
- **New pedestrian/cycle crossings** - The highest proportion of pedestrians cross near to the school entrances in Zones C, D & E. Therefore, parallel crossings have been proposed in these locations, catering for pedestrian crossing desire lines and encouraging active travel. The proposed crossing location to the east is positioned to cover Zones D & E, this enables the proposed parklet features to be located between Carr Infant and Junior Schools.

9.2 Next Steps

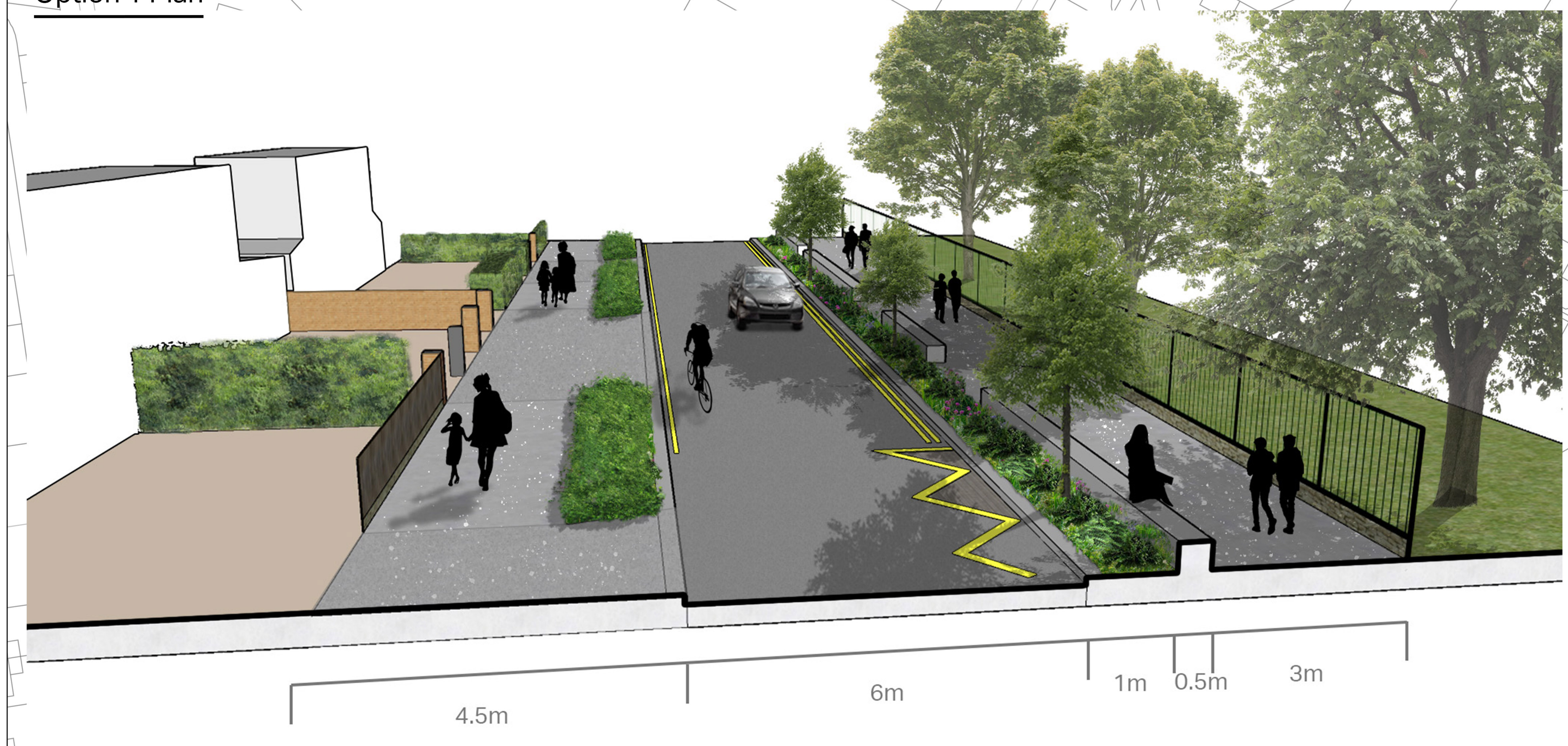
- Present the three proposed to Elected Members for a decision on how to proceed.
- Assuming agreement of a preferred option, AECOM to prepare a priced Commissioning Brief to produce a package of detailed design deliverables (Workstage 4 from Section 1.5).

Appendix A - 3no. Preliminary Designs

ISO A1 594mm x 841mm
Drawn: MF
Approved: LO
Checked: EM
Designer: MF
Project Management Initials:
Revision:
Last saved by: EIMEAR.MCDONNELL(2022-05-10) Last Plotted: 2022-06-15
Filename: Ostman Road Option 1 Photoshop Plan.dwg



Option 1 Plan



Option 1 Elevation

AECOM

PROJECT

CYC CB104
Ostman Road
People Streets

CLIENT

CITY OF YORK COUNCIL

AECOM Limited
1st and 5th Floor
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Leeds, LS11 9AR
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www.aecom.com

NOTES

KEY

- Existing Road Surface
- Enhanced Pedestrian Footway
- Planting
- Seating Wall
- School Gateway Feature
- School Entrance Feature
- Feature Tree
- Street Tree
- School Zone Signage
- Resident Only Parking Signage
- Bus Stop
- Existing Tree Removed
- Speed Cushions

Notes:

Design assumes seating to be provided 50% of the length between school entrances, along the northern footway.

Design assumes concrete driveways require breaking out and replacing with full construction chipped asphalt surfacing.

Design assumes approx. 315sqm of renewed road surface course at locations where existing surface course is deteriorated.

Please refer to Workstages 1-3 Closure Report accompanying this report.

ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15/06/2022	PRELIMINARY DESIGN

ISSUE PURPOSE / SUITABILITY

PRELIMINARY DESIGN

PROJECT NUMBER

60677657

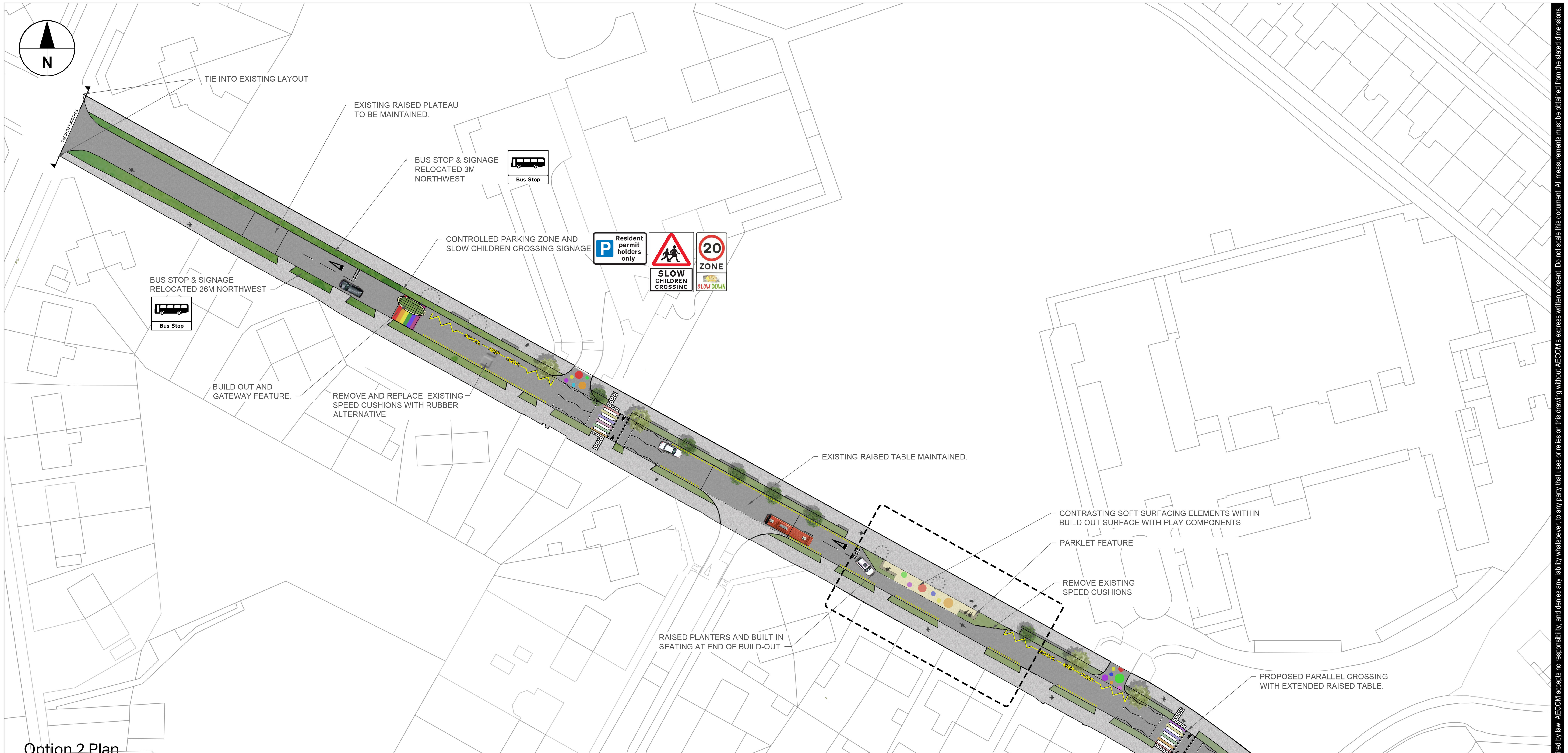
SHEET TITLE

OSTMAN ROAD
OPTION 1

SHEET NUMBER

60677657-ACM-000-ZZ-DR-TR-0002

ISO A1 594mm x 841mm
Drawn: MF
Approved: LO
Checked: EM
Designer: MF
Project Management Initials:
Revision:



Option 2 Plan

Option 2 Elevation

Last saved by: EIMEAR.MCDONNELL(2022-05-05) Last Plotted: 2022-06-15
Filename: Ostman Road Option 2 Photoshop Plan.dwg

AECOM

PROJECT

CYC CB104
Ostman Road
People Streets

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NOTES

- Existing Road Surfacing
- Enhanced Pedestrian Footway
- Planting
- Seating Wall
- School Gateway Feature
- School Entrance Feature
- Feature Tree
- Street Tree
- School Zone Signage
- Resident Only Parking Signage
- Bus Stop
- Existing Tree Removed
- Speed Cushions

Notes:
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Design assumes concrete driveways require breaking out and replacing with full construction chipped asphalt surfacing.

Design assumes approx. 315sqm of renewed road surface course at locations where existing surface course is deteriorated.

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15/06/2022	PRELIMINARY DESIGN

ISSUE PURPOSE / SUITABILITY

PRELIMINARY DESIGN

PROJECT NUMBER

60677657

SHEET TITLE

OSTMAN ROAD
OPTION 2

SHEET NUMBER

60677657-ACM-000-ZZ-DR-TR-0003

ISO A1 594mm x 841mm
Drawn: MF
Approved: LO
Checked: EM
Designer: MF
Project Management Initials:
Revision:
Last saved by: EIMEAR.MCDONNELL(2022-05-05) Last Plotted: 2022-06-15
Filename: Ostman Road Option 3 Photoshop Plan.dwg

AECOM

PROJECT

CYC CB104
Ostman Road
People Streets

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NOTES

- Existing Road Surface
- Re-Surfaced Carriageway
- Enhanced Pedestrian Footway
- Planting
- Seating Wall
- School Gateway Feature
- School Entrance Feature
- Feature Tree
- Street Tree
- School Zone Signage
- Resident Only Parking Signage
- Bus Stop
- Existing Tree Removed
- Speed Cushions

Notes:

Design assumes seating to be provided 50% of the length between school entrances, along the northern footway.

Design assumes concrete driveways require breaking out and replacing with full construction chipped asphalt surfacing.

Design assumes approx. 315sqm of renewed road surface course at locations where existing surface course is deteriorated.

Please refer to Workstages 1-3 Closure Report accompanying this report.

ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15/06/2022	PRELIMINARY DESIGN

ISSUE PURPOSE / SUITABILITY

PRELIMINARY DESIGN

PROJECT NUMBER

60677657

SHEET TITLE

OSTMAN ROAD
OPTION 3

SHEET NUMBER

60677657-ACM-000-ZZ-DR-TR-0004

Appendix B - Cost estimate outputs

Block Cost Estimate			
Scheme	**OSTMAN ROAD**	**OPTION 1 - LOW COST**	
Client:	**CYC**	Preparation Date:	**March 2022**
Costing Base Year:	2021		
Construction Year:	2022	Inflation Adjustment Factor (IAF):	104.4%

BASE COST				**Section Costs (£ 2021 rates)**	**Section Costs (£ 2022 rates)**	**Sub Totals (£)**
	Description					
Preliminaries	Construction Costs			£304,281	**£317,549**	
	Traffic Signals equipment				**£0**	
	Works Contingency	5%	Sum of Works costs	£15,214	**£15,877**	
	Utilities Allowance	10%	Sum of Works costs	£30,428	**£31,755**	
	TTM	15%	Sum of Works costs	£52,489	**£54,777**	
	Sub Total:					**£419,959**
Scheme Design & Development	Design	10%	Capital costs		£41,996	
	Contract Management	2%	Capital costs		£8,399	
	Site Supervision	2%	Capital costs		£8,399	
	Sub Total:					**£58,794**
RISK						
Risk	Quantified Risk Assessment	40%	Sum of Works costs		£191,501	
	Sub Total:					**£191,501**
	Scheme Cost Estimate - Grand Total:					**£670,255**

Block Cost Estimate

Scheme **OSTMAN ROAD**	**OPTION 1 - MEDIUM COST**		
Client: **CYC**		Preparation Date:	**March 2022**
Costing Base Year: 2021			
Construction Year: 2022		Inflation Adjustment Factor (IAF):	104.4%

BASE COST				**Section Costs (£ 2021 rates)**	**Section Costs (£ 2022 rates)**	**Sub Totals (£)**
	Description					
Preliminaries	Construction Costs			£336,616	**£351,294**	
	Traffic Signals equipment				**£0**	
	Works Contingency	5%	Sum of Works costs	£16,831	**£17,565**	
	Utilities Allowance	10%	Sum of Works costs	£33,662	**£35,129**	
	TTM	15%	Sum of Works costs	£58,066	**£60,598**	
	Sub Total:					**£464,586**
Scheme Design & Development	Design	10%	Capital costs		£46,459	
	Contract Management	2%	Capital costs		£9,292	
	Site Supervision	2%	Capital costs		£9,292	
	Sub Total:					**£65,042**
RISK						
Risk	Quantified Risk Assessment	40%	Sum of Works costs		£211,851	
	Sub Total:					**£211,851**
	Scheme Cost Estimate - Grand Total:					**£741,479**

Block Cost Estimate

Scheme	**OSTMAN ROAD**	**OPTION 2 - LOW COST**	
Client:	**CYC**	Preparation Date:	**March 2022**
Costing Base Year:	2021		
Construction Year:	2022	Inflation Adjustment Factor (IAF):	104.4%

BASE COST				**Section Costs (£ 2021 rates)**	**Section Costs (£ 2022 rates)**	**Sub Totals (£)**
	Description					
Preliminaries	Construction Costs			£335,742	**£350,382**	
	Traffic Signals equipment				**£0**	
	Works Contingency	5%	Sum of Works costs	£16,787	**£17,519**	
	Utilities Allowance	10%	Sum of Works costs	£33,574	**£35,038**	
	TTM	15%	Sum of Works costs	£57,916	**£60,441**	
			Sub Total:			**£463,380**
Scheme Design & Development	Design	10%	Capital costs		£46,338	
	Contract Management	2%	Capital costs		£9,268	
	Site Supervision	2%	Capital costs		£9,268	
			Sub Total:			**£64,873**
RISK						
Risk	Quantified Risk Assessment	40%	Sum of Works costs		£211,302	
			Sub Total:			**£211,302**
	Scheme Cost Estimate - Grand Total:					**£739,555**

Block Cost Estimate

Scheme	**OSTMAN ROAD**	**OPTION 2 - MEDIUM COST**	
Client:	**CYC**	Preparation Date:	**March 2022**
Costing Base Year:	2021		
Construction Year:	2022	Inflation Adjustment Factor (IAF):	104.4%

BASE COST	**Description**			**Section Costs (£ 2021 rates)**	**Section Costs (£ 2022 rates)**	**Sub Totals (£)**
Preliminaries	Construction Costs			£346,592	**£361,705**	
	Traffic Signals equipment				**£0**	
	Works Contingency	5%	Sum of Works costs	£17,330	**£18,085**	
	Utilities Allowance	10%	Sum of Works costs	£34,659	**£36,171**	
	TTM	15%	Sum of Works costs	£59,787	**£62,394**	
	Sub Total:					**£478,355**
Scheme Design & Development	Design	10%	Capital costs		£47,836	
	Contract Management	2%	Capital costs		£9,567	
	Site Supervision	2%	Capital costs		£9,567	
	Sub Total:					**£66,970**
RISK						
Risk	Quantified Risk Assessment	40%	Sum of Works costs		£218,130	
	Sub Total:					**£218,130**
	Scheme Cost Estimate - Grand Total:					**£763,455**

Block Cost Estimate

Scheme	**OSTMAN ROAD** **OPTION 3 - LOW COST**
Client:	**CYC**
Preparation Date:	**March 2022**
Costing Base Year:	2021
Construction Year:	2022
Inflation Adjustment Factor (IAF):	104.4%

BASE COST	**Description**			**Section Costs (£ 2021 rates)**	**Section Costs (£ 2022 rates)**	**Sub Totals (£)**
Preliminaries	Construction Costs			£431,147	**£449,947**	
	Traffic Signals equipment				**£0**	
	Works Contingency	5%	Sum of Works costs	£21,557	**£22,497**	
	Utilities Allowance	10%	Sum of Works costs	£43,115	**£44,995**	
	TTM	15%	Sum of Works costs	£74,373	**£77,616**	
	Sub Total:					**£595,055**
Scheme Design & Development	Design	10%	Capital costs		£59,506	
	Contract Management	2%	Capital costs		£11,901	
	Site Supervision	2%	Capital costs		£11,901	
	Sub Total:					**£83,308**
RISK						
Risk	Quantified Risk Assessment	40%	Sum of Works costs		£271,345	
	Sub Total:					**£271,345**
	Scheme Cost Estimate - Grand Total:					**£949,709**

Block Cost Estimate

Scheme	**OSTMAN ROAD**	**OPTION 3 - MEDIUM COST**	
Client:	**CYC**	Preparation Date:	**March 2022**
Costing Base Year:	2021		
Construction Year:	2022	Inflation Adjustment Factor (IAF):	104.4%

BASE COST				**Section Costs (£ 2021 rates)**	**Section Costs (£ 2022 rates)**	**Sub Totals (£)**
	Description					
Preliminaries	Construction Costs			£474,263	**£494,943**	
	Traffic Signals equipment				**£0**	
	Works Contingency	5%	Sum of Works costs	£23,713	**£24,747**	
	Utilities Allowance	10%	Sum of Works costs	£47,426	**£49,494**	
	TTM	20%	Sum of Works costs	£109,080	**£113,837**	
			Sub Total:			**£683,021**
Scheme Design & Development	Design	10%	Capital costs		£68,302	
	Contract Management	2%	Capital costs		£13,660	
	Site Supervision	2%	Capital costs		£13,660	
			Sub Total:			**£95,623**
RISK						
Risk	Quantified Risk Assessment	40%	Sum of Works costs		£311,458	
			Sub Total:			**£311,458**
	Scheme Cost Estimate - Grand Total:					**£1,090,102**

Appendix C – Design Feature Variables

C.1 Planting

Planting is to run along the edge of the Northern and Southern footway in all three of the design proposals. It will draw the eye away from the carriageway, increase green space and provide a buffer for pedestrians, which will be positively reflected within the 'Ostman Road School Street Audit' criteria relating to aesthetics and safety.

New planting would also remove the need for existing bollards, most of which need replacing. The cost of the proposed planting is approximately £35 per linear meter. This cost is typically variable between £20 - £35 per linear meter dependant on proposed density and plant specification.

In addition to providing a green buffer, aesthetic and environmental benefits, allowing pupils of both Carr Infant School and Carr Junior School to assist with planting and maintenance throughout the seasons will offer engagement for children, which will also be positively reflected within the 'Ostman Road School Street Audit' criteria.

Proposed planting on verges in front of residence on Ostman road comprise of evergreen shrub planting 1.1m high. This will act as a year-round green buffer on the road, allowing for removal of bollards. If not undertaken replacement bollards will have to be proposed. An indicative cost of a bollard is £180 excluding VAT (Reference: Woodscape-Square Fixed Bollard). Proposed planting along the school side verge is currently mimicking the opposing residential verge beds. This will create a uniformed cohesion on the street. The specification of this planting could be reduced. Allowing for a low evergreen hedge outlining the pavement edge, and wildflower planting proposed between the road kerb and hedge. Seeding is considerably more affordable than shrub planting at approximately £5-10 per sq.m.

Existing trees on the street are proposed for removal as the pathway is increasing by 500mm and new pathway construction will take place on the tree root protect zones. In order to retain these trees the pathway would have to be reduced to 2.5m. The widening of the footway comprises the fundamental approach to the scheme and is not advisable not omit.

Replacement planting would be a reasonable approach considering the current size of the trees and the ease at which they can be replaced. We have proposed to remove 8 trees and plant 10 as replacements along the street between the schools. These trees would be 5m+ high and would have an instant impact on the street. Costs increase as tree size grows. A cost saving for trees would be reducing the height to 3-4m. Cost of supply and installation per tree varies from around £350-900 pending on size and species.

The existing trees have been in position since approx. winter 2010/11 and appear (from google streetview August 2019) to be vigorous and well established. There is no reason to suggest that the existing verge is not suitable for supporting tree growth / the establishment of new trees and it is considered that the requirement for a crate system excessive as a result. If a crate system for roots were to be required for each tree, this would additional cost which may be within the range of £500 – 1000 per tree.

In addition, when taller trees are included within a design, they are less likely to be vandalised. However, there is a general acceptance that taller trees when installed may not show the same level of growth as a smaller sapling would within the first 5-years.

C.2 Modular Concrete Benches

Modular concrete benches are priced for in all options and are to run along the Northern footway between the planting and shared space. They will act as a vertical buffer for pedestrians, lead pedestrians to official crossing points and provide a physical barrier to deter drop off and pick up parking.

They will also provide much needed places for rest and relation something that isn't currently featured along Ostman Road. Similarly, to the proposed planting they will be positively reflected within the 'Ostman Road School Street Audit' criteria.

The cost of the modular concrete benches is approximately £1000 per linear meter. An option to reduce cost associated with modular concrete benches could be to significantly reduce the area covered; current proposals are to provide continuous modular concrete benches for 50% and 33% of the distance between schools along the northern footway within the medium and lower cost options respectively.

A standalone wooden bench would be an alternative seating specification to explore. Image 4 gives an example of Woodscape Clifton seating. This seat is a 2m length x 540 width wooden bench with backrest and galvanised legs costing approximately £2,154.00 per bench excluding 20% VAT.

An alternative to these modular concrete benches, which would reduce the cost significantly, would be to install birdsmouth fencing. This would provide some of the benefits the modular concrete benches do in respect to acting as a barrier to pedestrians; however, they wouldn't offer a place for rest / relax and also wouldn't be as aesthetically pleasing. As such, if birdsmouth fencing is proposed, it would be beneficial to also incorporate small sections of standalone modular benches, which typically have costs within the range of £750 - £3000 per unit, dependant on supplier / design / construction materials and fixings.

Figure 1 Example Wooden Modular Bench (Woodscape)

Figure 2 Example Birdsmouth Fencing (sawmill timber)

C.3 Chipped Asphalt Footway

The installation of chipped asphalt surface is proposed along both the northern and southern footways in each proposal, with an increase in footway width to 3m.

This element of the proposal is to provide a widened and improved shared surface for children / parents / pedestrians, ensuring the space is sufficient for children (cycling and scootering) to ride alongside their parents.

The new chipped asphalt will also provide a smoother surface in comparison with the existing concrete block paving and allow proposed continuous footways to be delineated more clearly, emphasising pedestrian priority. This will be positively reflected within the 'Ostman Road School Street Audit' criteria relating to comfort and safety. The cost of the chipped asphalt footway is around £54 per metre squared and covers an area of approximately 2410sqm.

Additional cost is relating to footway enhancement proposed is associated with the requirement to breakout existing concrete driveways along the route so that continuity of the footway surface can be achieved. Breaking out of the concrete across driveways is likely to causes some disturbance to residents due to the required earthworks that will prevent residents parking within driveways over a short period. Breaking out of the concrete over driveways is also likely to add an additional risk associated with statutory undertakers located within the footways. An alternative would be to omit the sections where concrete driveways are located. However, this would reduce the aesthetic value and continuity of the proposed footway. It may also cause issues with cracking and subsidence of the proposed footway due to the number of joints required at interfaces with concrete driveways.

The proposed cost of resurfacing / widening can be significantly reduced if the southern footway remains at 2m. However, this would eliminate the benefits mentioned above for those using the southern footway and may put increased demand on the northern footway. In addition, it would significantly reduce continuity of the footway provision, particularly as pedestrians cross from north to south across the proposed parallel crossing facilities.

It should be noted that the proposed shared surface is intended to benefit predominately school children / parents and is not intended to provide the main cycling route along Ostman Road. The main cycling route along Ostman Road will be considered to route on-street; therefore, alternations to the shared use footway will not impact LTN 1/20 audit scores.

Alternatively, other footway materials could be used, indicative costings for asphalt surfacing are approximately £42/m2, which includes surface, binding course and base courses, as well as a geo membrane beneath. There will also be around £11/m3 for any hardcore required.

Indicative costings for cast in-situ concrete surfacing is approximately £76/m2, which includes the concrete surface and geo membrane. Again, there would be an extra £11/m3 for any hardcore. If formwork is needed this is around £15 per linear metre.

Finally, precast setts would be approximately £105/m2 for the pavers, the bedding mortar below and the geo membrane. As with above there will be an extra £11/m3 for any hardcore.

C.4 Drainage and Kerbs

Replacement of kerbs and drain covers in poor condition has been accounted for within all options. In Options 1 & 2, a total of 18no. gully grates and covers are outlined to be replaced and a nominal figure of 50m has been identified for broken or cracked kerbs replacement. In Option 3, 35no. gully grates and covers are identified for replacement and approx. 780m of kerbs are identified for replacement, which covers the gateway-to-gateway features.

A high-level estimate associated with kerb and gully replacement in Options 1 & 2 is between £15,000-£20,000; whereas, in Option 3 between £35,000-£45,000.

C.5 Micro Re-surfacing and Concrete Block Breakout

Both carriageway micro-resurfacing and concrete block paving features on AECOMs third design proposal. It will increase the aesthetic appeal and provide a smoother surface for on-carriageway cyclists, which will be positively reflected within the ‘LTN 1/20 CLoS Audit Assessment’ criteria relating surface type.

Removal of the concrete block also allows for a full depth construction parklet. The cost of carriageway micro-resurfacing is £36 per square metre; whereas concrete block paving breakout costs approximately £2400 per 5 x 6 metre slab.

In terms of reducing the overall costs, Options 1 & 2 offer solution that do not breakout the concrete slab, with a localised 70m breakout of the concrete required in Option 3 in order to deliver proposals.

As such, in order to reduce costs, it is likely that only a reduction of the micro-resurfaced areas within Option 3 may achieve this, otherwise the full construction parklet is unlikely to be feasible. It should be noted that a reduction of micro-resurfaced areas will reduce the area over which the benefits are seen and localise any advantage for cyclists, which are then likely to be negligible.

C.6 Modular Buildouts and Parklets

Parklets are proposed to be installed on the northern side of the carriageway in Options 1 and 2. Parklets provide a place for rest and recovery and increased aesthetical appeal / green space within the streetscape, all of which are key indicators included within the ‘Ostman Road School Street Audit’.

There are a number of variables that will impact overall cost, that can be increased or decreased based on quality of materials, supplier, permanency and durability of the product.

Option 2 considers 2 x £7,500 build out planters and 1 x £30,000 parklet; In addition, Option 3 considers £18,000 public realm features that can either be increased or decreased dependent on proposed design features.

Modular Buildouts

Two options have been explored in order to provide proposed builds at gateway features within Options 2 and 3, a high end and medium end cost option. The high-end option is from STREETLIFE; this is an oval shaped setup in powder coated steel, consisting of a 4 modules ca.570x308x47cm (l x w x h) and has an associated cost of approximately 18k.

An alternative option is the Corona modular circular planter from BROXAP street furniture. This is a segmented composite which can be done in any RAL colour and has an associated cost of approximately 7k. All indicative costs exclude VAT & delivery. Note two are specified for the scheme.

Each option would be supplemented by relevant road markings and bolt down bollards where appropriate.

In addition to the examples shown below, there are numerous variations of low-profile planters with differing material finishes and cost implications. These planters could provide a typically maintained public realm feature or a dynamic area of community planting with engagement from school children.

Figure 3 Mobile Green Isle (STREETLIFE)

Figure 4 Example Corona modular circular planter (BROXAP street furniture)

Parklets

Option 2 specifies a parklet to be provided between the two schools alongside the northern footway. There are numerous options and components to these specifications with varying prices accordingly. The following information provides high end, medium and low-cost options in order to provide parklets.

An example of what a £30-45K Parklet comprises:

- Integrated Vertical Boundary (Railings)
- Decking Flooring meeting GL
- Bespoke Planters
- Bespoke Seating
- Cyclestands/Street Furniture
- Planting
- Installation and Delivery

Figure 5 Example London Parklet-Indicative Cost £30-45K (Meristem Design)

An example of what a £25-30K Parklet comprises:

- Elements of Vertical Boundary (Railings)
- Astroturf Flooring
- Bespoke Planters
- Seating, typically bespoke design
- Cyclestands/Street Furniture
- Installation and Delivery

Figure 6 Example Raynes Park Parklet-Indicative Cost £25-30K (Meristem Design)

An example of what a £10-25K Parklet comprises:

- Elements of Vertical Boundary, typically wooden fencing.
- Astroturf Flooring
- Planters
- Seating
- Cyclestands/Street Furniture
- Planting
- Built on-site, typically wooden decking.

Figure 7 Example of Temporary Parklets (Community Led)

Additional Optional Elements

In addition to both modular buildouts and parklets, play equipment could form an additional component to the recreational spaces along the street, specifically in Options 2 and 3. Below are examples of play equipment and their indicative costs. There are a number of suppliers and designs of play equipment with varying costs and educational / recreational benefits.

Proposals can include these features across the entire Ostman Road study, from gateway to gateway, between the two schools or either side of the footway (advised to maintain public realm features between the two schools as a minimum).

The addition of play equipment would enhance the interaction of children with the streetscape, whilst also further reiterating that 'School Street' nature of the area between the gateways.

Figure 8 Example of Wind Chimes - Indicative Cost £1,500 per unit (Duncan and Grove)

Figure 9 Example of Kids Table and Chairs -Indicative Cost £820 per unit (Kompan)

Figure 10 Emotions Play Panel - Indicative Cost £2,400 per unit excl VAT (Kompan)

Appendix D - Audit Outputs

Cycling Level of Service Assessment (CLoS) based on LTN 1/20	
Project Number	60677657
Scheme	Ostman Road
Location	York
Date	08/04/2022
Version Number	
Assessment By	MF
Checked By	LO

AECOM

Cycling Level of Service (CLOS)

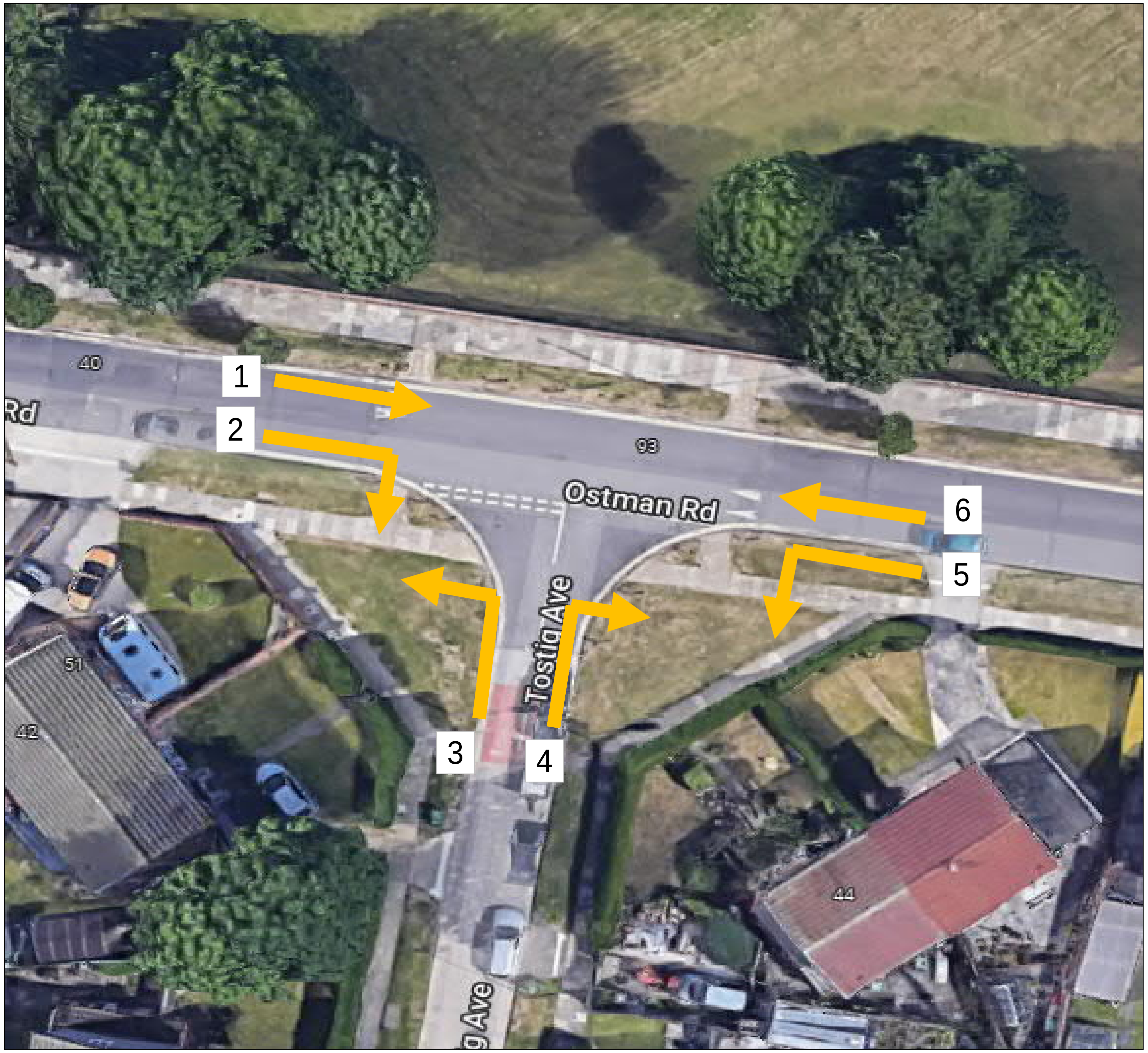
Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)
Coherence	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	**1. Ability to join/leave route safely and easily** considering left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed - cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	**2.Provision for cyclists throughout the whole length of the route**		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	**3.Density of routes based on mesh width** i.e. distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000	Route contributes to a network density mesh width 250 - 1000m	Route contributes to a network density mesh width <250m
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as the-crow-flies' distance as possible.	**4.Deviation of route** Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2
	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	**5.Stopping and give way frequency**		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	**6.Delay at junctions**		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (e.g. bypass at signals)
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	**7.Ability to maintain own speed on links**		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	**8.Gradient**		Route includes sections steeper than the gradients recommended in Figure 4.4	There are no sections of route steeper than the gradients recommended in Figure 4.4	There are no sections of route which steeper than 2%
Safety	Reduce/remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	**9.Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction**	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph
			10.Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph
	Avoid high motor traffic volumes where cyclists are sharing the carriageway.	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	**11.Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour**	>10000 AADT, or >5% HGV	5000-10000 AADT and 2-5%HGV	2500-5000 and <2% HGV	0-2500 AADT
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Table 6.2. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	**12.Segregation to reduce risk of collision alongside or from behind**	Cyclists sharing carriageway - nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.
		A high proportion of collisions involving cyclists occur at junctions. Junctions there-fore need particular attention to reduce the risk of collision. Junction treatments include: - Minor/side roads : cyclist priority and/or speed reduction across side roads - Major roads : separation of cyclists from motor traffic through junctions.	**13.Conflicting movements at junctions**		Side road junctions frequent and/or untreated. Major junctions, conflicting cycle/motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	**14.Legible road markings and road layout**		Faded, old, unclear, complex road markings/unclear or unfamiliar road layout	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout
	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	**15.Conflict with kerbside activity**	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (e.g. nearside cycle lane <2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity - e.g. less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.
	Reduce severity of collisions where they do occur	Wherever possible routes should include "evasion room" (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	**16.Evasion room and unnecessary hazards**		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.
Comfort	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/gullies, potholes, poor quality carriageway paint (e.g. from previous cycle lane)	**17.Major and minor defects**		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface
		Pavement or carriageway construction providing smooth and level surface	**18.Surface type**		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete paviours with frequent joints.	Machine laid smooth and non-slip surface - e.g. Thin Surfacing, or firm and closely jointed blocks undisturbed by turning heavy vehicles.
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	**19.Desirable minimum widths according to volume of cyclists and route type** (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	**20.Signing**		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	**21.Lighting**		Most or all of route is unlit	Short and infrequent unlit/poorly lit sections	Route is lit to highway standards throughout
			22.Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well-used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	**23.Impact on pedestrians** Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 4.7)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Level remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A
	Minimise street clutter	Signing required to support scheme layout	**24.Street Clutter** Signs are informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on street	**25. Cycle parking** Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure none overlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand
							Audit Score

Indicators	Existing: Score	Existing: Comments	Option 1: Score	Option 1: Comments	Option 2: Score	Option 2: Comments	Option 3: Score	Option 3: Comments
1. Ability to join/leave route safely and easily	1	Quiet street cyclsists to ride on carriageway	1	Quiet street cyclsists to ride on carriageway	1	Quiet street cyclsists to ride on carriageway	1	Quiet street cyclsists to ride on carriageway
2.Provision for cyclists throughout the whole length of the route	2	Connects existing advisory cycle routes of Danebury Avenue / Tostig Avenue.	2	Connects existing advisory cycle routes of Danebury Avenue / Tostig Avenue.	2	Connects existing advisory cycle routes of Danebury Avenue / Tostig Avenue.	2	Connects existing advisory cycle routes of Danebury Avenue / Tostig Avenue.
3.Density of routes based on mesh width	1	Sections of the York Cycle Network within 500m distance.	1	Sections of the York Cycle Network within 500m distance.	1	Sections of the York Cycle Network within 500m distance.	1	Sections of the York Cycle Network within 500m distance.
4.Deviation of route	2	Most direct route	2	Most direct route	2	Most direct route	2	Most direct route
5.Stopping and give way frequency	2	Scaled from 0.4km scheme	0	Scaled from 0.4km scheme	0	Scaled from 0.4km scheme	0	Scaled from 0.4km scheme
6.Delay at junctions	1	Cyclists ride with other motor vehicles	1	Cyclists ride with other motor vehicles	1	Cyclists ride with other motor vehicles	1	Cyclists ride with other motor vehicles
7.Ability to maintain own speed on links	0	Width doesn't account for overtaking on on-street quiet route	0	Width doesn't account for overtaking on on-street quiet route	0	Width doesn't account for overtaking on on-street quiet route	0	Width doesn't account for overtaking on on-street quiet route
8.Gradient	2	1.9% 20ft over 0.2 miles	2	1.9% 20ft over 0.2 miles	2	1.9% 20ft over 0.2 miles	2	1.9% 20ft over 0.2 miles
9.Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit
10.Motor traffic speed on sections of shared carriageway	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit
11.Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit
12.Segregation to reduce risk of collision alongside or from behind	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit	2	Lanes between 3m and 3.2m and assume Motor Traffic Flow <2000pcu/24hr and 20mph speed limit
13.Conflicting movements at junctions	0	Side road junctions untreated	2	Continuous footways across sideroads	2	Continuous footways across sideroads	2	Continuous footways across sideroads
14.Legible road markings and road layout	1	Faded road markings	2	New road markings	2	New road markings	2	New road markings
15.Conflict with kerbside activity	0	Excessive unrestricted parking along the footway - On-street quiet route, no cycle lanes required.	1	Reduced level of parking along the footway - On-street quiet route, no cycle lanes required.	1	Reduced level of parking along the footway - On-street quiet route, no cycle lanes required.	1	Reduced level of parking along the footway - On-street quiet route, no cycle lanes required.
16.Evasion room and unnecessary hazards	2	No features within the carriageway.	2	No features within the carriageway.	1	Proposed buildouts in the carraigeway.	2	No features within the carriageway.
17.Major and minor defects	1	CKD but defects in road surface	1	CKD but defects in road surface	1	CKD but defects in road surface	2	CKD and micro-resurfacing
18.Surface type	1	Concrete with frequent joints	1	Concrete with frequent joints	1	Concrete with frequent joints	2	Micro-resurfacing
19.Desirable minimum widths according to volume of cyclists and route type	2	Meets criteria for quiet street	2	Meets criteria for quiet street	2	Meets criteria for quiet street	2	Meets criteria for quiet street
20.Signing	1	Not currently cycle route	2	Proposed additional signage and road marking	2	Proposed additional signage and road marking	2	Proposed additional signage and road marking
21.Lighting	2	Route is well lit throughout.	2	Route is well lit throughout.	2	Route is well lit throughout.	2	Route is well lit throughout.
22.Isolation	2	Route overlooked by schools and residential property	2	Route overlooked by schools and residential property	2	Route overlooked by schools and residential property	2	Route overlooked by schools and residential property
23.Impact on pedestrians	1	Existing	2	Scheme proposes widened 3m footways.	2	Scheme proposes widened 3m footways.	2	Scheme proposes widened 3m footways.
24.Street Clutter	1	School warning and stopping restriction signs, excessive use of wooden bollards	2	Reduced street clutter and improved public realm	2	Reduced street clutter and improved public realm	2	Reduced street clutter and improved public realm
25. Cycle parking	0	No cycling parking	0	No proposed cycle parking	1	No proposed cycle parking, opportunity to include as part of parklet?	1	No proposed cycle parking, opportunity to include as part of parklet?
Audit Score	**33**	**0**	**38**		**38**		**41**	

	Existing	Option 1	Option 2	Option 3
Max possible score	50	50	50	50
Audit % score	66%	76%	76%	82%
Pass/Fail (70% threshold)	**Fail**	**Pass**	**Pass**	**Pass**
Any Critical Fails? (Y/N)	No	No	No	No
Number of Critical Fails	0	0	0	0

Criteria	Max Score	Sub-criteria Existing	% score Existing	Sub-criteria Proposed	% score Proposed	Sub-criteria Existing	% score Proposed	Sub-criteria Proposed	% score Proposed
Coherence	6	4	67%	4	67%	4	67%	4	67%
Directness	10	7	70%	5	50%	5	50%	5	50%
Safety	16	**11**	69%	**15**	94%	**14**	88%	**15**	94%
Comfort	8	5	63%	6	75%	6	75%	8	100%
Attractiveness	10	6	60%	8	80%	9	90%	9	90%
	50								

Junction Assessment Tool - LTN 1/20- Proposed	
Project Number	60677657
Scheme	Ostman Road
Location	York
Date	08/04/2022
Version Number	
Assessment By	MF
Checked By	LO



Existing JAT - Ostman Road / Tostig Avenue

Movement	Score	0	1	2	Comment
1	1		2	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
2	1		1	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
3	1		1	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
4	1		1	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
5	1		2	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
6	1		2	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
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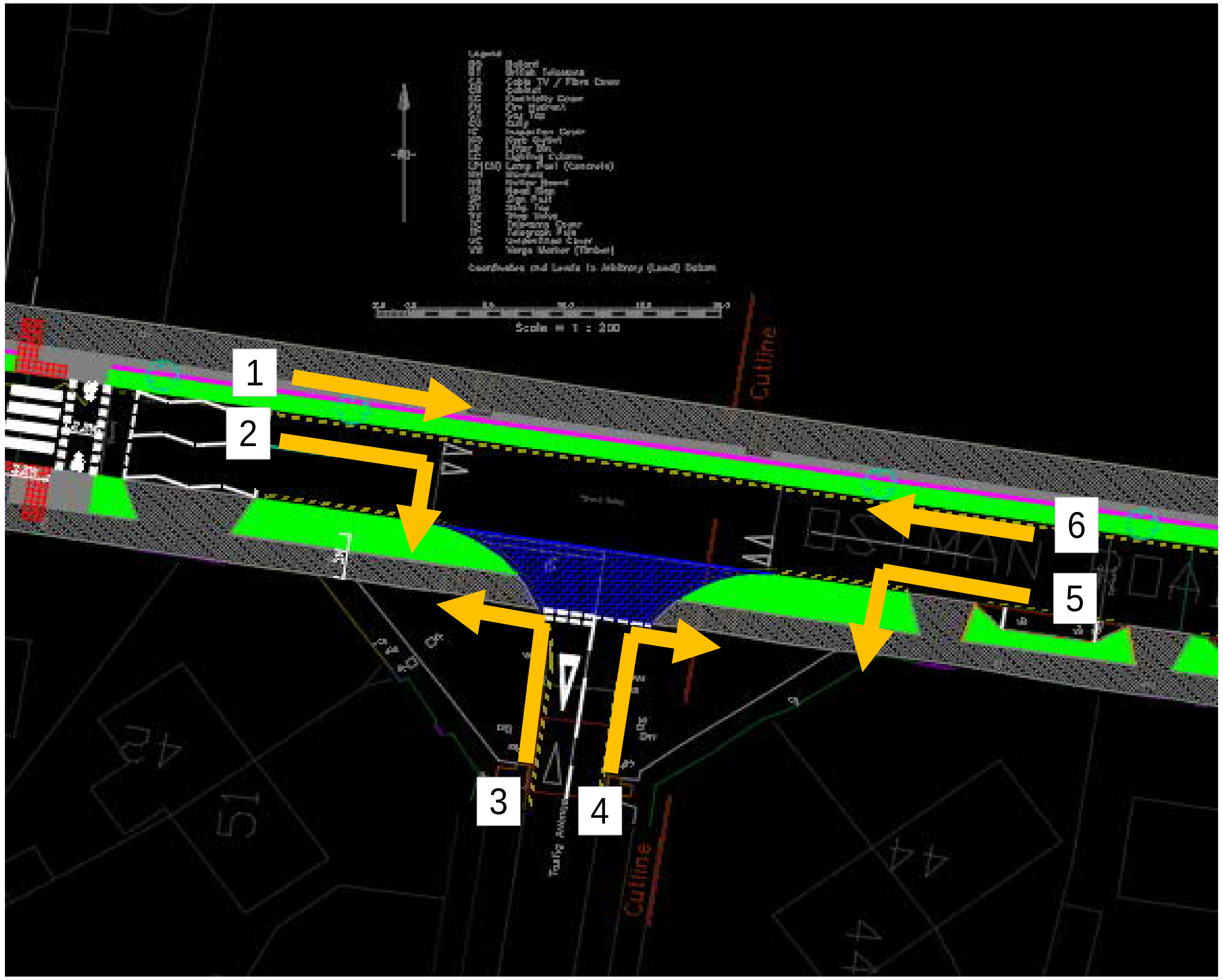

Existing JAT - Ostman Road / Tostig Avenue

Movement	Score	0	1	2	Comment
1	1		2	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
2	1		1	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
3	1		1	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
4	1		1	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
5	1		1	2	Raised table at junction crossed by traffic in potential conflict with cycle movement.
6	1		2	1	Raised table at junction crossed by traffic in potential conflict with cycle movement.
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Bespoke School Street Audit	
Project Number	60677657
Scheme	Ostman Road
Location	York
Date	08/04/2022
Version Number	
Assessment By	MF
Checked By	LO

Key Requirement	Factor	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Existing Layout	Proposed Layout Option 1	Proposed Layout Option 2	Proposed Layout Option 3
Children Cycling / Scootering on footways	Continuity	Shared use		Children cycling on footway space less than 3m	Pedestrian priority with civilised mixed interaction enabled	Pedestrian priority with suggested alternative route for cyclists	0	1	1	1
	Comfort	Footway surface		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete paviours with frequent joints.	Machine laid smooth and non-slip surface - e.g. Thin Surfacing, or firm and closely jointed blocks undisturbed by turning heavy vehicles.	0	2	2	2
	Safety hazard for children scootering / cycling	Buffer / Edge protection from the carriageway near to the school gates.		None - No edge protection	Some - Verged buffer	Significant - Enhanced buffer with level difference.	1	2	2	2
Pedestrians / Children	Engagement On-street	Engagement for children		None	Some	Significant	0	1	2	2
	Accessibility	Bus stop accessibility		Bus stop is not wheelchair accessible, ie the kerb height is less than 100mm	Bus stop is wheel chair accessible but there is limited clear space around bus stop	Bus stop is wheel chair accessible and there is clear space around the bus stop	1	2	2	2
	Ease of crossing	Ease of crossing side road	The weakest side road is missing at least 1 dropped kerb or these are not on the desire line.	The weakest side road has dropped kerbs and these are on the desire line or a raised table / continuous footway	The weakest side road has a narrow, tight geometry such that a turning motorised vehicle must slow down to less than 10mph but instead of a raised table it at the entrance it has dropped kerbs	The weakest side road has a narrow, tight geometry such that a turning motorised vehicle must slow down to less than 10mph and raised table / continuous footway at the entrance	1	2	2	2
	Safety hazard for children crossing	Standard of crossing facilities		Uncontrolled crossing with no gaps in traffic, lack of priority	Signalised crossing or implied priority	Countdown with signalised crossing, priority with unsignalised	0	2	2	2
General traffic	Vechile Speeds	Vechile Speeds	When motorised traffic is travelling at its fastest the majority of vehicles are travelling at 30mph+	When motorised traffic is travelling at its fastest the majority of vehicles are travelling at 25-30mph	When motorised traffic is travelling at its fastest the majority of vehicles are travelling at 20-25mph	When motorised traffic is travelling at its fastest the majority of vehicles are travelling below 20mph	2	2	2	2
	Volume of Motorised Traffic	Volume of Motorised Traffic	There are 1000+ vehicles in the peak our (both directions)	There are 500-999 vehicles in the peak our (both directions)	There are 200-499 vehicles in the peak our (both directions)	There are 199 or fewer vehicles in the peak our (both directions)	1	1	1	1
	Mix of Vehicles	% of Heavy Vehicles	The proportion of large vehicles is greater than 5% of motorised traffic in the peak hour	The proportion of large vehicles is greater than 2-5% of motorised traffic in the peak hour	The proportion of large vehicles is greater than 2% of motorised traffic in the peak hour	No large vehicles use the street	1	1	1	1
	Reducing private car use	TRO's / Measures to reduce the number of parked cars		There are no new parking restrictions / Existing TRO's ignored / Parking across driveways.	There is a mixuture of parking and public realm ammenity	Parking will no longer have an impact in and around the school gates and is prevented by both TRO's and physical features within the carraigeway	0	1	2	2
	Reducing convenience of driving short journeys	Through movement of traffic		Assessing the street as a whole, there are no restrictions on through movement for private motorised traffic but there are parking restrictions outside the school	Assessing the street as a whole there is no through-movement for private motorised traffic at certain times	Assessing the street as a whole there is no through-movement for private motorised traffic at all times	0	0	0	0
	Delays	Delays to the number 5 bus route		Delays to number 5 bus route at peak times due to parking outside of school gates.	Delays to the number 5 bus route persist but don't worsen	Improvements or no delay to the number 5 bus route	1	1	1	1
	Behaviour Influence			Layout encourages aggressive behaviour	Layout controls behaviour throughout	Layout encourages civilised behaviour: negotiation and forgiveness	1	1	2	2
Environmental	Lighting	Lighting	Assessing the full length of the street, there is no street lighting over the footways on this street	Assessing the full length of the street, street lighting provides intermittent lighting of the footway on one side of the street	Assessing the full length of the street, street lighting provides intermittent lighting of the footway on both sides of the street	Assessing the full length of the street, street lighting provides continuous lighting of all the footway on both sides of the street	2	2	2	2
	Litter /	Litter		Litter and foliage build-up is considered sigificant	There is some litter and foliage build-up within the study area and at least 1 litter bin provided within the study area.	There is no issue with litter or foliage build-up and at least 1 litter bin is provided within the study area.	2	2	2	2
	Planting	Amount of planting		Amount of greenery is reduced within the study area.	Amount of greenery is retained within the study area.	Amount of greenery is increased / enhanced within the study area.	1	1	1	1
	Greening	Green infrastructure and sustainable materials		No green infrastucture or sustainable materials proposed	Some green infrastructure or sustainable materials proposed	All infrastructure is green and materials are sustainable	2	1	1	1
Cost	Budget	Cost to implement propsed design		High	Med	Low	2	2	1	0
Buildability	Feasibility	Interfernce with C2s		Significant impacts on statutory undertakers and/ or re-routing of equipment	Minor impacts on statutory undertakers.	None of the proposed works would affect statutory undertakers.	2	1	1	1
Public Realm	Visual interest	Quality and distinction		Uniform	Variety	Unique feature	0	0	1	2
	Diversity	Conditions for pleasant interaction		Single activity area.	Mixed use properties	Different uses and users at different times. Social interaction encouraged through street design choices.	0	1	2	2
	Area character	Materials matched to surroundings		Poor	Some contrast	In keeping	0	1	1	2
						Total Score	20	30	34	35
						Maximum Potential Score	46	46	46	46
						Audit % score	43%	65%	74%	76%

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