



**Brighton & Hove
City Council**

**ENVIRONMENT, TRANSPORT &
SUSTAINABILITY COMMITTEE
ADDENDUM**

4.00PM, TUESDAY, 4 MARCH 2014

COUNCIL CHAMBER, HOVE TOWN HALL

ADDENDUM

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90.	DYKE ROAD PED & CYCLE FACILITIES: OBJECTIONS TO TRO	9 - 66

WRITTEN QUESTIONS**(iii) Dyke Road Park Cycle and Pedestrian Improvements- Judith Waite**

Given that:

“Choice of crossing facilities should be appropriate for prevailing environment (5.1.3) minimum of 1,000 Windlesham crossings per day on busy road with no speed cameras/School highway signs •Signalised Crossing benefits the high number of children (5.5.6) removes need for pedestrians to assert precedence/warns vehicles to stop (5.5.3) Zebra visibility concerns(7.1.1/5.5.6) •Zebra causes 'peak time' vehicle delays (5.2.19 /5.2.17) vehicles less likely to adhere to highway rules •No definitive safety argument in favour of Zebra (5.5.11) Why risk changing current crossings which pedestrians trust when fit for purpose/have good safety record (5.5.9/5.5.10)?”

Note: brackets indicate references to 'Dyke Road Cycle and Pedestrian Improvements' Pedestrian Crossing and Guardrailing Assessment (reference number 102470)'

(iv) Preston Park Triangle Informal Consultation- Leona Vincent

"Can you reconsider and include Preston Drove, or the Eastern half of it, in the proposed extension to CPZJ?

Preston Drove is a long road with different requirements at either end. There may be a higher parking : household ratio overall, but mainly due to parking alongside Preston Park in the west. At the Eastern end there are houses and shops both sides of the road and parking is already under severe pressure. Here Preston Drove suffers displacement parking from the existing CPZ, there is no doubt it will get a lot worse if it is removed from the proposed extension."

DEPUTATIONS FROM MEMBERS OF THE PUBLIC

Notification of two Deputations has been received. The spokesperson is entitled to speak for 5 minutes.

(v) Deputation concerning 20mph Speed Limit for Surrenden Road**Spokesperson: Esther Gill**

“We are three local residents with children at Dorothy Stringer and Varndean School who would like to ask you to rethink your decision to keep Surrenden Road at 30 mph. We thank a number of you who have come and seen for yourselves just how dangerous this road is, particularly at school opening and closing times. Hundreds of children (many as young as 11) cross this dual carriageway daily on their way to and from school and college. The Council’s own research show that cars regularly drive in excess of 30 mph; there is at least one dangerous blind corner on the road and not a single controlled crossing along the whole road where children can control the traffic. You would not want your children or grandchildren crossing this road at 8.30am on a school day. As one of our daughters said, “Sometimes, you just have to go for it”.

We have been told by Council Officers that they recognise that there is a road safety issue on Surrenden Road which is why they have recommended a 20mph speed limit, as well as a number of planned traffic calming measures for installation this year. However, we are very concerned that this opportunity will be wasted as the proposed new measures do not include any controlled crossing that would allow children to stop the traffic. The road already has dropped curbs and they don’t help the children who still have to take a chance and run across the road as quickly as possible to avoid the vehicles, many of them travelling in excess of 30 mph.

Those Councillors who took up the invitation to meet us, saw for themselves just how dangerous this road is and how cars have to suddenly break as teenagers dash out in front of them having just got off a bus. To successfully deal with this safety issue, it is critical we first deal with the speed of traffic on the road and then introduce measures to allow children to stop the traffic.

This is not a ward issue as children from across Brighton and Hove go to schools and colleges on this campus. Right next to the schools is a dual carriageway where cars regularly drive in excess of 30 mph. There is not one location on the entire road where children can stop the traffic. Every day we see children as young as 11 half running, half hesitating when they see a gap in the traffic. You can see in their faces they are unsure whether it is safe or not to cross. Often it is not.

We ask you as community leaders to prioritise the safety of children and young people who are travelling to and from school and college. Listen to the local community who voted with a significant majority for the 20mph zone and reconsider your vote to allow the 20mph speed limit on Surrenden Road. Many thanks for listening to what we have to say.”

Nicolette Fox, Esther Gill, Sandra Staufer

Supporting Information:

We are sure you know the facts, but they are so important that they are worth repeating:

- 1) Surrenden Road is a busy dual carriageway and sits alongside the largest campus of schools in Brighton. Over 5000 children and young people attend the schools and colleges on this campus (Varndean College, Downs View Link College, Dorothy Stringer School, Varndean School, Balfour Primary School) and a significant number of them will need to cross Surrenden Road on a daily basis, either because they live south or west of the road, or because they travel to school by bus, something that the Council actively encourages.
- 2) Well over half (57%) of Surrenden Road residents, who voted in the 2013 consultation, were in favour of the 20mph limit across the area. The Preston area as a whole voted 62.8% in favour of the 20 mph limit – the highest majority in favour of the 20mph in the consultation. There is significant support in the Preston area for a 20mph speed limit.
- 3) "Vehicle speeds predict both the frequency as well as the severity of pedestrian injuries. Five percent of pedestrians would die when struck by a vehicle travelling 20 mph, about 40 percent for vehicles travelling 30mph, about 80 percent for vehicles travelling 40mph." *National Highway Traffic Safety Administration, 1999. Literature Review on Vehicle Travel Speeds and Pedestrian Injuries.*
<http://www.nhtsa.dot.gov/people/injury/research/pub/HS809012.html>.
- 4) We also know that from the council's own figures from June 2013 that 85% of traffic driving north along Surrenden Road breaks the speed limit by travelling at 34mph. We often see vehicles driving considerably faster than this.
- 5) Martin Heath, Brighton and Hove Road Safety Manager, has confirmed to us that the proposed pedestrian works on Surrenden Road, that will begin shortly, do not include any controlled crossings that will allow children to stop the traffic.
- 6) The part of Surrenden Road that buses use is less than one mile long. At 30mph, a bus driving consistently at the speed limit and not stopping will take two minutes to do this journey. The same bus driving consistently at 20mph and not stopping will take three minutes to do this journey. It is very unlikely, due to parked cars, pedestrians and bus stops that buses currently travel at 30mph down this road.

(vi) Deputation from ConsultUs (Community Parking Committee)

James Thompson (Lead Spokesperson)
Angela Moore
Ruth Keynes
Suzanne Jarrett
Neil Waugh
Nigel Goddard

ConsultUs (Community Parking Committee) was formed in response to local resident's concerns that a parking solution was being imposed on the area which did not address adequately the parking issues within our community.

Peter Turner's letter of 6th January to residents advising the advertisement of formal Traffic Orders stated that this stage "is still part of the consultation procedure and members of the public are still able to comment, support or object to part or all of the proposals."

The Officers report to this committee released on 24 February (4.40pm) advised that out of 203 items of correspondence received in response to this stage of the consultation, 141 were objections to the proposals. So 69%, i.e. over 2/3rds of respondents are opposed to the proposed scheme. In the correspondence objecting to the implementation of these proposals many residents raised a number of salient points which officers have simply chosen to ignore. There is no mention in the appendices of these issues, it simply concludes "not needed in the area". This is a complete misrepresentation of resident's views and concerns and is evidence of some serious flaws in the report.

Previously at the Committee meeting on 26 November 2013, a petition was handed in containing 260 signatures opposed to scheme, yet this is not mentioned in the background to the report.

Dyke Road (East) has been included in the scheme but has a completely different set of requirements. The issue is double yellow lines NOT residents parking. Stripping away this confusion, shows that a majority of residents with real parking needs were against a scheme.

So why are the Officers recommending that the Committee approves this scheme?
What clearer message is needed that there is not a majority in favour.

The Council has already flouted its own Policy HP4/15 which states "that a new area will be recommended for funding provided that a majority of resident are in favour of the scheme." The result of the original (and only) questionnaire was exactly 50% for/50% against.

So why is the Committee recommending spending tax payers money on an inappropriate parking scheme without a mandate to do so?

The Council claims it embarked on this consultation after representations from residents and Ward Councillors. But there are no published conclusions from a Traffic Survey (unlike the Preston Park Triangle consultation) which demonstrate a proven need for either a 7 day or 5 day scheme.

In conclusion,

- **a majority of residents are not in favour of this proposed scheme**

- **the evidence for a scheme has been weak and is not underpinned by firm evidence**
- **if the Committee approve this report the Members will be agreeing to unlawfully adopt a scheme in contravention of its own policies**
- **in view of the undisputed response from residents, we urge that Members act democratically and do NOT approve the Traffic Orders**

Background Information

Response to individual points made in the Report to Committee

3.7 "residents on this section of the east side of the road were included in the consultation as they would be able to apply for Area E permits as part of the resident eligible for permits within the scheme. we are proposing double yellow lines right outside these properties [Dyke Road (East) 280-346 even numbers] without an opportunity to park safely nearby."

This is untrue - ample opportunity exists on Dyke Road (West) and the roads on the Hove side of Dyke Road which is physically closer than proposed Area E.

3.9 "there were no parking problems at weekends"

This is untrue - there is no evidence from the statistics obtained from the Traffic Survey that was carried out on Tuesday 19 March 2013 and Saturday 23 March 2013, that there is a difference between weekday parking and weekend day parking.

3.10 "It is clear...."

This is untrue - how can it be clear what somebody who opposes a scheme wants from interpreting their comments? The word "interpretation" is key here. To truly understand what residents want would require another questionnaire including a yes/no preference question.

4.7 (repeated at 4.50) "The formal TRO stage is seen as a period to outline concerns rather than put forward support again as this would have been represented during the initial consultation period."

This is untrue - Peter Turner's letter of 6th January to residents advising the advertisement of formal Traffic Orders stated that this stage "is still part of the consultation procedure and members of the public are still able to comment, support or object to part or all of the proposals." The officers have misled residents if the TRO stage is only to outline concerns, rather than to influence the scheme's destiny.

4.26 "The council is aware that the introduction of a parking scheme may (emphasis added) cause some displacement into adjacent areas..."

This is untrue - the introduction of a parking scheme will cause some displacement into adjacent areas. Why else are double yellow lines being introduced under a separate Traffic Order in Withdean Road and Withdean Avenue on the periphery of the area.

4.48 "over 60 of the representations in objection were handed in together in the same envelope (emphasis added)..."

This is untrue - a bundle of individual letters in individual envelopes were delivered to the council offices. The inference here is that coercion was used to obtain objections to the scheme. The council is welcome to check all respondents genuinely objected to the scheme (addresses are shown on all letters). Councillors must be aware that a petition can be an organised survey, but that makes it no less relevant in expressing the collective views of individuals.

Thought for the day

If commuters and displaced vehicles from Zone A, or elsewhere, are contributing to the perceived problem in Matlock Road, Maldon Road, Tivoli Road and Tivoli Crescent North, why are the empty spaces in adjoining Zone A not being utilised to avoid the need for a scheme in proposed Area E? Why is the council reluctant to address this question?

Note: The photographs below were all taken early on a Sunday morning when residents cars had not left Zone A and give an accurate representation of the amount of under occupancy that exists.



Parking is a problem in the proposed Zone E?



Subject:	Dyke Road – pedestrian and cycle facilities – Objections to TRO (TRO-27a-2013 and TRO-27b- 2013)		
Date of Meeting:	4th March 2014		
Report of:	Executive Director of Environment, Development & Housing		
Contact Officer:	Name:	Abby Hone	Tel: 29-0390
	Email:	abby.hone@brighton-hove.gov.uk	
Ward(s) affected:	Hove Park and Preston Park		

FOR GENERAL RELEASE

Note: The special circumstances for non-compliance with Council Procedure Rule 3, Access to Information Procedure Rule 5 and Section 100B(4) of the Local Government Act 1972 (as amended), (items not considered unless the agenda is open to inspection at least five days in advance of the meeting) was due to the need for officers to commission an additional independent assessment of the proposed changes to the pedestrian crossing facilities.

1. PURPOSE OF REPORT AND POLICY CONTEXT

- 1.1 The purpose of this report is to address comments and objections to the draft Traffic Regulation Orders (TRO) associated with the introduction of pedestrian and cycle facilities at Dyke Road between the junctions of The Upper Drive and Old Shoreham Road; specifically mandatory cycle lanes and removal and relocation of vehicle parking to enable the cycle facilities to be installed. Proposals for the facilities were brought to Environment, Transport and Sustainability (ETS) committee on 8th October 2013 requesting permission to conduct informal public consultation. Results of the informal consultation were acknowledged and permission to advertise TROs associated with the scheme was agreed at ETS committee on 26th November 2013.

2. RECOMMENDATIONS:

- 2.1 That, having taken account of all duly made representations and objections, the Environment, Transport and Sustainability Committee approves as advertised the following orders:

- Brighton & Hove Various Controlled Parking Zones Consolidation Order 2008 Amendment Order No. * 20** (ref. **TRO-27a-2013**)

Dyke Road – relocation and removal of Shared permit and Pay & Display Parking in the section of Dyke Road between Old Shoreham Road and The Upper Drive and relocation of a motorcycle bay. Additional double yellow lines will also be implemented where needed to prevent obstruction.

- Brighton & Hove Outer Areas (Waiting, Loading and Parking) and Cycle Lanes Consolidation Order 2013 Amendment Order No.* 201* (ref. **TRO-27b-2013**)

Dyke Road - new lengths of mandatory cycle lane on east side of the road between Old Shoreham Road and The Upper Drive and on west side between Old Shoreham Road and Port Hall Road.

Note: Where a cycle facility is 'mandatory' civil enforcement officers are able to legally enforce the facility against vehicle parking and thus keep the facility safe for people to cycle along it.

A link to the documents associated with the draft TRO (Notice, Traffic Regulation Order detailing measurements, Statements of Reasons and associated plans) can be found in background documents to this report.

- 2.2 That any minor adjustments deemed appropriate by officers are added to the proposed scheme during implementation and advertised as an amendment Traffic Regulation Order (for example, some of the parking may be specifically required for disabled users only, the location to the bus stop may need to switch with parking, thereby increasing parking space)
- 2.3 That given the level of interest generated by advertisement of TROs associated with the scheme in relation to formal crossing provision a report is brought back to this committee once all elements of the scheme are implemented except the proposed changes to the two existing pelican crossings and the guardrailing outside the entrance to Windlesham School . The implementation of cycle facilities, changes to parking and bus stop arrangements are not dependent on the type of formal crossing. The opportunity to review incremental change at Dyke Road will enable members of the committee to experience the physical changes that also have potential to inform any final recommendations and decision by a future committee in relation to the type of formal crossing arrangements and associated railings.

3. CONTEXT/ BACKGROUND INFORMATION

- 3.1 A report requesting permission to informally consult on proposals to improve cycle and pedestrian facilities at Dyke Road was first taken to ETS committee on 8th October 2013. A subsequent report detailing the outcome of the informal consultation was taken to ETS on 26th November 2013. The result of the consultation showed 65% of those who responded were in favour of the proposals overall and permission was requested to advertise associated Traffic Regulation Orders. Links to both reports and supporting documents, including analysis of informal consultation results are included in background documents to this report.
- 3.2 The series of improvements proposed for Dyke Road between Old Shoreham Road and The Upper Drive/ Highcroft Villas have been designed to create a welcoming and supportive environment which positively encourages people to walk, cycle and use public transport along this busy section of Dyke Road. There are a high number of schools and colleges in the area (demonstrated by

the Trip Attractor map in **Appendix 1**). An increasing number of students are due to attend sixth forms at BHASVIC and Cardinal Newman following development at both establishments. There are also plans for an Open Air Theatre in Dyke Road Park expected to seat 400 people. More people travelling to, or through the area puts greater pressure on the transport network. Such pressure makes it important to provide a street environment fit for the future and one that helps people, particularly young people, to travel safely, independently and sustainably. From Old Shoreham Road to The Upper Drive there are currently no dedicated cycle facilities, the proposals help create another important link towards a high quality strategic cycle network. There is also scope to improve and simplify the walking and bus waiting environment.

3.3 Proposals include:

- Dedicated cycle facilities
- Simplified pedestrian crossing facilities
- Raised crossing at junction of Port Hall Road
- Re-aligning public highway where needed and removal of unnecessary street clutter
- Improved bus stop areas
- Relocation and removal of parking facilities where necessary

4. ANALYSIS & CONSIDERATION OF ANY ALTERNATIVE OPTIONS

- 4.1 While a good solution could be to create an 'urban clearway' with removal of all parking and waiting restrictions along this section of Dyke Road, it was considered impractical for some users of Dyke Road Park. It is also unlikely that residents, businesses and users of Dyke Road Park would support the removal of all parking, loading and waiting restrictions.

5. COMMUNITY ENGAGEMENT & CONSULTATION

- 5.1 Informal consultation on the proposals, including detail of the impact on parking facilities in Dyke Road was held between 21st October 2013 and 17th November 2013. A report highlighting the results was taken to ETS committee on 26th November 2013, a link to the report including an analysis of the consultation results is included in background documents to this report. The draft Traffic Regulation Orders (TROs) were advertised on 16th December 2013 with the closing date for comments and objections on 13th January 2014. A period of 28 days rather than the standard 21 days was advised by B&HCC legal to take account of the TROs being advertised during the Christmas period.
- 5.2 The Ward Councillors for the areas affected were sent TRO information directly, as were other statutory consultees such as the Emergency Services.
- 5.3 Notices were put on street for 16th December 2013 which outlined the proposed TROs. The Notice was also published in The Argus newspaper. The TRO documents were also available to view at City Direct Offices at Bartholomew House and Hove Town Hall.

Objections

- 5.4 A total of 68 people have objected to the TROs overall. 9 people objected to TRO-27a- 2013 only and 59 people objected to both TRO-27a-2013 and TRO-27b2013. 75 pieces of correspondence were received (7 of those pieces of correspondence were the same people responding separately to each TRO associated with the scheme). The correspondence stating an objection to the TROs has been reviewed in order to understand the various reasons behind the objections. The comments made in all 75 pieces of correspondence have been reflected in the summary of themes and responses included in **Appendix 3** of this report.
- 5.5 The most common objection theme was not associated directly with the TROs advertised but in relation to the type of formal crossing provision being proposed. The second highest theme was related to the shared use path proposed for cycles (northbound only) and pedestrians on the north-east pathway adjacent to Dyke Road park. The shared use facility also does not require a TRO to implement. The third highest number of comments received was in relation to the reduction and relocation of parking which is directly related to TRO-27a-2013.
- 5.6 When early discussions were held with representatives of Friends of Dyke Road Park about improving cycle and pedestrian access along Dyke Road some concerns were raised around changing formal crossing facilities from light controlled to Zebra. As a result a question in the informal consultation questionnaire specifically asked: Should the existing crossings be changed to raised and widened zebra crossings? The crossings were highlighted on the informal consultation plans. 55% of those who responded to the questionnaire were in favour of changing from light controlled to Zebra.
- 5.7 The number of comments related to proposed changes to formal crossing arrangements has resulted in officers commissioning a further independent assessment of the existing crossing arrangements (see **Appendix 2**). The report highlights benefits and dis-benefits to both types of formal crossing but overall concludes that:

'Both pedestrians and vehicles will experience less delays overall if both signalised crossings were replaced with Zebra crossings. There would be brief peak periods where vehicle delays would be increased by zebra crossings.

There is little justification for facilitating cycle crossing at either location with signals.

There would be some benefit to raising both crossings, this benefit would be greater at the southern crossing.

There is no definitive safety argument in favour of either a Zebra or signalised crossing at each location, both crossing types would be sufficiently safe.

In relation to guard railing the report concludes: It would be beneficial to remove all of the guard railing at both crossing' (pgs.31 & 34 **Appendix 2**)

- 5.8 The introduction of dedicated cycle facilities (lanes) was well supported at informal consultation stage (64%). Dyke Road has a very restricted width to accommodate dedicated cycle lanes if two-way general traffic is to remain. Public highway width is also considerably restricted by the number of mature trees lining the street, both adjacent to the carriageway and footways. Opportunities to create dedicated cycle facilities become increasingly restricted when parking facilities are to be retained. By working through how best to accommodate parking, cycle facilities and a decent pedestrian/bus waiting environment a shared use path was deemed the best possible solution against recognised constraints at the section of route on the west side of Dyke Road north of Porthall Road. Fears of cycle user and pedestrian collisions have been cited by some people objecting to the TROs. A response is included in **Appendix 3**.
- 5.9 A number of Highway Authorities in the UK implement shared use areas for pedestrians and cycles, B&HCC have generally taken the opportunity to segregate where possible and integrate on short sections only, for example at Old Shoreham Road. Proposals for Dyke Road include widening some of the upper footway area adjacent to Dyke Road Park which is being proposed as shared for cycle users heading northbound only. While we anticipate the lower path in Dyke Road Park will become more pedestrian dominated the proposals do not restrict pedestrians from using the upper path as well. If vehicle parking is to be retained alongside the west side of Dyke Road adjacent to the Park then cycle users should not be put in a position of conflict with vehicles parking.
- 5.10 The proposal to remove parking at the southern end of Dyke Road opposite BHASVIC was considered very carefully. 55% of those responding to the informal consultation supported the removal and relocation of parking opposite BHASVIC. Constraints of the area already highlighted in consultation documents show it is not possible to introduce a minimum standard 1.5m width dedicated cycle facility on both sides of the carriageway, fit for the purpose of young people cycling to school, on a road with high traffic volume and a 30mph speed limit without removal of some parking. The proposals have sought to mitigate the impact of the removed parking by assessing availability in adjacent controlled parking areas and increasing the number of general shared pay and display parking facilities adjacent to Dyke Road Park. A total of 15 shared pay and display parking spaces, two disabled bays and one motorcycle bay are proposed to be removed.
- 5.11 It should be noted that the balance of support or objection to a TRO is not a measure of the overall level of support or opposition towards the scheme as proposed. The public consultation conducted previously provided this opportunity and as noted, the results indicated a good level of support for the scheme overall. This level of support has been accepted by the Environment, Transport and Sustainability Committee at its previous meeting on 26th November 2013 where cross-party support was given to proceed to the next stage of the process, namely advertising of associated TROs.
- 5.12 While the results of the public consultation demonstrated a good level of support for the proposals, it also highlighted that some people are opposed to the scheme and the principles that underlie it. However, the majority of respondents are in favour of the proposals, including the provision of improved cycle facilities.

This provides a full mandate to continue with implementation of the scheme as proposed. In relation to changes to the crossing proposals 55% of those who responded were in favour of changing crossing arrangements to zebras. It is a commonly held perception that changing crossing facilities from light controlled (pelican) to pedestrian demand controlled (zebra) constitutes a 'down-grade' in crossing provision. As the Pedestrian Crossing and Guardrailing Assessment report concludes (**Appendix 2**) there are benefits to be gained for all users from the crossing arrangements proposed through due process. This arrangement is no less safe and shows a positive outcome for pedestrian priority through reduced delay.

- 5.13 B&HCC's road safety campaign messaging to all road users is very clear 'Share the road, share the responsibility'. The scheme proposed for Dyke Road and its composite elements re-enforce this message, encouraging greater engagement from all users with the physical environment and people using the street. The scheme supports people to think and act appropriately in a traffic calmed street environment and then to behave and respond accordingly.

6. CONCLUSION

- 6.1 The recommendation is that all elements of the scheme should progress except those relating to the two existing pelican crossings and guard railing outside the entrance to Windlesham School. Allowing the opportunity for ETS committee members and members of the public to observe some of the physical changes in place, designed to bring a street environment more conducive to walking, cycling and taking the bus, will help the committee reach their final decision in relation to these reserved matters.

7. FINANCIAL & OTHER IMPLICATIONS:

Financial Implications:

- 7.1 It is anticipated that the capital costs of the scheme will be funded from the Local Transport Plan (LTP) capital programme and Section 106 developer contributions. An allocation of £100,000 in 2013-14 and an indicative allocation of £50,000 in 2014-15 financial years have been made for the scheme from the Local Transport Plan (LTP) capital programme. Section 106 development contributions of approximately £90,000 have been requested subject to planning approval to extend BHASVIC Sixth Form College.

The cost of officer time associated to the scheme will be met from within existing Council revenue budgets.

It is anticipated that the impact of the removal of pay and display parking provision will result in a loss of income of between approximately £7,000 and £10,000 per annum.

Finance Officer Consulted: Steven Bedford

Date: 13/02/14

Legal Implications:

- 7.2 The amendment orders which are the subject of this Report's recommendation are made under the provisions of the Road Traffic Regulation Act 1984. The procedure for advertising the orders is contained in the Local Authorities' Traffic Orders (Procedure) (England and Wales) Regulations 1996. Any person may object to an order and any duly made but unresolved objections must be considered by this Committee.

Statutory authority for the provision of cycle tracks is found in section 65 of the Highways Act 1980.

Lawyer Consulted: Hilary Woodward

Date: 17/2/14

Sustainability Implications:

- 7.4 The measures outlined in this report will promote and encourage greater use of sustainable transport, and particularly overcome current barriers to walking, cycling, and bus use. It is predicted that reductions in travel by private car would result from implementation of the scheme, with people instead choosing to travel by walking, cycling or bus due to their increased attractiveness and viability made possible through the improvements identified. The scheme will seek to enhance health by encouraging active travel amongst local people.

Any Other Significant Implications:

Crime & Disorder Implications:

- 7.5 The scheme as proposed is likely to have a positive impact through increased use of sustainable transport modes and increasing natural surveillance by encouraging more people on foot and on bike to use the area.

Public Health Implications:

- 7.6 There is a clear need to improve public health by increasing ease of access to travel actively for both utility and education related trips. Creating an environment which carefully supports people to travel in a sustainable, active way along Dyke Road will help BHCC meet its obligations. Increasing the number of pedestrians and cyclists and encouraging greater use of public transport will directly lead to improved public health through increasing the amount of exercise undertaken by local people. Reducing the number of people travelling by private vehicle will also lead to an improvement in air quality which in turn will improve public health.

Corporate / Citywide Implications:

- 7.7 Creating an environment conducive to walking & cycling along Dyke Road, meets LTP3 objectives to:
- Create safe and attractive streets and places that everyone can use responsibly
 - Enable greater access to a wide range of goods, services, and places, including the city's natural environment.

- 7.8 The proposals support two City Council priorities for 2013-15:

- Tackling inequality
- Creating a more sustainable city

SUPPORTING DOCUMENTATION

Appendices:

1. Trip Attractor map, showing density of schools
2. Pedestrian Crossing and Guardrailing Assessment report
3. Summary of themes & officer responses to TRO objections

Documents in Members' Rooms

1. Pedestrian Crossing and Guardrailing Assessment report
2. Summary of themes and officer responses to TRO objections
3. TRO responses

Background Documents

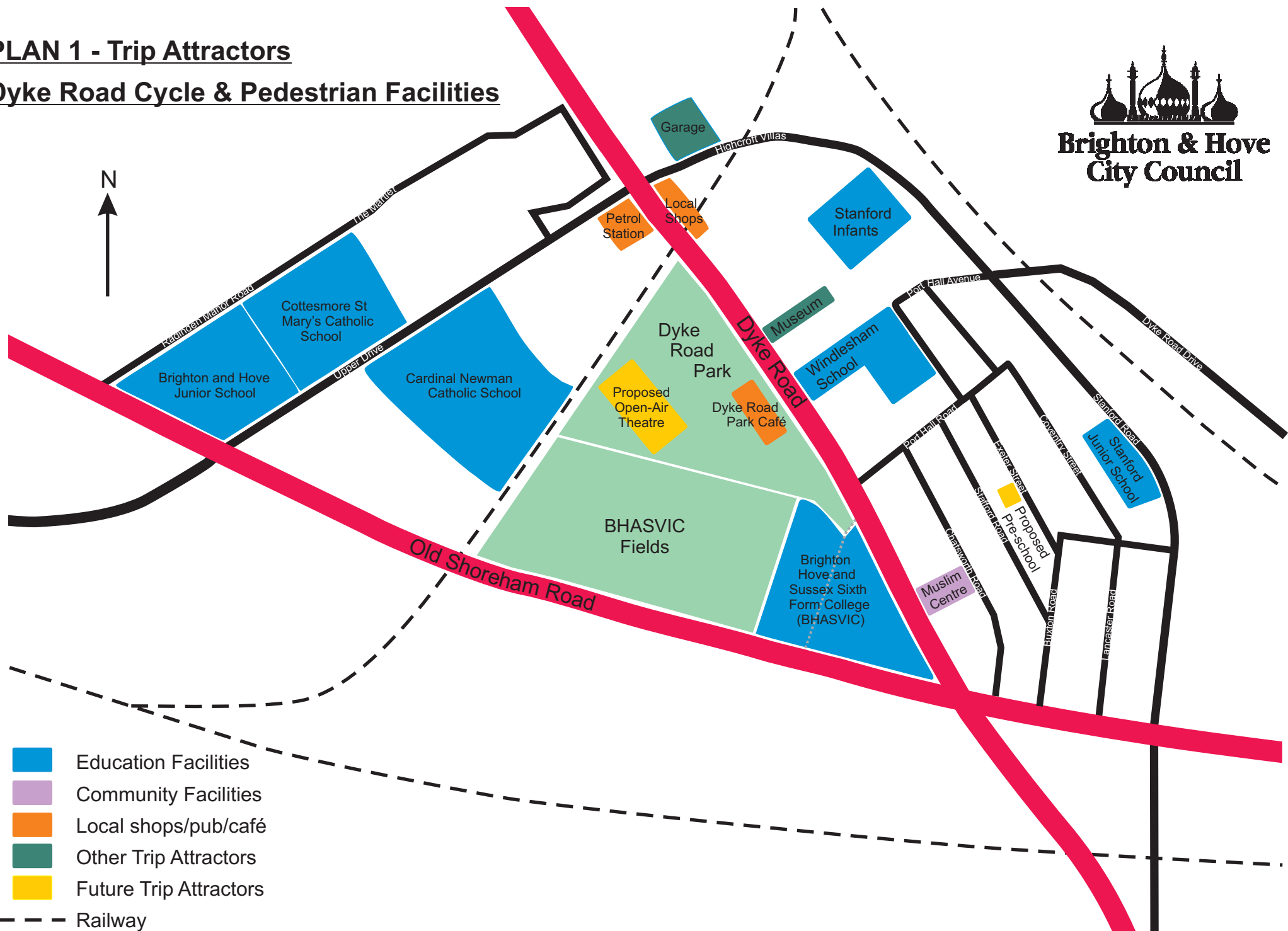
1. Traffic Regulation Order documents for TRO-27a-2013 and TRO-27b-2013 (including TRO plans to accompany TRO notices advertised, 3No. plans total):
<http://www.brighton-hove.gov.uk/content/parking-and-travel/parking/traffic-regulation-order-tro-proposals>
2. Dyke Road – cycle and pedestrian facilities – Permission to consult report:
[http://present.brighton-hove.gov.uk/Published/C00000823/M00004788/\\$\\$Supp15448dDocPackPublic.pdf](http://present.brighton-hove.gov.uk/Published/C00000823/M00004788/$$Supp15448dDocPackPublic.pdf)
3. Dyke Road – cycle and pedestrian facilities – Consultation results & permission to advertise TROs;
[http://present.brighton-hove.gov.uk/Published/C00000823/M00004789/\\$\\$Supp15561dDocPackPublic.pdf](http://present.brighton-hove.gov.uk/Published/C00000823/M00004789/$$Supp15561dDocPackPublic.pdf)







PLAN 1 - Trip Attractors

Dyke Road Cycle & Pedestrian Facilities



**Brighton & Hove
City Council**



-  Education Facilities
-  Community Facilities
-  Local shops/pub/café
-  Other Trip Attractors
-  Future Trip Attractors
-  Railway

PEDESTRIAN CROSSING AND GUARDRAILING ASSESSMENT



SYSTRA

DYKE ROAD CYCLE AND PEDESTRIAN IMPROVEMENTS

PEDESTRIAN CROSSING AND GUARDRAILING ASSESSMENT

IDENTIFICATION TABLE

Client/Project owner	Brighton and Hove City Council
Project	Dyke Road Cycle and Pedestrian Improvements
Study	Pedestrian Crossing and Guardrailing Assessment
Type of document	Report
Date	14/02/2014
File name	20140214_Pedestrian_Crossing_Assessment
Reference number	102470
Number of pages	36

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	Alexis Fuller	Analyst	21/02/2014	
	Checked by	Martin Hempell	Senior Consultant	21/02/2014	
	Approved by	Glenn Higgs	Managing Consultant	21/02/2014	
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Table 1. Crossing Delay Comparison

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1. INTRODUCTION

1.1.1 SYSTRA was commissioned by Brighton and Hove City Council (BHCC) to provide an assessment of the effectiveness of the two Pelican pedestrian crossings on the stretch of Dyke Road between the Old Shoreham Road and Highcroft Villas Junctions. This crossing review ties in with the wider proposals being developed for Dyke Road by SYSTRA.

1.1.2 The operation of the existing crossings is evaluated as well as potential options for their improvement, including their location and type. An analysis of the necessity for the guardrailing which currently exists at each location is also undertaken. The report draws conclusions about the nature of the existing crossing provision and provides recommendations for the optimum pedestrian crossing arrangement within the study area.

1.1.3 This report is set out as follows:

- Background character assessment of the Dyke Road area and the existing pedestrian crossings as well as traffic flows;
- Analysis of the operation of the existing crossings;
- Assessment of the optimum number, location, type and design of pedestrian crossings within the study area;
- Evaluation of the existing guardrailing at each crossing;
- Conclusions on pedestrian crossing arrangements; and
- Recommendations for pedestrian crossing layout on Dyke Road.

2. DYKE ROAD CHARACTER

2.1 Area Context

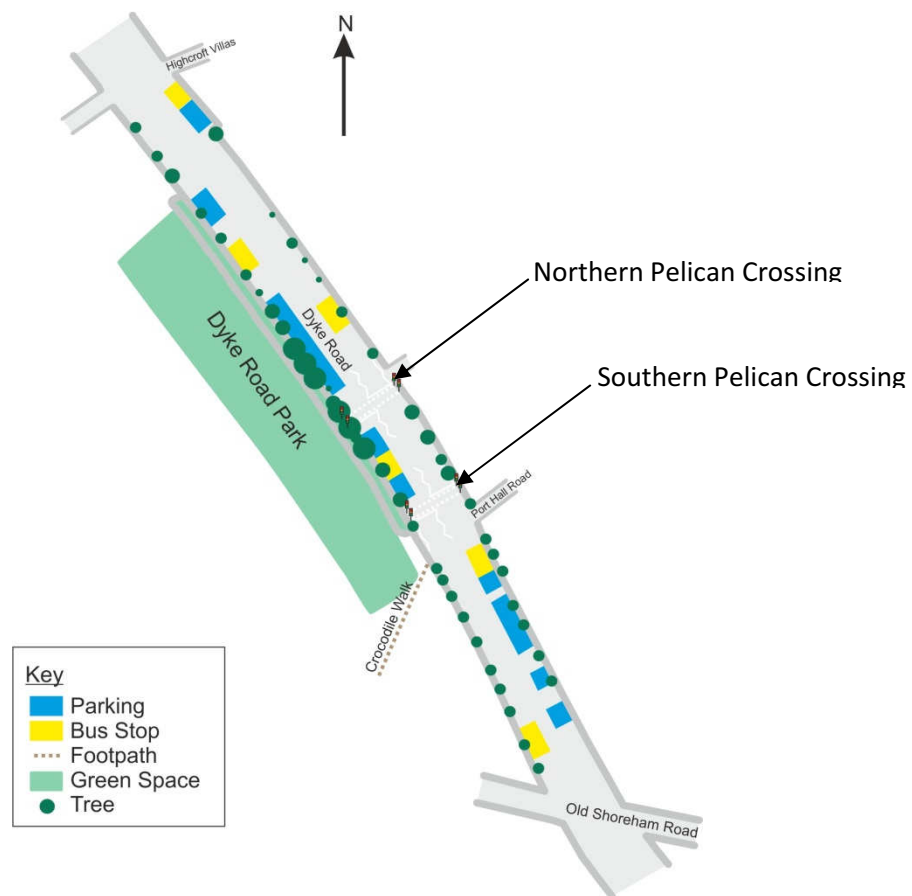
2.1.1 Dyke Road forms part of the A2010, acting as a local distributor road from the centre of Brighton north-west through the city to the South Downs National Park.

2.1.2 The road provides a mix of land use within the study area. Dyke Road Park runs along its western side for much of this stretch. South of the park Brighton Hove and Sussex Sixth Form College occupies the space between the edge of the park and the junction with Old Shoreham Road. The eastern side of the road is mostly residential, but does also include the entrance to Windlesham Primary School.

2.1.3 The road is lined with mature trees to either side, mostly sited on the footway, which is around 3m in width throughout its length. A second pedestrian footway runs along the border of Dyke Road Park, set back from the carriageway. A pedestrian footpath, Crocodile Walk, emerges on Dyke Road between the park and sixth form college which provides a link south to Old Shoreham Road.

2.1.4 **Figure 1** shows the section of Dyke Road on which this report is focussed.

Figure 1. Dyke Road Study Area



2.2 Existing Pedestrian Crossings

2.2.1 There are currently two formal pedestrian crossings within the study area. One is located adjacent to the end of Crocodile Walk, close to the junction with Port Hall Road, referred to as the southern crossing in this report. The second crossing is located directly opposite the park café, close to the entrance to Windlesham School and is referred to as the northern crossing herein.

2.2.2 Both pedestrian crossings are Pelican crossings. The southern crossing has a single long length of guardrailling extending down the western footway for around 20m south of the crossing. The northern crossing has two very short sections of guardrailling, one immediately to the south outside the entrance to Windlesham School and one just to the north adjacent to the entrance to a housing estate; both sections are on the eastern footway.

2.2.3 **Figures 2 and 3** show the northern and southern crossings respectively, looking north in each instance.

Figure 2. Northern Pedestrian Crossing



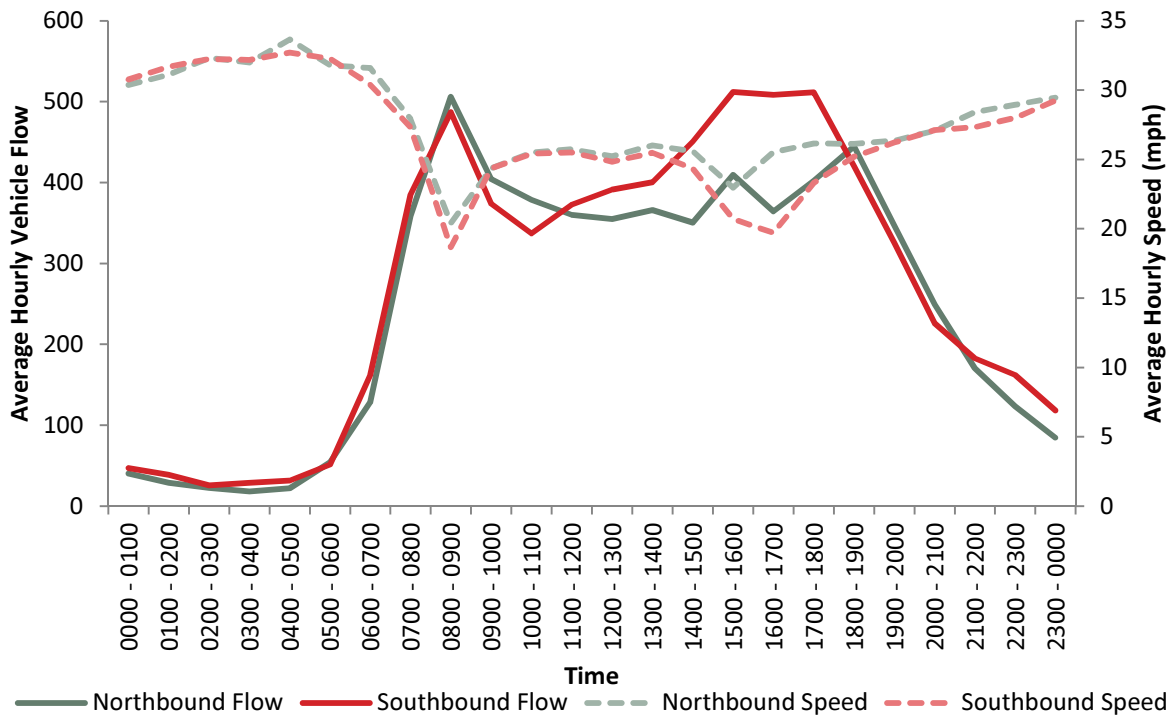
Figure 3. Southern Pedestrian Crossing



2.3 Traffic Characteristics

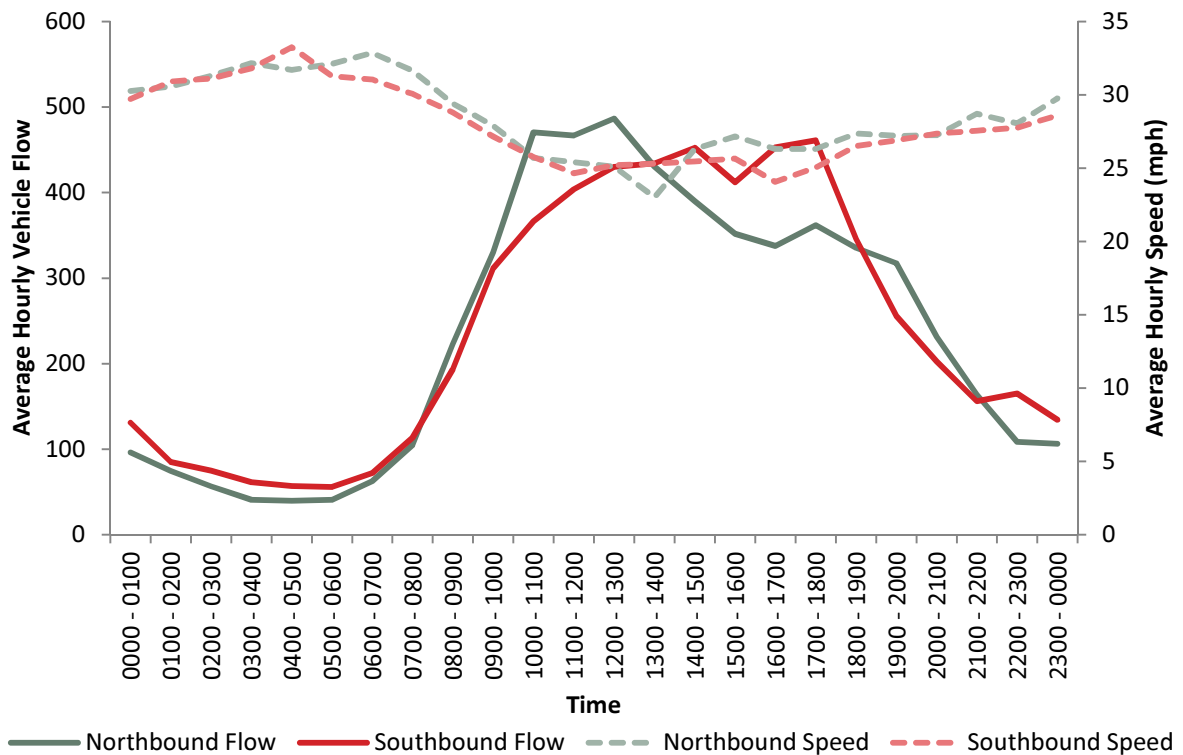
2.3.1 Dyke Road has a single lane of traffic in either direction along the length of the study area. **Figure 4** shows average weekday traffic flows and average vehicle speeds recorded by automatic traffic counts.

Figure 4. Weekday Vehicle Flows and Speeds



- 2.3.2 Average weekday hourly vehicle flows were from 350 to just over 500 in each direction during daytime hours of 07:00-20:00, and significantly lower between 20:00 – 07:00. Northbound peaks were recorded between 08:00 – 09:00 and 18:00 – 19:00, at averages of 506 and 444 vehicles per hour respectively. Southbound peaks occurred at 08:00 – 09:00 at an average of 487 vehicles per hour and an elongated PM peak between 15:00 – 18:00 averaging 510 vehicles per hour.
- 2.3.3 Vehicle speed is generally inversely proportional to flows, rising and falling according to the levels of traffic. The speed limit along this section of Dyke Road is 30mph. Northbound weekday speeds average around 25mph between 08:00 – 20:00 with exceptions during the peaks where speeds are lower; the lowest average hourly northbound speed recorded was 20.4mph during the morning peak. Speeds outside of the daytime are considerably higher. Southbound speeds between 08:00 – 20:00 fluctuate more than northbound, with the lowest daytime average speed 18.7mph and the highest 26.2mph. Again, speeds outside these hours are considerably higher.
- 2.3.4 **Figure 5** shows average weekend vehicle flows and speeds.

Figure 5. Weekend Vehicle Flows and Speeds



2.3.5 Weekend traffic showed a pattern of peaking during the middle of the day with a gradual increase across the morning and subsequent decrease in the afternoon. The northbound peak occurred between 10:00 – 14:00, with averages of over 430 vehicles per hour. The southbound peak was longer and later, with average vehicle flows above 400 vehicles per hour from 11:00 – 18:00.

2.3.6 Weekend speeds are higher across the course of the day than weekday with lowest hourly averages of 23.0mph northbound and 24.1mph southbound. Average speeds rise outside the elongated daytime peaks.

3. EXISTING CROSSING BEHAVIOUR

3.1 PV² Criteria

3.1.1 PV² is a nationally accepted impartial measure for the need for a pedestrian facility at any site, given pedestrian and vehicle flows in the area. The PV² value was calculated for both existing pedestrian crossings on Dyke Road. The two criteria used in the evaluation are:

- P = the pedestrian flow (pedestrians/hour) across a 100m length of road centred on the proposed crossing site; and
- V = the number of vehicles in both directions (vehicles/hour).

3.1.2 The PV^2 value uses the average over the four busiest hours of the day. In the case of both of the existing crossings on Dyke Road these were 08:00-10:00 and 15:00-17:00. The PV^2 value for the north crossing is:

$144 \times 890^2 = 114,062,400$

3.1.3 The PV^2 value for the south crossing is:

$172 \times 890^2 = 136,241,200$

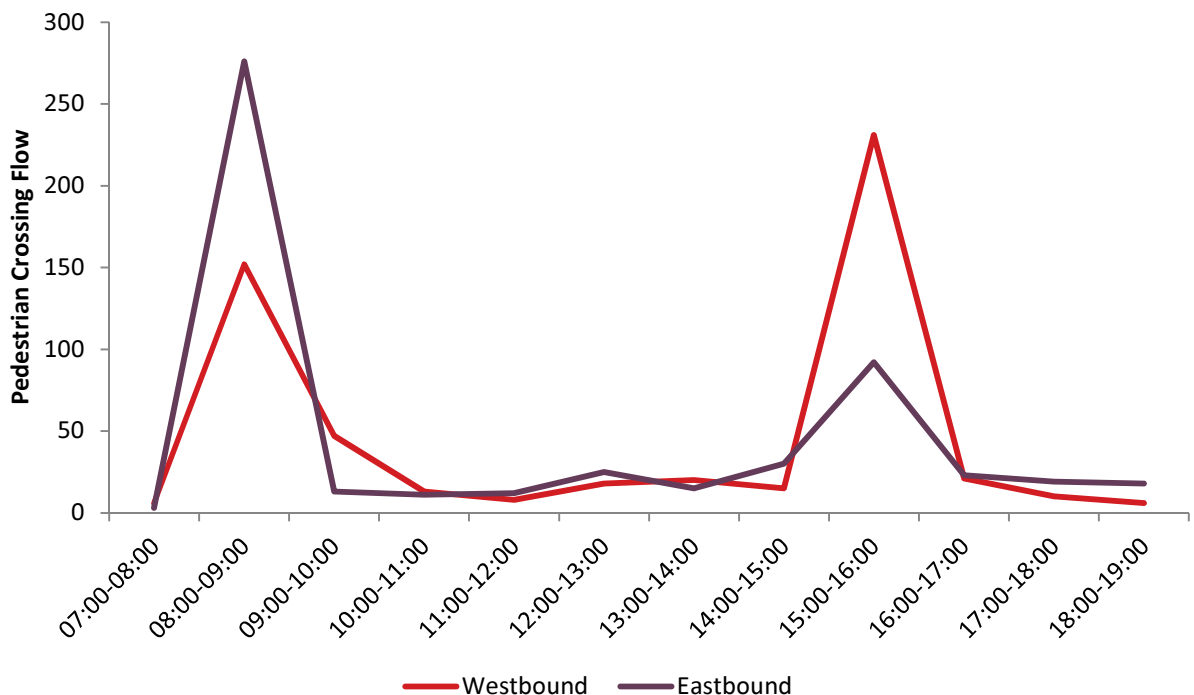
3.1.4 In both cases the PV^2 value exceeds 1×10^8 . For a continuous crossing with no break or stagger on a traffic island scores that exceed 1×10^8 are considered justification for a pedestrian crossing facility.

3.2 Pedestrian Behaviour

Crossing Flows

3.2.1 **Figure 6** shows the weekday crossing flow in each direction at the northern crossing

Figure 6. Weekday Pedestrian Crossing Flow, Northern Crossing



3.2.2 **Figure 6** reveals two very distinct peaks in pedestrian crossing flow at the crossing, between 08:00-09:00 and 15:00-16:00. These peaks correspond with Windlesham School opening and closing times, between 08:10-08:50 and 15:15-15:50 respectively. The crossing flows show a clear tidal pattern; the eastbound flow is higher in the

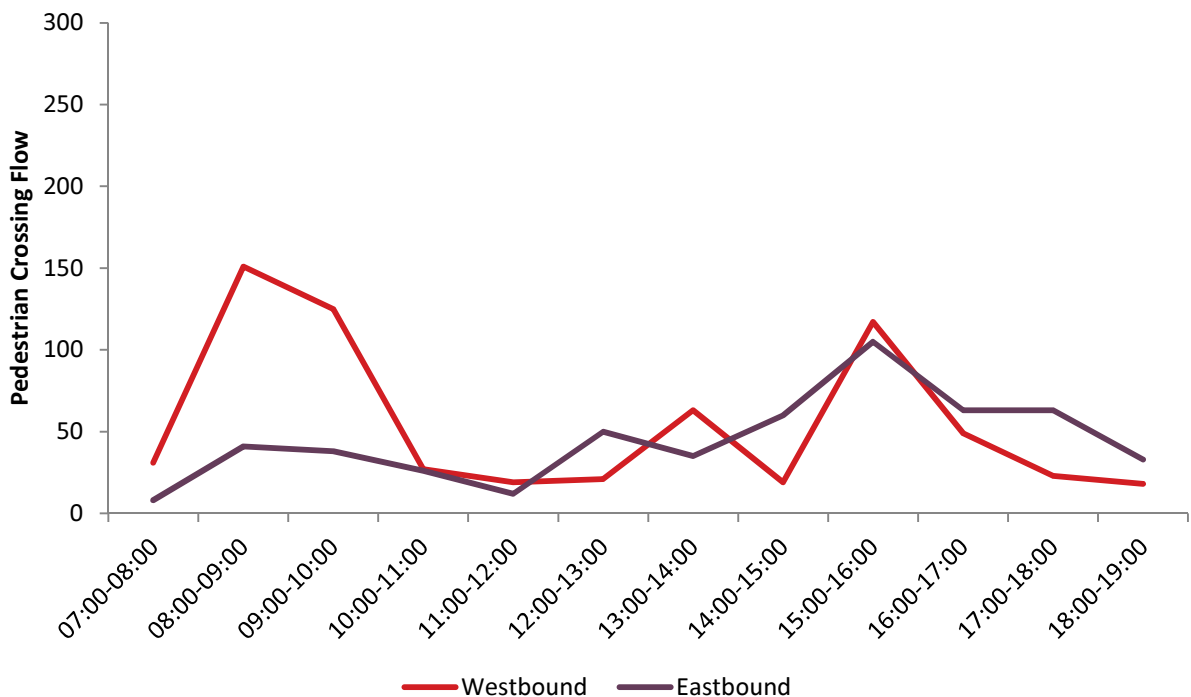
morning peak, with the westbound flow higher in the afternoon peak. This pattern of pedestrian flows reflects parents arriving with children in the morning and crossing Dyke Road before dropping the children off at school and then returning across the road. The reverse behaviour occurs in the afternoon.

3.2.3 Outside of the peaks crossing flows are low, with a two way flow of less than 50 pedestrians per hour for most of the day.

3.2.4 Weekend crossing flows at this crossing are low, peaking in the afternoon period between 15:00-16:00 when the total two-way flow was 39 pedestrians.

3.2.5 **Figure 7** displays weekday pedestrian crossing flows at the southern crossing.

Figure 7. Weekday Pedestrian Crossing Flow, Southern Crossing



3.2.6 **Figure 7** shows that total flows are very similar to the northern crossing, but with less abrupt peaks. Westbound flows peak at just over 150 pedestrians per hour in the morning between 08:00-09:00 and again at a little above 100 pedestrians per hour in the afternoon between 15:00-16:00. Eastbound flows do not have a clear morning peak, but rise steadily across the afternoon, also peaking at just over 100 pedestrians per hour. These peaks coincide with school opening and closing times, pupils crossing the road westbound to reach the sixth form college in the morning and returning eastbound in the afternoon. The higher peak in the morning could be explained by commuters travelling via Crocodile Walk, whose return journeys are more spread out in the afternoon.

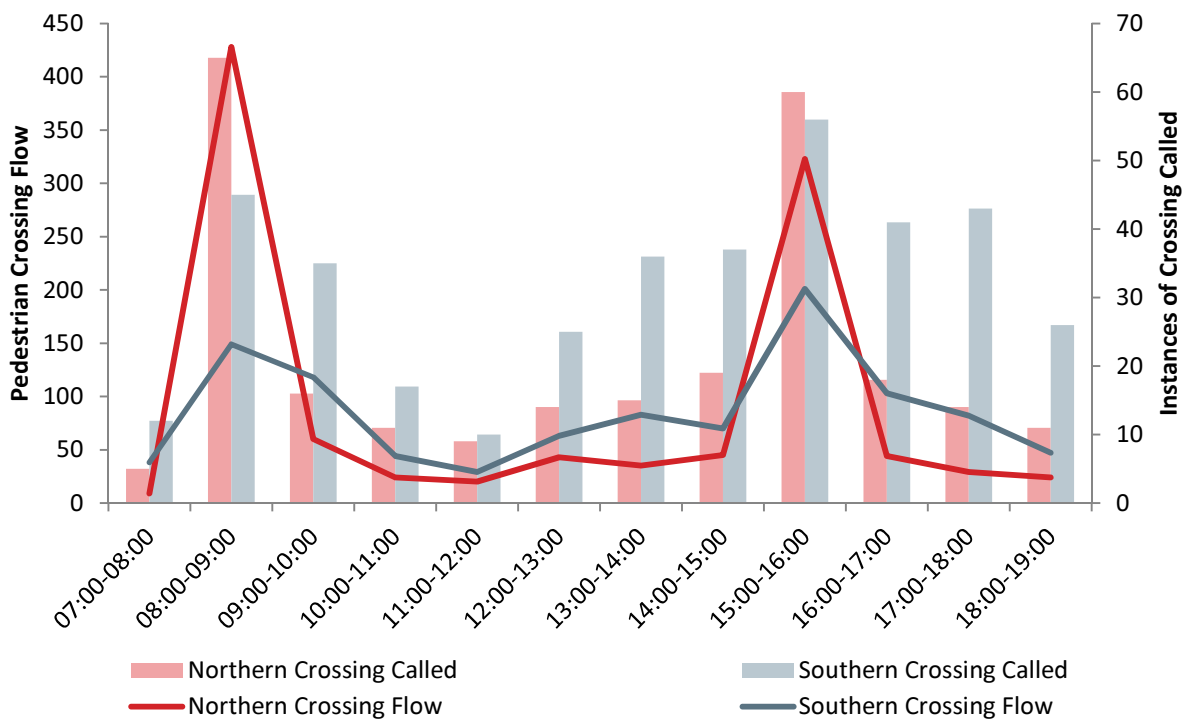
3.2.7 Outside of the peaks the two-way flow varies, but is generally around 100 pedestrians per hour.

3.2.8 Weekend crossing flows on the southern crossing are higher than those at the northern crossing, but are still low. The peak hourly two-way crossing flow is 79 pedestrians, between 12:00-13:00. There is no clear pattern across the course of the day.

Crossing Calling

3.2.9 **Figure 8** illustrates the total two-way crossing flow and the number of times the pedestrian crossing was called per hour.

Figure 8. Pedestrian Crossing Flow and Instance of Pedestrian Crossing Called



3.2.10 **Figure 8** shows that as would be expected there is a clear correlation between the flow and the number of times the crossing is called. In the two peak periods, the northern crossing was called over 60 times, that is more often than once a minute. During the busiest part of this period the crossing effectively reaches saturation, as it could not be called more frequently due to the built in break whilst the signal is green for traffic. The high volume of pedestrians means that this equates to between five or six pedestrians crossing per instance of the crossing being called. The lower peaks on the southern crossing are reflected in lower occurrences of the crossing being called during peak periods, 45 in the morning peak and 56 in the afternoon peak. This has a higher ratio of the crossing being called to total pedestrian flow though, amounting to three pedestrians for each instance of the crossing being called.

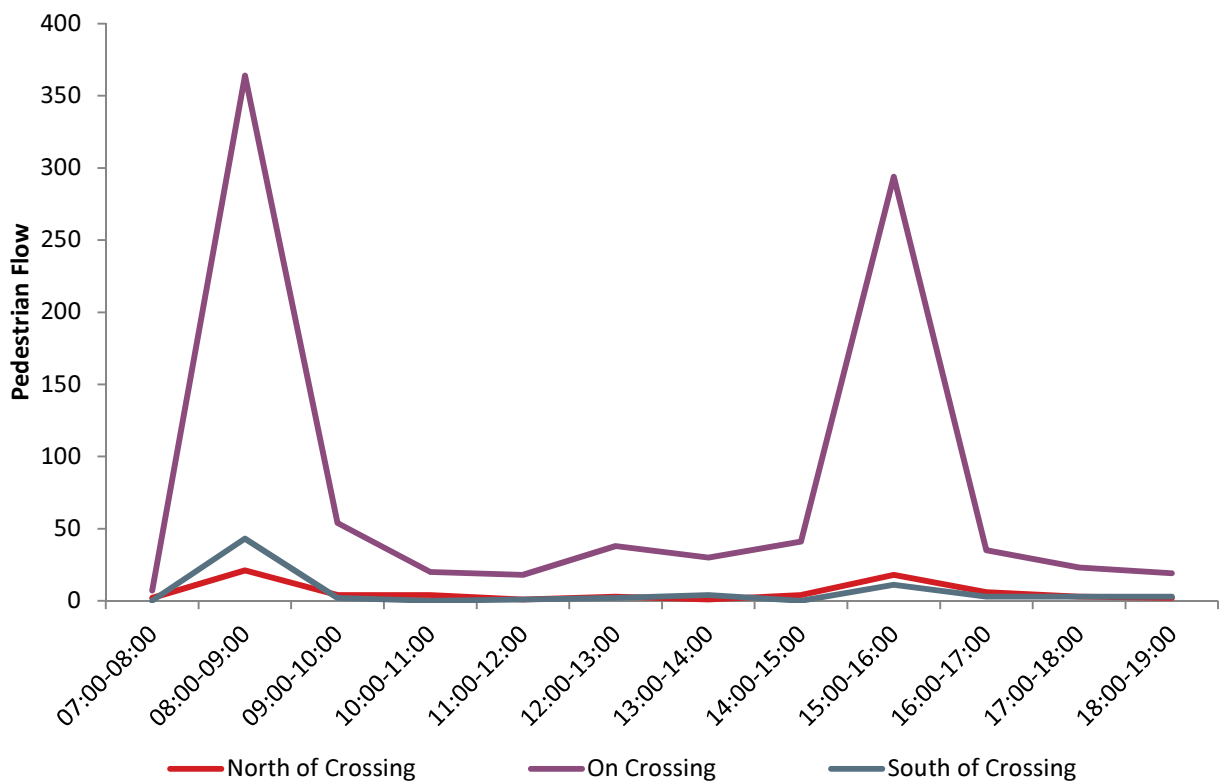
3.2.11 Outside of the peak period the northern crossing is called much less frequently, generally between 10-20 times per hour. During these periods this means around two to three pedestrians crossing the road for each time the crossing is called. The southern crossing however still experiences fairly regular use throughout the day. In the period 09:00-10:00 and for most of the afternoon the crossing is called over 35 times per hour,

averaging only two pedestrians crossing the road for each instance of the crossing being called.

Crossing Paths

3.2.12 **Figure 9** shows the numbers of pedestrians crossing directly on the northern crossing, that is between the studs, and in zones extending as far as the crossing zig-zags immediately to the north or south of the crossing.

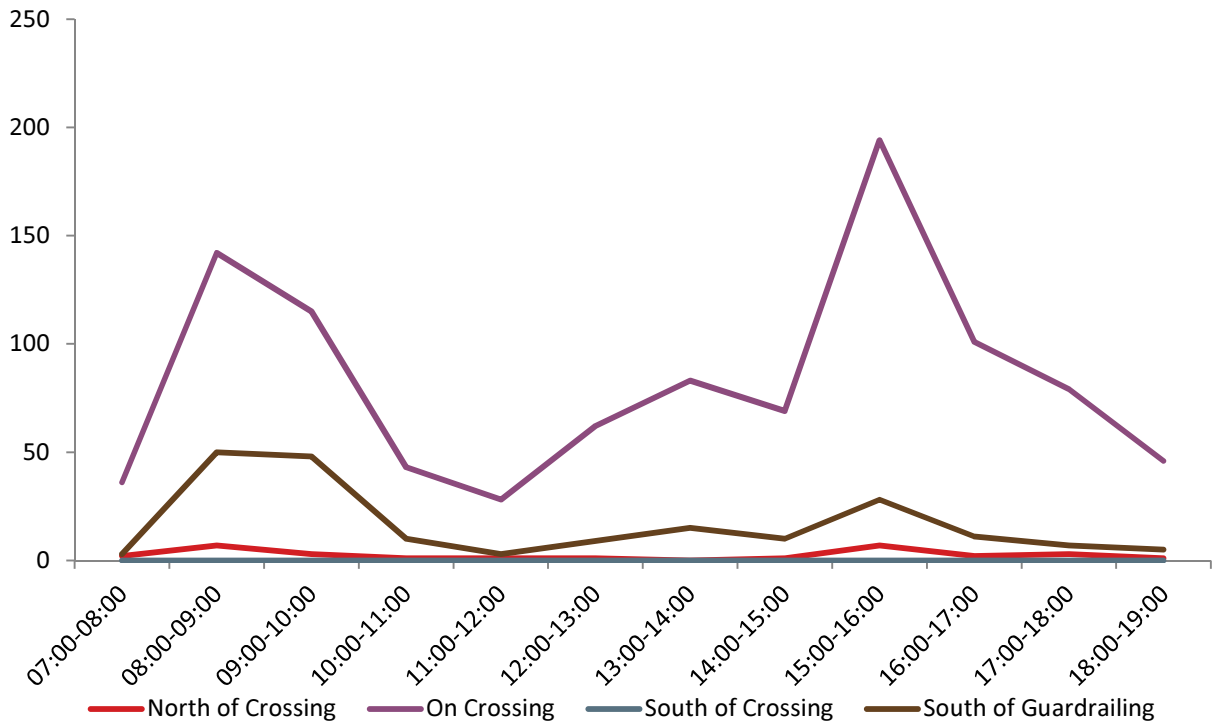
Figure 9. Pedestrian Crossing Paths, North Crossing



3.2.13 **Figure 9** illustrates that the vast majority, nearly 90%, of pedestrians are crossing directly on the crossing (between the studs), with very few crossing to either side. The numbers crossing either north or south of the crossing are similar, at around 6% of pedestrians crossing on either side.

3.2.14 **Figure 10** displays the numbers of pedestrians crossing directly on the southern crossing (between the studs), in the zone covered by the crossing zig-zags to the north, in the zone corresponding with the guardrailling to the south, and in the 25m south of the guardrailling.

Figure 10. Pedestrian Crossing Paths, South Crossing

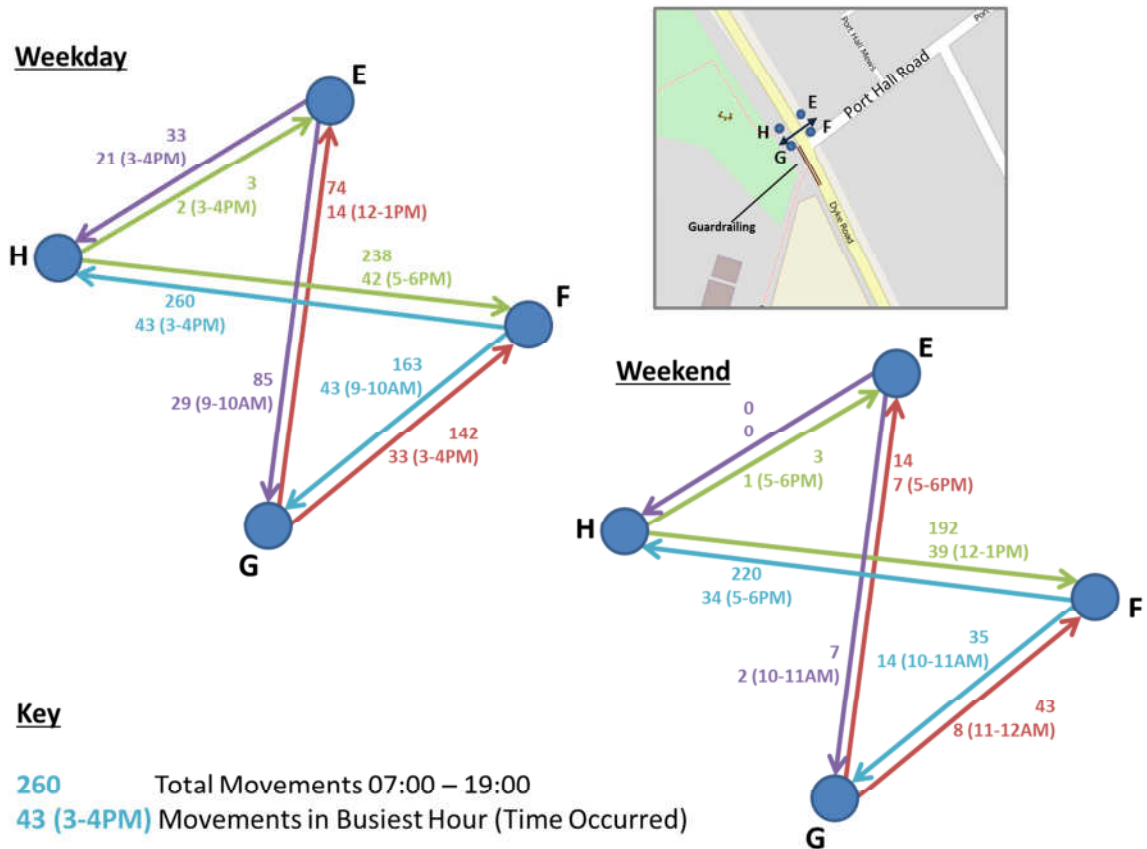


3.2.15 **Figure 10** shows that just over 80% of pedestrian crossing movements are made directly on the pedestrian crossing. No crossing takes place in the zone with guardrailing to one side, whilst very limited crossing takes place to the north of the crossing. More significant numbers cross to the south of the guardrailing, especially in the morning peak, this makes up 16% of total crossing movements at this site.

Origin/Destination of Pedestrians Crossing

3.2.16 **Figure 11** shows the origin and destination of pedestrians using the southern crossing.

Figure 11. Origin/Destinations of Pedestrians, Southern Crossing

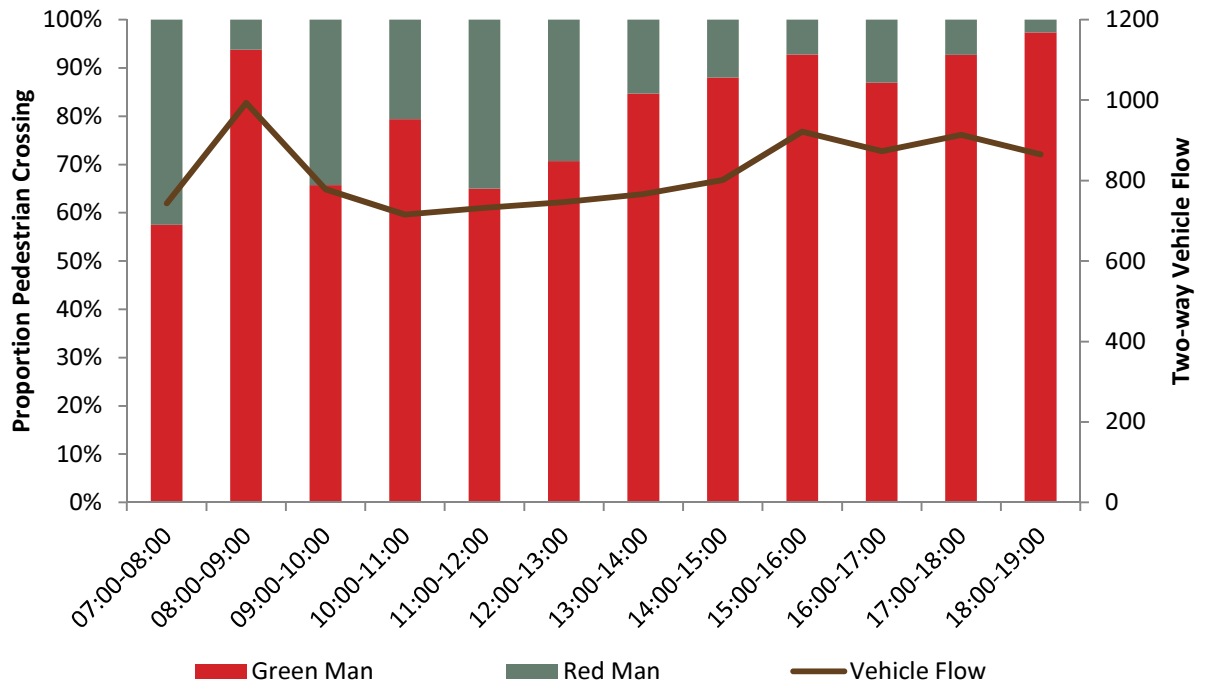


3.2.17 **Figure 11** illustrates that the majority of crossing movement are from the south-east to north-west and vice versa, this movement makes up almost exactly 50% of total movements at the crossing. The second most popular movement is south-west to south-east, at around 30% of total movements.

Use of Green Man

3.2.18 **Figure 12** shows the proportion of pedestrians crossing on either the green or red man phases across the course of the weekday on the northern crossing along with the two-way vehicle flow.

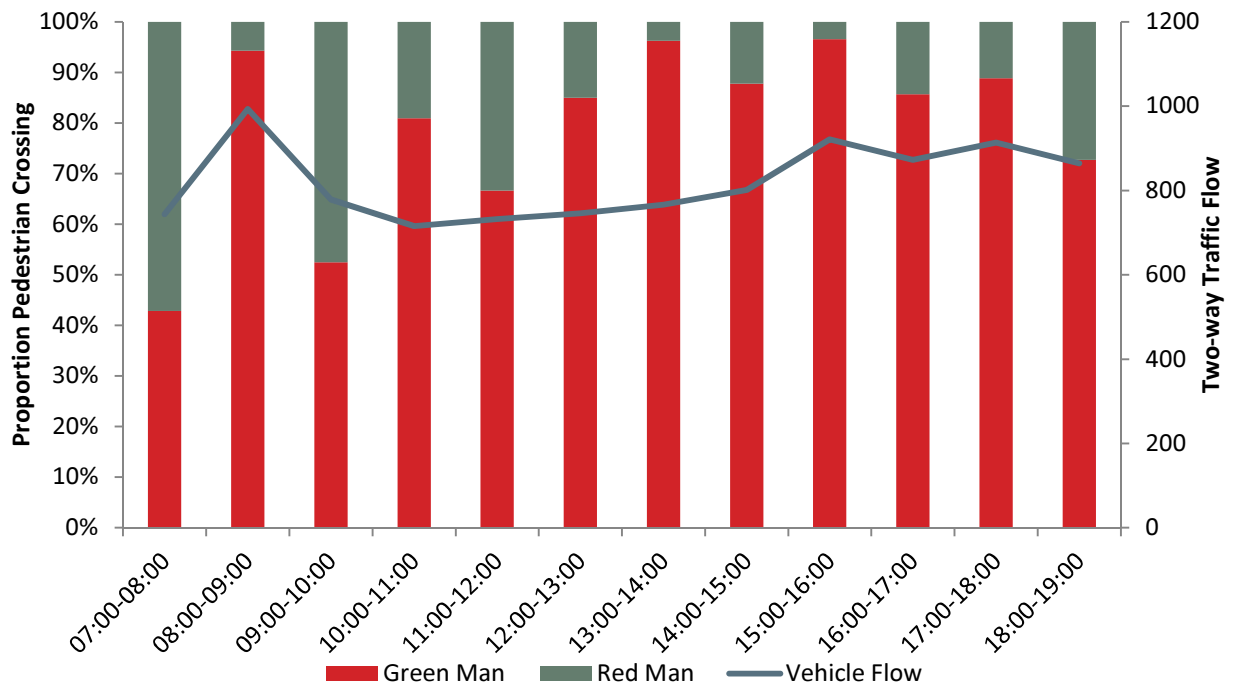
Figure 12. Pedestrians Crossing on Green Man and Traffic Flow, North Crossing



3.2.19 **Figure 12** illustrates that, with exception of the early morning time period where total numbers of pedestrians crossing was very small, the majority of pedestrians waited for the green man phase of the crossing to cross the road. Crossing on the green man correlates with overall traffic flow and this was particularly true during the two peaks when at least 94% of pedestrian crossings were made whilst the crossing had been called.

3.2.20 **Figure 13** displays the proportion of pedestrians crossing on either the green or red man phases across the course of the weekday on the southern crossing along with the two-way vehicle flow.

Figure 13. Pedestrian Crossing on Green Man and Traffic Flow, South Crossing



3.2.21 **Figure 13** shows that similar to the northern crossing, the majority of pedestrians on the southern crossing wait for the green man phase before crossing the road. As at the northern crossing the proportion crossing on the green man correlates with the vehicle flows and is particularly high during the 08:00-09:00 and 15:00-16:00 peaks.

3.2.22 These overall proportions from both crossings suggest that the volume of traffic flow is such that, in general, pedestrians do not feel comfortable crossing the road without the assistance of the pedestrian crossing, especially during the peak period for traffic.

Pedestrian Waiting Volumes

3.2.23 During the peak periods the maximum number of pedestrians recorded waiting to cross on one side of the road at either crossing was fifteen. This level occurred during the morning peak at the northern crossing. However for the vast majority of the time the number of pedestrians waiting to cross was much lower than this with only one or two pedestrians waiting to cross.

Red Light Violations

3.2.24 Over the course of the two survey days two vehicles and eight pedal cyclists passed through the crossing during a red light phase. Given this is a very small proportion of total traffic this suggests that the signals are have a high level of compliance. There was a single conflict observed where a vehicle braked late and had to alter its course slightly to avoid a pedestrian crossing during a flashing amber phase.

4. CROSSING REQUIREMENT AND LOCATION

4.1.1 This section discusses whether crossings are required and whether the current crossings are in the optimal location.

4.2 Crossing Requirement

4.2.1 The consideration of the requirement for a crossing has been informed by the following data:

- Traffic flow;
- Pedestrian flow; and
- Whether pedestrians are crossing on the red or green man phases of the existing crossings.

4.2.2 The PV² analysis suggests that pedestrian flows are high enough with regard to the volume of traffic and nature of Dyke Road that there is justification for a crossing at both locations. The low proportion of pedestrians crossing the road during the red man phases of the existing crossings or outside of the demarcated crossing areas supports the need for a formal crossing as it suggests that the road is difficult to cross without the assistance of a pedestrian crossing.

Conclusion: There is justification for a pedestrian crossing at both locations.

4.3 Crossing Location

4.3.1 The PV² analysis confirms that there is justification for both pedestrian crossings in their existing location. Although their current location can be justified it does not necessarily follow that both crossings are in the optimum location, therefore a further review of available evidence is required.

4.3.2 The optimum location for the pedestrian crossings is identified by considering:

- Pedestrian crossing flows;
- The proportions of pedestrians crossing directly on each crossing rather to either side; and
- Origin/Destination paths of pedestrians using the crossings.

Northern Crossing

4.3.3 It was shown in **Chapter 3.2** that the vast majority of pedestrians adhere to the pedestrian crossing within the studs when crossing Dyke Road at this point. This suggests that the crossing is in an appropriate location. Although it should be remembered that a section of guardrailing to the south of the crossing on the eastern footway may limit the extent to which pedestrians can cross to the south, but the impact of this on the crossing desire line is likely to be minimal.

4.3.4 The temporal distribution of pedestrians crossing the road shows two very clear peaks connected to accessing Windlesham Primary School. Given the current proximity of the

crossing to the school entrance it would not seem to be beneficial to move the crossing further from the entrance. Children coming to or from the school are likely to approach from both the north and the south as well as via Dyke Road Park, or from parents using the available parking on the west side of the road. Furthermore there is a relative gap in the trees that line the footway to either side of Dyke Road at this point. All of these factors suggest that the crossing location at present cannot be improved upon.

Southern Crossing

4.3.5 As with the northern crossing, the majority of pedestrians using the southern crossing cross the road within the marked area of the crossing and not to either side. However guardrailing to the south does hinder potential demand to cross immediately to the south of the crossing. There is some evidence that pedestrians are crossing to the south of the guardrailing, but this is only a notable proportion during the morning peak. At all other times the proportion of pedestrians crossing on the crossing suggest that the crossing is well located at present.

4.3.6 Origin/Destination observations at this crossing showed that both during the week and weekend the most common movement is from south-east to north-west and vice versa. This endorses the current location of the crossing. If the crossing were too far south or north it would be expected that south-east to south-west or north-east to north-west movements would be the most common, with pedestrians forced off their desire line to reach the crossing.

4.3.7 The proximity of the crossing both to the entrance to Crocodile Walk and the end of Port Hall Road is advantageous at present as it serves any pedestrians who emerge from either of these access points to Dyke Road who then wish to cross the road. The crossing is also close enough to the bus stops both to the north and south to assist pedestrians travelling to or from these stops without having to deviate significantly from desire lines. All of these factors suggest that the current location of the southern crossing is satisfactory at present.

Replacement with a Single Crossing

4.3.8 Given the advantages of both locations in serving desire lines and linking up with local trip attractors, there seems little benefit for pedestrians in the creation of a single larger crossing. Furthermore the distinct pedestrian peaks at either crossing mean that this single crossing would need a very high capacity to deal with highest volumes of pedestrian flow.

Conclusion: Both pedestrian crossings are in their optimum location, there is no justification for moving either or combining into a single pedestrian crossing.

5. CROSSING TYPE ANALYSIS

5.1.1 This section discusses whether the current type of crossings are appropriate. Consideration is made of whether the crossings should be signalised or Zebra crossings, and if signalised which type of signalised crossing, as well whether either or both crossings should be raised.

5.1.2 A range of different types of pedestrian crossings exist, which vary in suitability depending on context and provide differing advantages and disadvantages for both pedestrians and vehicles. The key differences for pedestrians will be the length of delay before being able to cross and the safety and perception of safety of the crossing. The length of delay created by pedestrians crossing will be the biggest factor for vehicles.

5.1.3 Key factors to consider in determining the type of crossing are;

- Vehicle and pedestrian delays at the crossing;
- Vehicle flows and speeds;
- Safety;
- The character of the area and context of the road; and
- The volume and make-up (if high proportions of elderly, children, disabled etc.) of pedestrian flow.

5.1.4 Data collected that will inform the crossing type analysis includes:

- Pedestrian flows;
- Vehicles flows and speeds;
- Use of crossing by cyclists;
- Red light violations of traffic signals by pedestrians and vehicles;
- Frequency with which existing signalised crossings are called; and
- Secondary research on the impact of crossing type on safety.

5.2 Vehicle and Pedestrian Delay

Vehicle Delays - Methodology

5.2.1 The differences in the way in which Zebra crossings and signalised crossings operate means that the extent to which they cause delays for vehicles and pedestrians will vary according to traffic and pedestrian flow. Combining the ATC vehicle flow data with the pedestrian crossing flow data and the record of the number of times the signalised crossings were called by pedestrians allows an estimate of the total delay currently caused to both vehicles and pedestrians by the signalised crossings and the potential delay caused if these crossings were replaced by Zebra crossings.

5.2.2 The current delay to vehicles caused by the signalised crossing can be established by considering the number of times the pedestrian crossing is called and the vehicle flow. From video review it can be seen that each time the pedestrian crossing is called the subsequent red light phase is ten seconds.

5.2.3 It will be assumed that vehicles are always able to move off immediately on the commencement of the flashing amber phase. The vehicle flow data can allow an estimation of how many vehicles will be delayed by a red signal. For simplicity it is assumed that vehicles are spread at even intervals, so if the vehicle flow was six vehicles per minute, these would be spread evenly every ten seconds. It is also assumed that a vehicle is only delayed if it arrives at the crossing whilst the signal is red, slowing for lights that subsequently change is not considered.

5.2.4 The method of establishing vehicle delay was applied in 15 minute periods across the day as follows:

1. The number of times the crossing was called was multiplied by 10 seconds. This provides the amount time for which vehicles were stopped within the 15 minute period.
2. The total vehicle flow in each direction for the 15 minute period was used to establish the interval between vehicles were they evenly distributed. Dividing the vehicle flow by 900, the number of seconds in 15 minutes, provides the vehicle interval.
3. The total stopping time calculated in (1) was divided by the interval in (2) to determine the number of vehicles caused to stop by the crossing in each direction.
4. Given that vehicles could arrive at any point during the red light phases, it was assumed that the average delay would be 5 seconds. Multiplying the number of vehicles affected by 5 seconds provides the total vehicle delay caused by the signalised crossing.

5.2.5 An illustration of the vehicle delay calculation for one fifteen minute period is provided below:

Instances Crossing Called x 10 = Total Time of Red Light Phase: **14 x 10 = 140 sec**

Northbound Vehicle Flow ÷ 900 = Northbound Vehicle Interval: **122 ÷ 900 = 7.4 sec**

Southbound Vehicle Flow ÷ 900 = Southbound Vehicle Interval **102 ÷ 900 = 8.8 sec**

Total Time of Red Light Phase ÷ Vehicle Interval = Number of Vehicles Delayed:

Northbound: **140 ÷ 7.4 = 19.0 vehs** Southbound: **140 ÷ 8.8 = 15.8 vehs**

Number of Vehicles Delayed x 5 = Total Vehicle Delay: **(19.0 + 15.8) x 5 = 173.8 sec**

5.2.6 To estimate the likely vehicle delays caused by a Zebra crossing, the ATC vehicle flow and the pedestrian crossing flows can be used using a similar method to that for the signalised crossings. For a Zebra crossing there is no fixed length of delay, however video observations suggest that it takes 6 seconds on average for a pedestrian to cross Dyke Road. Therefore each crossing of the road will cause 6 seconds of delay to vehicles. However some pedestrians will cross in groups and pedestrians from opposite sides of Dyke Road may cross at the same time. Without precise data to quantify these movements it has been assumed that only 75% of pedestrians crossing will be a unique crossing and therefore cause a delay. Closer inspection of the crossing data reveals that there are fifteen minute periods where almost every pedestrian crossing caused the existing signalised crossing to be called, suggesting these were all unique crossing movements. Therefore if the 75% figure amounts to less than the number of times the existing signalised crossing was called in a fifteen minute period then all pedestrian crossings have been treated as unique crossing movements. Once the total delay is established, the same method can be followed as for the signalised crossings.

5.2.7 Therefore the method for establishing the vehicle delay for a Zebra crossing is as follows:

1. The number of pedestrian crossing movements was multiplied by 75%. This was compared to the number of times the signalised crossing was called, if the latter was higher then the total number of pedestrian crossing movements was used, otherwise the 75% figure was carried forward.
2. The pedestrian crossing number from (1) was multiplied by 6 to provide the total amount of time vehicles will be stopped.
3. The total vehicle flow in each direction for the 15 minute period was used to establish the interval between vehicles were they evenly distributed.
4. The total stopping time calculated in (2) was divided by the interval in (3) to determine the number of vehicles caused to stop by the crossing in each direction.
5. Given the vehicles could arrive at any point during a pedestrian crossing, it was assumed that the average delay would be 3 seconds. Multiplying the number of vehicles affected by 3 seconds provides the total vehicle delay caused by the signalised crossing.

5.2.8 An illustration of the vehicle delay calculation for a Zebra crossing for the same fifteen minute period used above is illustrated below:

Number of pedestrians crossing x 75%: **72 x 75% = 54**

Comparison of 75% figure against instances of signalised crossing being called: **54 > 14**

75% of Pedestrians Crossing x 6: **54 x 6 = 324**

Northbound Vehicle Flow ÷ 900 = Northbound Vehicle Interval: **122 ÷ 900 = 7.4 sec**

Southbound Vehicle Flow ÷ 900 = Southbound Vehicle Interval **102 ÷ 900 = 8.8 sec**

Total Time of Crossing Delay ÷ Vehicle Interval = Number of Vehicles Delayed:

Northbound: **324 ÷ 7.4 = 43.8 vehs** Southbound: **324 ÷ 8.8 = 36.6 vehs**

Number of Vehicles Delayed x 3 = Total Vehicle Delay: **(43.8 + 36.6) x 3 = 241.3 sec**

5.2.9 In this example it can be seen that the total vehicle delay would be much higher for a Zebra crossing than a signalised crossing. This is due to a high volume of pedestrians causing a large amount of delay, whereas when pedestrian numbers are lower the balance would tip more in favour of the Zebra crossing. It should be noted that the delay caused by pedestrians reaches a saturation point on a signalised crossing where the crossing cannot be called any more frequently, whereas the delay on a Zebra crossing could theoretically continue to increase until there was no vehicle flow at all.

Pedestrian Delays - Methodology

5.2.10 The total pedestrian delays for each type of crossing can be established by considering the total number of pedestrian crossing movements and the average length of delay each pedestrian is likely to face.

5.2.11 Given a Zebra crossing allows pedestrians to cross almost immediately on arrival, it has conservatively been estimated that the average pedestrian waits for two seconds to be able to cross the road. Multiplying the total number of pedestrians crossing by two gives the total pedestrian delay in seconds.

5.2.12 For the signalised crossing the delay is more difficult to establish given the wait for a green man after calling the crossing can vary significantly. The average wait has therefore been taken as 5 seconds. Pedestrians who arrive during the green man phase will also benefit from no wait at all; the proportion of pedestrians for whom this applies is difficult to quantify, but it is unlikely to be greater than 20%. Therefore each pedestrian crossing movement is multiplied by 5 to get a total delay, but only 80% of this figure is used to accommodate those pedestrians who benefit from arriving during the green man phase.

Assumption Limitations

5.2.13 Whilst considering the delay analysis the following limitations born out of the assumptions made should be kept in mind:

- Treating all traffic as at equal intervals ignores any bunching effect that may occur, which could in turn exacerbate queues and increase delays. This is likely to be more true during the longer delay caused by a signalised crossing;
- Basing vehicle delays on the interval between vehicles assumes that there will be gaps in between pedestrians using a Zebra crossing through which unaffected vehicles may pass, but a constant flow of pedestrians may prevent this and hence a greater build-up of traffic and subsequent delay may occur;
- Vehicle delays on a signalised crossing may be longer than ten seconds as vehicles will have to remain stationary if pedestrians continue to cross during the flashing amber phases;
- Vehicle delays on a Zebra crossing may be shorter than 6 seconds as many pedestrians will cross in less than this time and vehicles will often pass over the crossing before pedestrians have completed crossing the road entirely; and
- Pedestrian delays on a Zebra crossing may average less than two seconds as this does not consider the case where pedestrians do not have to wait at all as a lack of traffic or already slowing traffic allows instantaneous crossing.

5.2.14 Despite the limitations this method can be considered reasonably robust given the data available and many of the assumptions are likely to balance out overall or have limited total impact on the results.

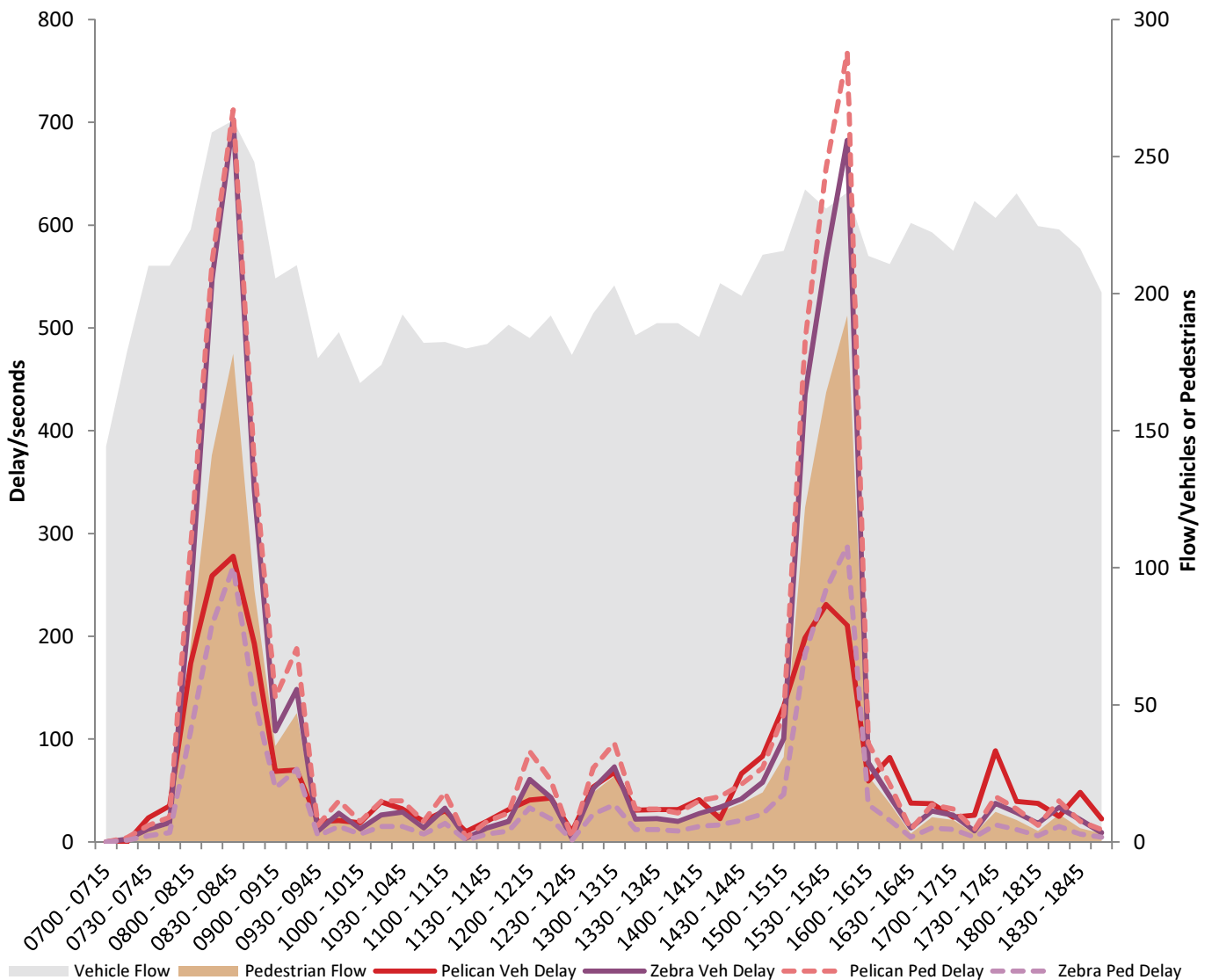
Crossing Delay Comparison by Location

5.2.15 The total vehicle and pedestrian delays for each type of crossing at each location is shown in **Table 1**. How this works out over the course of the day is shown in **Figures 10 and 11**.

Table 1. Crossing Delay Comparison

LOCATION	CROSSING TYPE	PEDESTRIAN DELAY	VEHICLE DELAY	TOTAL DELAY TO ROAD USERS
North Crossing	Signalised	1hr 34mins	52mins	2hrs 26mins
	Zebra	35mins	1hr 22mins	1hr 57mins
Difference in Delay:		-59mins	+30mins	-29mins
South Crossing	Signalised	1hr 7mins	1hr 15mins	2hrs 22mins
	Zebra	33mins	54mins	1hr 27mins
Difference in Delay:		-34mins	-21mins	-55mins

Figure 14. Pedestrian and Vehicle Delays and Flows, North Crossing

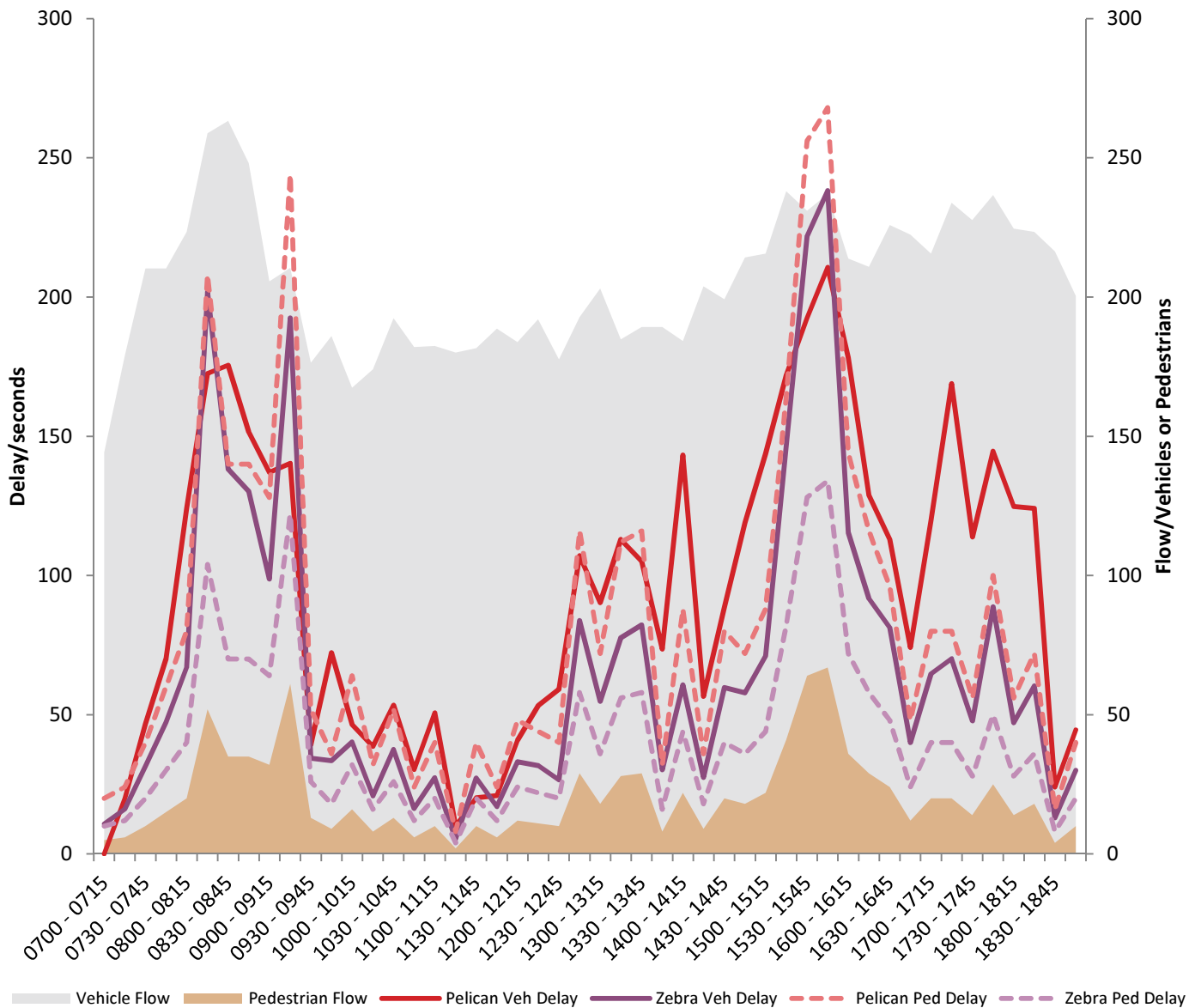


Dyke Road Cycle and Pedestrian Improvements

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Figure 15. Pedestrian and Vehicle Delays and Flows, South Crossing



Pedestrian and Vehicle Delay Summary - North Crossing

5.2.16 The analysis shows that in terms of both vehicle and pedestrian delay that over the course of the whole day less delay will be experienced if a Zebra crossing is in place rather than a signalised crossing.

5.2.17 However during the two peaks, a Zebra crossing will cause a greater level of vehicle delay than a signalised crossing. Conversely though, pedestrians will benefit most from a Zebra crossing in terms of reduced delay at this point since when a signalised crossing is being constantly called there is a limit to how short a red light phase can be, but a Zebra crossing permits an almost continuous flow of pedestrians.

- 5.2.18 Outside of the peaks a Zebra crossing would cause less delay for both pedestrians and vehicles at almost all points.
- 5.2.19 In terms of delay this would suggest that a Zebra crossing would be the better option rather than a signalised crossing at this location. However by assuming that vehicles will always be spread at even intervals and that pedestrians will simply cause delay evenly spread across any given time frame does not take into account the nuances of behaviour at the crossing. In the peak periods where the pedestrian flow averages at level of a pedestrian crossing the road more often than every six seconds, there is a risk that a continuous flow will cause a lengthy delay to vehicles which are unable to progress due to pedestrians being on the Zebra crossing.

Pedestrian and Vehicle Delay Summary - South Crossing

- 5.2.20 The analysis shows that in terms of both vehicle and pedestrian delay that over the course of the whole day less delay will be experienced if a Zebra crossing is in place rather than a signalised crossing.
- 5.2.21 Pedestrians will benefit from a reduced delay across the course of the day, and there are only brief periods during each peak where the frequency of pedestrians crossing will mean delays caused by a Zebra crossing would exceed those caused by a signalised crossing.
- 5.2.22 The frequency with which the existing crossing is called by pedestrians outside of the peak, but only a single pedestrian crosses the road means the delay caused to vehicles is higher than might be expected across the course of the day for a signalised crossing. It is during these periods that a Zebra crossing would be particularly beneficial in terms of delay.
- 5.2.23 During the morning peak there are lengthy time periods where the queue from the Old Shoreham Road junction to the south backs up through the existing crossing. Given the slow moving nature of traffic during these periods a Zebra crossing is likely to work well and the suggested increased delay to vehicles caused by a Zebra crossing is of less importance given there is limited opportunity to progress once beyond the crossing.
- 5.2.24 Therefore this would suggest that in terms of delay a Zebra crossing would be more efficient for all road users at this site as opposed to a signalised crossing.

Cyclist Delay

- 5.2.25 Cyclists will always benefit in terms of a shorter delay in encountering a Zebra crossing rather than a signalised crossing. A Zebra crossing gives cyclists more potential to alter their speed on approach to let pedestrians cross but not have to stop themselves, whilst not causing any conflict with crossing pedestrians.

5.3 Demand for Facilitating Cycle Crossing Movements

5.3.1 The crossing data reveals that the number of cyclists using the existing crossings, either by riding across or pushing a bike is low. A total of 15 cyclists were recorded using the southern crossing on the weekday, and less at the weekend and the northern crossing. This does not suggest a significant demand for a Toucan crossing. Furthermore converting the southern crossing to a Toucan crossing would not hugely benefit cyclists turning right in or out of Port Hall Road as they would still have to dismount to traverse the northern footway with the current proposal if they wished to use the pedestrian crossing rather than cross the opposing traffic flow. Therefore it would seem that the existing Pelican crossing is the most suitable type of signalised crossing for the two locations. In the absence of a Toucan crossing, given the need to dismount to use a Pelican crossing, a Zebra crossing would be preferable for cyclists crossing given the shorter delay.

5.4 Requirement for Raised Crossings

5.4.1 Raised crossings provide a benefit by clearly defining an area that vehicles should not assume precedence due to the likely presence of pedestrians. They aid in calming traffic speeds and encouraging drivers to give way to pedestrians. Raised crossings would be beneficial at both locations were they to be converted to Zebra crossings given this impact on driver behaviour and they would help alleviate any concerns about vehicle speed in relation to the operation of the Zebra crossings, although this has not been proved to be a significant issue.

5.4.2 The benefit of a raised crossing may be less if combined with a signalised crossing since the traffic signals assert the precedence of pedestrians.. However a raised crossing at the southern crossing would also encompass a raised junction table and this would serve the dual purpose of calming traffic in proximity to the junction and indicating that this was the start of this character area of Dyke Road in which the park and primary school mean an increased pedestrian presence. Any improvement in driver behaviour as a result of a raised crossing at the southern crossing will also benefit cyclists turning in and out of Port Hall Road, further reducing the justification for a Toucan crossing at this location. Raising the northern crossing would be of benefit mainly for the purpose of consistency, whilst still providing some of the traffic calming benefits described above.

5.5 Road Safety

5.5.1 ‘LTN 1/95: The Assessment of Pedestrian Crossings’ suggests that “Zebra crossings should not be installed on roads with an 85 percentile speed of 35mph or above”. 85th percentile speeds are less than 30mph throughout the week and peak at 30.9mph on Sunday. For the majority of the daytime they are comfortably less than 30mph. From this evidence of vehicle speeds a Zebra crossing should not be considered unsafe for Dyke Road.

- 5.5.2 The same note states that *“there is little difference in the average rate of personal injury accidents at Zebra and signal-controlled types”*. This would suggest that neither a Zebra nor signalised crossing should necessarily be considered the safer type of crossing. Emerging analysis performed by BHCC across the city suggests no major difference in safety when considering the number of accidents that occur at either signalised or Zebra crossings, with a slightly lower accident rate at Zebra crossings. Location specific characteristics will play a more important role in the safety of any given crossing.
- 5.5.3 Some of the key factors that influence safety and perception of safety at a signalised crossing are:
- Defined ‘safe to cross’ period for pedestrians;
 - Signals remove need for pedestrians to assert precedence, which may be especially beneficial for elderly, disabled or children;
 - Traffic signals provide clear warning to stop for vehicles that is visible from distance;
 - Reduced responsibility for vehicles may lead to drivers approaching with greater speed or less care than at a Zebra crossing; and
 - Delay in waiting for green man phase may cause impatient pedestrians to cross through flow of traffic.
- 5.5.4 Some of the key factors that influence safety and the perception of safety at a Zebra crossings are:
- Road markings and beacons makes presence of crossing clear;
 - Pedestrian priority clearly established;
 - Vehicles likely to take greater care on approach due to uncertainty of likelihood of pedestrians crossing;
 - No defined ‘safe to cross’ period can lead to hesitancy or feeling of vulnerability for pedestrians; and
 - In fast traffic with limited gaps between vehicles it can be difficult for pedestrians to assert precedence.
- 5.5.5 Pedestrians require a sufficient gap in traffic to assert precedence at a Zebra crossing. This will not occur if traffic volumes or speeds are too high. Given that traffic speeds on Dyke Road are generally low, and as traffic flows increase average speeds drop, pedestrians will be likely to be able to assert precedence safely at all times if a Zebra crossing were installed.
- 5.5.6 The high numbers of children using both crossings, the northern one in particular, puts some weight on the benefit of a signalised crossing due to the defined ‘safe to cross’ period that is easily understood. It may be the case that children find it harder to assert to precedence in crossing due to their lack of height making them less visible to vehicles, although there no clear evidence to back up this assertion.
- 5.5.7 The limited numbers of pedestrians crossing outside the crossing or during the red man phase suggests that the impatience of pedestrians crossing on the current crossing arrangement is not a huge issue.

- 5.5.8 Visibility at the northern crossing is good due to a break in the trees at this point, however pedestrians do congregate outside Windlesham School entrance at school opening and closing times. This may slightly reduce driver visibility of pedestrians, but given the school is slightly to the south of the crossing and the obstruction is to northbound traffic, pedestrians should become visible as or before they step into the road, giving northbound traffic plenty of time to react. There is a potential issue at the southern crossing due to the tree located on the eastern footway immediately to the north of the crossing may limit the visibility of approaching pedestrians on this side to southbound vehicles. This may be more a concern at a Zebra crossing, but the distance of the tree from the crossing means that pedestrians waiting to cross will be visible to oncoming vehicles in sufficient time to react before reaching the crossing. The proposed cycle lane moving traffic a minimum of 1.5m from the kerb will also enhance driver visibility of pedestrians.
- 5.5.9 Both crossings in their current state seem to be well observed by vehicle users and the record of vehicles not obeying the signals does not give an strong argument either way for which type of crossing would be more suitable.
- 5.5.10 Accident data shows that there has been one slight collision in the vicinity of each crossing in the last three year. This does not suggest a significant safety concern at either location.
- 5.5.11 Overall there are no over-riding safety reasons to determine whether a Zebra or signalised crossing would be more suitable for each location. Although there are slight concerns regarding visibility at each crossing, there is no strong evidence that this is sufficient to rule out either Zebra or signalised crossings.

Conclusions:

Both pedestrians and vehicles will experience less delays overall if both signalised crossing were replaced with Zebra crossings. There would be brief peak periods where vehicle delays would be increased by Zebra crossings.

There is little justification for facilitating cycle crossing at either location with signals.

There would be some benefit to raising both crossings, this benefit would be greater at the southern crossing.

There is no definitive safety argument in favour of either a Zebra or signalised crossing at each location, both crossing types would be sufficiently safe.

6. GUARDRAILING NECESSITY

- 6.1.1 This section considers whether there is a need for the guardrailing currently in place at the two crossings or whether it could be safely removed.

6.1.2 The key knowledge required in this discussion is:

- Whether pedestrians are crossing directly on the existing crossings or to either side;
- The origins and destinations of pedestrians using the crossings;
- Secondary research on the impact of guardrailing; and
- An understanding of the character of the area.

6.2 Background

6.2.1 ‘LTN 2/09: Pedestrian Guardrailing’ suggests that guardrailing’s primary purpose is to prevent pedestrians crossing at points that are considered unsafe. This would appear to be the motivation behind the guardrailing at both crossings on Dyke Road. At the northern crossing the guardrailing corresponds with the Windlesham School entrance and a presumed fear of children rushing straight from the school into the road. At the southern crossing the danger is related to the proximity of the crossing to the junction with Port Hall Road.

6.2.2 In both cases the guardrailing is unsightly and out of keeping with the attractive character, created by the tree lined footways and Dyke Road Park, of this section of Dyke Road. Furthermore it reduces the feeling of comfort for cyclists, as they are constrained between the guardrailing and flowing traffic. This means the existence of the guardrailing does not sit well with the proposed introduction of cycle lanes.

6.3 Analysis of Existing Guardrailing

Northern Crossing

6.3.1 The specific advantages of the guardrailing on the northern crossing are:

- Prevents children from Windlesham School going straight from the school entrance into the road;
- Ensures that parents congregating outside the school entrance do not spill over into the road; and
- Discourages pedestrians attempting to cross late in the green man phase, not within the crossing studs who may therefore be less visible to vehicles.

6.3.2 The specific disadvantages of the guardrailing on the northern crossing are:

- It reduces the effective width of the footway, a problem which is exacerbated by parents congregating outside the primary school entrance;
- Pedestrians attempting to avoid the congestion outside the school may walk round the outside of the guardrailing trapping themselves between the guardrailing and the traffic;
- Even where there is only a very small section of guardrailing to the north of the crossing, only 6% of pedestrians crossed in this area over the course of the weekday suggesting that pedestrians generally obey the crossing area whether guardrailing exists or not; and
- Guardrailing potentially obscures drivers’ sight of pedestrians, particularly children, which is especially relevant given the location of the school.

6.3.3 There is no clear need for the short section of guardrailing to the north of the crossing and this could safely be removed. Given the short nature of the section of guardrailing in front of the school it does not seem essential, whether the crossing is Zebra or signalised. This is based upon the various disadvantages listed above and the fact that most crossing takes place within the crossing studs. The argument would be stronger for removing it in conjunction with a Zebra crossing since the visibility of pedestrians to vehicles is more important and a Zebra crossing is less likely to encourage pedestrians to rush into the road given they will experience minimal delay using the crossing.

Southern Crossing

6.3.4 The lengthier section of guardrailing at the southern crossing means that no pedestrian crossing was recorded immediately south of the crossing at any point. However pedestrians do cross south of the guardrailing, which suggests that the guardrailing is effective in preventing pedestrians following their direct desire line at this point.

6.3.5 The advantages of the guardrailing at the southern crossing are limited to preventing pedestrians crossing to the south of the crossing, where the potential for conflict with traffic is greater due to the junction with Port Hall Road.

6.3.6 Some disadvantages of the guardrailing are:

- To the north of the crossing there is no guardrailing, yet less than 3% of pedestrians crossed the road at this point, suggesting that even in the absence of guardrailing pedestrians will mostly choose to cross within the studs;
- The guardrailing reduces the effective width of footway, from its maximum width of 3m and in combination with the fencing that borders the inside of the footway may mean pedestrians feel enclosed between the two sides.
- Cyclists are trapped between the guardrailing and traffic, a feeling which may be enhanced if they choose to remain within the new cycle lane.

6.3.7 Given the vast majority of the guardrailing coincides with the entrance to Port Hall Road for much of its length pedestrians will be unlikely to cross in any case since they will not start or finish crossing in Port Hall Road itself. For pedestrians going to or from the northern footway of Port Hall Road wishing to cross Dyke Road, the crossing offers a small enough deviation from their desire line that they are likely to continue to use it irrespective of guardrailing. For pedestrians going to or from the southern footway of Port Hall Road the guardrailling does not at present deflect them far from their desire line, therefore it is probably having little impact on their crossing; if they wish to do so without using the formal crossing they will continue to do so and if they use the crossing they will continue to do so whether the guardrailing is there or not.

6.3.8 The combination of these factors suggests that the guardrailing is not offering significant benefits and could therefore be removed. The argument for this is particularly strong were the crossing to be converted to a Zebra crossing given pedestrians maybe more likely to deviate off their desire line to use a Zebra crossing given that there will be little or no delay before they can cross the road.

Conclusion: It would be beneficial to remove all of the guardrail at both crossings.

7. SUMMARY AND CONCLUSIONS

7.1.1 Based on our analysis of the data our conclusions for crossing provision on this section of Dyke Road would be that:

- **Need for Crossing**
 - Current demand provides justification for two crossings within the study area;
- **Crossing Location**
 - The current crossing locations cannot be improved upon as they suit existing pedestrian desire lines and fit with local trip attractors;
- **Crossing Type**

Delay

- Pedestrians, vehicles and pedal cyclists would all benefit overall in terms of reduced delays if the two Pelican crossings were replaced with Zebra crossings;
- There would be a concern about the delay caused to traffic during the peak periods at the northern crossing if this were converted to a Zebra crossing, however the period for which this is a concern is very limited, coinciding only with school opening and closing periods;

Safety

- Given the traffic speed and flows on Dyke Road, both Zebra and Pelican crossings could be considered safe options and there is no overwhelming evidence that one type of crossing is safer than another;
- There are limited concerns about visibility that are more likely to affect a Zebra crossing, but these are not significant enough to rule one out at either location;

Provision for Cyclists

- There is not sufficient evidence of a cyclist desire line to suggest the introduction of a Toucan crossing at either location;

Raised crossings

- Would be particularly beneficial for the operation of Zebra crossings as well as contributing to the character of the road, the benefit for signalised

crossings would be less, but given that at the southern crossing any raised crossing could extend to a junction treatment of Port Hall Road, would still be beneficial;

- **Need for Guardrailing**
 - The guardrailing is unsightly, reduces the effective footway width, and provides limited safety benefit as it could be expected that the majority of pedestrians will continue to cross directly on the formal crossing, therefore it could be removed at all sites.

8. RECOMMENDATIONS

8.1 Preferred Option

8.1.1 Based on the conclusions drawn above the preferred option for pedestrian crossings on Dyke Road would be:

- The location of both crossings to be kept the same;
- Both Pelican crossings to be replaced with Zebra crossings;
- The Zebra crossings to be raised at both sites; and
- All guardrailing to be removed.

8.1.2 This option would offer an overall improvement in the level of delay experienced by traffic and especially pedestrians at both sites. Zebra crossings with no guardrailing would be more in keeping with the overall character of the area and the raised tables would help calm traffic as well as alerting drivers to the character of this section of Dyke Road. The possible disadvantages would be increased vehicle delay when pedestrian flows are highest and a perception that a Zebra crossing is less safe, given its lack of defined 'safe to cross' period that maybe of concern to Windlesham School in particular.

8.2 Secondary Option

8.2.1 A second option for the pedestrian crossings on Dyke Road would be:

- To keep the locations of both crossings the same;
- To replace the southern crossing with a Zebra crossing, but keep the northern crossing as a Pelican crossing;
- To raise both crossings; and
- To remove all guardrailing bar the piece immediately outside the entrance to Windlesham school.

8.2.2 This option would offer some of the improvements of the preferred option, whilst allaying some of the concerns regarding the increased peak time delay to traffic. Keeping one section of guardrailing outside Windlesham School would continue to prevent the fear of children running straight into the road from the school, whilst its short nature means its negative impact is limited. This section of guardrailing could alternatively be located inside the school grounds. However the Pelican crossing would cause greater overall delay than the Zebra crossing, and there would be a mismatch in crossing type over a short distance.

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Dyke Road – cycle and pedestrian facilities Summary of themes & officer responses to TRO objections

- Brighton & Hove Various Controlled Parking Zones Consolidation Order 2008 Amendment Order No. * 20** (ref. **TRO-27a-2013**)

Dyke Road – relocation and removal of Shared permit and Pay & Display Parking in the section of Dyke Road between Old Shoreham Road and The Upper Drive and relocation of a motorcycle bay. Additional double yellow lines will also be implemented where needed to prevent obstruction.

- Brighton & Hove Outer Areas (Waiting, Loading and Parking) and Cycle Lanes Consolidation Order 2013 Amendment Order No.* 201* (ref. **TRO-27b-2013**)

Dyke Road - new lengths of mandatory cycle lane on east side of the road between Old Shoreham Road and The Upper Drive and on west side between Old Shoreham Road and Port Hall Road.

Analysis of objections:

A total of 68 people have objected to the TROs overall. 9 people objected to TRO-27a- 2013 only and 59 people objected to both TRO-27a-2013 and TRO-27b2013. 75 pieces of correspondence were received (7 of those pieces of correspondence were the same people responding separately to each TRO associated with the scheme). The correspondence stating an objection to the TROs has been reviewed in order to understand the various reasons behind the objections.

A tally of the no. of times each theme was referred to in each objection has been made and is included in the table below, along with officer responses to each objection theme.

The three themes most referenced by people responding were:

- Changing the crossing facilities from traffic light controlled (pelican) crossings to zebras is dangerous/unsafe

- The shared use path will be dangerous for pedestrians, people will stand in the cycle lane and cycles will not stop
- The removal of parking

Themes & responses:

Cat.	Theme	TRO-27a-2013	TRO-27b-2013	TRO-27a&b	Total	Response
A	Change from pelican to raised zebra is dangerous/unsafe	6	6	30	42	It is now widely accepted and often cited in current guidance from Department for Transport that in general zebra crossings create a greater sense of pedestrian priority and also foster greater awareness of all road users when using our streets. The city council is aware that adding crossing facilities can be helpful but can also be of detriment to safety of an area/street. As the proposal for the Dyke Road area effectively forms a corridor approach it is necessary to review crossing provision as part of that process. Recent analysis of the overall safety between zebra crossings and light-controlled crossings in the city showed that zebras are out-performing light controlled crossing in terms of safety.
B	Removal of railings /street furniture/ clutter is dangerous/unsafe/bollards stop people parking	8	3	8	19	Removal of unnecessary railings and street furniture is part of creating a more pedestrian friendly environment where pedestrians are not restricted and the effective width of the footway is maximised. The fairly recent

						<p>removal of all guard-railings in Oxford Circus increased the amount of pedestrian space by about 70 percent. Guardrails are gradually being removed from London's streets. This is an ongoing project which forms part of the <u>Mayor's Transport Strategy</u> to improve the city's environment. As well as creating more street space TfL state that the safety benefits of removing guardrails include:</p> <p>Fewer obstacles for pedestrians</p> <ul style="list-style-type: none"> - A reduction in accidents involving trapped cyclists and guardrails - Wider crossings and less overcrowding which make journeys quicker and more convenient for pedestrians - Improved visibility for drivers to see pedestrians, particularly children, and visa versa - More careful driving and slower speeds <p>Originally intended to guide pedestrians away from the road, guardrails often have the opposite effect. People often walk around them, which can trap them in the road. Pedestrian guardrails are not vehicle restraint barriers and do not offer pedestrians protection from vehicles. In many cases, they provide a false sense of security to both pedestrians and drivers.</p>
C	No need for a cycle lane/why are cycle lanes necessary	5	6	12	23	A decent cycle network in the city requires the City Council to properly assess the conditions of the street

	<p>when there are others/why can't cycles go through Dyke Rd. park</p>				<p>environment to ascertain the most appropriate fit of cycle facility. People who are comfortable cycling on roads, among traffic are doing so already, but there are many who will not cycle, especially with young children unless they 'feel' safe cycling alongside motorised vehicles. In general lower speed of traffic and lower volume are the first principles to address (if possible) when creating good streets for cycling (and walking). These are basic comfort principle to address. If a human being on foot moves at 4mph and the average cycle user at 12mph but a motor vehicle can move at 30mph+ the speed differential is so far from the pedestrian or cycle speed that it makes people feel uneasy. Many streets in Brighton & Hove have been reduced to 20mph in recent years, however, Dyke Road, though only classified as a B road near the city centre is considered arterial in terms of the overall network. The speed limit on Dyke Road will remain at 30mph until it meets with the Seven Dials junction. The volume and speed of traffic is such that a stronger solution for people who might choose to cycle if they thought they were given some protection from motor traffic is required.</p> <p>When first considering an approach to cycle facilities in Dyke Road officers pursued a suggestion by a local councillor to consider cycle facilities in Dyke Road park. In discussion with users of the park it was quite clear that the lower path on the east side of the park was more suitable to pedestrians only and that the raised path, adjacent to the parking was a good solution for cycle users to share with pedestrians in northbound direction.</p>
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						If cycle users were to use the lower path there could also be issues associated with lighting and good visibility.
D	Cycle lanes dangerous/unsafe for pedestrians	2	2	21	25	There is very little evidence of issues with pedestrians encountering difficulties across cycle lanes of the proposed configuration. Indeed the greater the cycle network, with a clear and consistent approach, the greater the understanding and legibility will be for both cycle user and people on foot. All designs are subject to independent Road Safety Audit which highlight any potential safety related considerations.
E	Concerned about reduction in parking (pressure on residential areas/school pick up and drop off) querying total number of parking spaces available before and after/ residents using P&D reducing availability for parents at Windlesham (parking north of Porthall Rd. should be ticketed only and not shared P&D)/removal of motorcycle parking nr. BHASVIC	9	1	25	35	The parking facilities in Dyke Road and adjacent to Dyke Road have been assessed. In total there are currently 48 parking spaces available on Dyke Road itself. Surrounding controlled zones were also observed to understand parking patterns. Surveys showed that parking in adjacent streets was rarely at capacity and revealed that in general more than 20 places were available at any given time between 7am and 7pm. In the proposals a total of 15 bays, 2 disabled bays and one motorcycle bay are to be removed at the southern end of the scheme area, opposite BHASVIC college. Efforts to mitigate the reduction have been made by including additional parking adjacent to Dyke Road park and assessing availability in streets adjacent to Dyke Road.
F	Existing/future illegal parking will become worse/more dangerous	5	1	16	22	With any new scheme it takes a while for changes to 'bed in'. We will request that parking enforcement officers patrol the area to enforce when appropriate, particularly in the early stages of changes having been

						made.
G	Road narrowing will increase congestion /restrict emergency vehicle access/increased journey times/more noise&pollution from standing traffic	1	4	18	23	The carriageway at Dyke Road will remain as a two-way street, which it is now. A road only has as much vehicle capacity as its narrowest point. It is also anticipated, particularly from seeing results at Old Shoreham Road where there has been an increase in cycle users of 38%, that more people will feel able to choose to cycle, walk and take the bus as a result of the facilities that support them to do so. The scheme has potential to improve traffic flow and reduce speed.
H	Concerned existing/future rat-running in residential streets	3	1	11	15	This can be monitored but the directness of Dyke Road against constrained an already constrained residential area make this unlikely.
I	Disruption caused through works/construction/OSR & Seven Dials works took a long time.	1	3	9	13	We do appreciate that a good deal of construction work has taken place in the vicinity in the last couple of years. OSR took 6 months to construct, even with a full road closure for the best part of 5 months. While it may be uncomfortable for a short while, the long-term benefits anticipated out-weigh a relatively short period of disruption. Every effort will be made, in co-ordination with our Network Management team to keep everyone moving. Disruption to the network is anticipated in the area with the development at BHASVIC college (12 months construction) and any street works the transport team undertake will align with these works where feasible.
J	Data to support view that cycle lanes will encourage more people to cycle?/Have	1	2	11	14	The key driver for creating facilities for cycle users in this area is to create a decent cycle network which caters for young people travelling to school in the area. The

	other cycle lanes increased cycles and decreased cars?/To support use of public spaces/Evidence that the changes are soundly based					facilities at Old Shoreham Road and Lewes Road have shown healthy increases in the number of cycle users following their completion. We are conducting Route User Surveys at Dyke Road which will also give us qualitative information on the user experience for those travelling on foot and by bike.
K	Possible pavement width reduction? (eastern side specifically mentioned)	6	5	11	22	There will be very little alteration to existing footway widths aside from a small section south of Porthall Road.
L	Shared use paths are dangerous for pedestrians/standing in cycle lane when crossing/cycles will not stop/cycles do not obey rules of road/not wide enough for both	6	7	21	34	Many city authorities in the UK implement only shared use areas for peds. & cycles, in B&H we have taken the opportunity to segregate where possible and integrate on short sections only (e.g. OSR). We are widening some of the upper footway area which is being shared and this will be for cycle users heading northbound only. While we anticipate that the lower path will become more pedestrian dominated we do not wish to exclude pedestrians from the upper path. If parking is to be retained alongside the eastern edge of the park then we are also conscious that cycle users should not be put in a position of conflict with vehicles parking.
M	Loading and unloading at local shops/Audi Garage (Highcroft/Upper Drive)esp/ with cycle lanes in place	1	2	10	13	The loading/unloading situation is under further review in light of the whole junction area being assessed & arrangements associated with parking and loading in front of the local shops. Further discussions with Audi are required before this section of cycle facility can be implemented effectively.
N	Concerned about losing mature trees	4	3	2	9	There are no mature trees being lost at all. One young tree is proposed to be relocated to maximise parking

						space.
O	Retain the loading concession outside the houses between Port Hall Road and Windlesham School with it's current restrictions in place for school hours.	4	3		7	This will be investigated further.
P	Proposals are unclear/insufficient consultation	1		4	5	Details of the consultation approach can be found in the report taken to ETS cttee on 26 th November 2013 which show clear proposals, including location of cycle facilities, changes to crossings being proposed and removal/relocation of parking.
Q	Restrictions to parents being able to pick up and drop off along Dyke Road not wanted	1			1	Parking restrictions are in place to maximise the safety of all users of the area. BHCC have sent links to Windlesham School about park and stride and other information to help alleviate traffic related issues associated with school pick up and drop off. School Travel Officers are also available to work with schools keen to address issues associated with travelling to school.
R	People using the park should come before people who cycle	1			1	We anticipate that more people will be able to access the park by walking, cycling and taking the bus there as a result of these proposals. These people, regardless of how they choose to travel are all considered potential users of the park.
S	Concerned about business (Windlesham)	1			1	BHCC is concerned about the business of the city council in managing our streets and how 270K people who live here and 8 million people who visit our city each year are able to get around. A balance needs to be

						struck and we must seek to use our public highway network more efficiently.
T	Questioning capacity assessments (parking)	1		2	3	Parking surveys are conducted by an independent consultancy working with BHCC on the scheme design.
U	Children too young to cycle to school			1	1	Some children will certainly be too young to cycle to school on their own but the facilities mean that parents may be able to consider the viability of cycling with their children. There are also many 6 th form students travelling to schools in the area so we are taking account of all ages and ability.
V	Problems with cars passing one another at Port Hall Rd.			1	1	A street such as Porthall, like most streets in Brighton & Hove was never designed to cope with a high level of motor vehicle traffic. Do we widen and take away parking and footway areas on Porthall Road? This is a residential street and as such our approach is to facilitate easier movement through alternative transport modes.
W	Overall unsafe			12	12	All our street improvement works/proposals are subject to Road Safety Audit process. This is completed by independent assessors who specifically consider any potential safety implications at design stage and again once a scheme is completed.
X	Parents at Windlesham will block the cycle lane			1	1	Our enforcement team will patrol the area to enforce where appropriate.
Y	Other issues outside of scope area. Cycle lanes further north on Dyke Rd. are parked in./Dyke Rd./Upper Drive crossings need to be			4	4	We have certainly considered the need to improve conditions further north of The Upper Drive/Highcroft Villas along Dyke Road. Enforcements officers are able to address instances of anti-social parking where restrictions exist. Unfortunately such restrictions do not

	included/signals take too long/parking and bus expense /Speed humps & 20 mph should be used					cover the full length of Dyke Road. Upon review of available budget and resource it became clear that the best use of available funding was to focus on creating a good cycle network connection between existing facilities at Old Shoreham Road and further south along Dyke Rd and linking those facilities in with the proposed 20mph speed limit along The Upper Drive.
X	How much is this going to cost tax payers?			3	3	The budget available for the scheme currently stands at £150K and officers have secured s.106 funding of approximately £90K in addition to this.

Reasons for objecting to the TROs have been grouped together under a theme and listed in order of number of times mentioned as follows:

Cat.	Theme	Total
A	Change from pelican to zebra is dangerous/unsafe	42
L	Shared use paths are dangerous for pedestrians/standing in cycle lane when crossing/cycles will not stop/cycles do not obey rules of road/not wide enough for both	34
E	Concerned about reduction in parking (pressure on residential areas/school pick up and drop off) querying total number of parking spaces available before and after/ residents using P&D reducing availability for parents at Windlesham (parking north of Porthall Rd. should be ticketed only and not shared P&D)/removal of motorcycle parking nr. BHASVIC	34
D	Cycle lanes dangerous/unsafe for pedestrians	25
C	No need for a cycle lane /why are cycle lanes necessary when there are others/why can't cycles go through Dyke Rd. park	23
G	Road narrowing will increase congestion /restrict emergency vehicle access/increased journey times/more noise&pollution from standing traffic	23

K	Possible pavement width reduction? (eastern side specifically mentioned)	22
F	Existing/future illegal parking will become worse/more dangerous	22
B	Removal of railings /street furniture/ clutter is dangerous/unsafe/bollards stop people parking	19
H	Concerned existing/future rat-running in residential streets	15
J	Data to support view that cycle lanes will encourage more people to cycle?/Have other cycle lanes increased cycles and decreased cars?/To support use of public spaces/Evidence that the changes are soundly based	14
M	Loading and unloading at local shops/Audi Garage (Highcroft/Upper Drive)esp/ with cycle lanes in place	13
I	Disruption caused through works/construction/OSR & Seven Dials works took a long time.	13
W	Overall unsafe	12
N	Concerned about losing mature trees	9
O	Retain the loading concession outside the houses between Port Hall Road and Windlesham School with it's current restrictions in place for school hours.	7
P	Proposals are unclear/insufficient consultation	5
Y	Other issues outside of scope area. Cycle lanes further north on Dyke Rd. are parked in./Dyke Rd./Upper Drive crossings need to be included/signals take too long/parking and bus expense /Speed humps & 20 mph should be used	4
T	Questioning capacity assessments (parking)	3
X	How much is this going to cost tax payers?	3
Q	Restrictions to parents being able to pick up and drop off along Dyke Road not wanted	1
R	People using the park should come before people who cycle	1
S	Concerned about business (Windlesham)	1
U	Children too young to cycle to school	1
V	Problems with cars passing one another at Port Hall Rd.	1
X	Parents at Windlesham will block the cycle lane	1

