

LAND AT PONT ADAM CRESCENT, RUABON, WREXHAM
ERECTION OF 49No. DWELLINGS, INCLUDING VEHICULAR AND
PEDESTRIAN ACCESS

Appeal against refusal of planning permission:
LPA Planning Application Reference: P/2014/0241

HIGHWAYS & TRANSPORTATION MATTERS

HEARING STATEMENT OF MIKE HUGHES BEng MCIHT

On Behalf of Castlemead Group Ltd.

Appeal Ref: APP/H6955/A/14/2229577



AXIS
Camellia House
76 Water Lane
Wilmslow
SK9 5BB

Tel: 0844 8700 007

www.axisped.co.uk

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1.0 INTRODUCTION

1.1 Qualifications and Experience

1.1.1 This Hearing Statement on Highways & Transportation matters has been prepared on behalf of Castlemead Group Ltd. by Mr. Mike Hughes of Axis Transport Planning. I am a Chartered Transportation Planner, being a member of the Chartered Institution of Highways and Transportation (CIHT), and I have a degree in Civil Engineering (BEng Hons). I am an Associate at AXIS, a private planning, environment and design consultancy, whose services include specialist Transportation Planning advice.

1.1.2 I have worked in the field of transportation planning for over 10 years and my experience ranges from the preparation of detailed Transport Assessments for major residential, commercial, industrial, waste and leisure developments to the appraisal of new road schemes. I have also prepared highways and transport sections of Environmental Statements for a variety of projects and coordinate the preparation of Travel Plans for major development sites, including leisure, commercial, residential and employment schemes. I have experience of providing traffic and transportation advice for private residential schemes of all scales at a range of locations across the UK, including within the North Wales region.

1.1.3 My involvement with the residential scheme at Ruabon, the subject of the appeal, has been as part of the technical consultancy team originally commissioned in early 2014 to prepare and submit a planning application in respect of the project. Following this commission I have had continued involvement up to and including this Planning Appeal Hearing. This role has encompassed the preparation of formal highways related planning application documentation, together with the provision of general transportation advice following the submission of the application and in the period leading up to this Inquiry. I am fully familiar with the Ruabon Appeal Site and the immediate area, and the layout and operation of the adjacent highway network.

1.1.4 My evidence should be read in conjunction with the other information included within the Appellant's evidence on planning issues prepared by Mr. Nigel Thorns of Nigel Thorns Planning Consultancy Ltd.

1.2 **Scope of Matters Considered**

1.2.1 My evidence has been prepared to consider highways and transport matters in support of the Appeal by Castlemead Group Ltd. (The Appellant) against the refusal of planning permission by Wrexham County Borough Council (WCBC – The Council) of the proposed Ruabon residential scheme (Planning Ref: P/2014/0241). The Appeal Scheme proposes the delivery of up to 49 private residential dwellings with supporting car parking and associated hard and soft landscaping.

1.2.2 The planning application for the Ruabon residential scheme was submitted to The Council in April 2014. The 2014 application was supported by a comprehensive Transport Statement (TS) (Axis Document Ref: 1521-01-TS01b). Initial consultation comments on the planning application from The Council, in their role as the local highway authority, identified two reasons for refusal, as follows:

- The roads (B5097 Church Street and Pont Adam) giving access to the site are by reason of their inadequate width, their horizontal alignment and their substandard pedestrian provision, unsuitable to accommodate the increase in traffic likely to be generated.
- There is restricted visibility at the junction of Pont Adam Crescent and B5097 Pont Adam and increased use would increase the likelihood of danger to road users.

1.2.3 Following submission of additional information by Axis, in the form a Technical Note (TN, Axis Document Ref: 1521-01-TN01a), the local highway authority issued a revised consultation response to the planning authority, which outlined that they were satisfied that visibility from Pont

Adam Crescent accorded with the requirements of Manual for Streets 2 (MfS2). However, they retained the first of the original reasons for refusal.

- 1.2.4 The proposals were considered by The Council's strategic planning committee in August 2014 and refused, on the basis of the sole reason for refusal given on highway grounds.
- 1.2.5 This Hearing Statement has therefore been prepared in response to the reason for refusal given by The Council on highway grounds. The following sections of my Hearing Statement seek to consider The Council's reasoning in detail, and provide evidence which clearly illustrates that there is no demonstrable reason for refusal of the Appeal Scheme on highway grounds.

2.0 LOCAL AUTHORITY HIGHWAY ISSUES

2.1 Nature of Issues Raised

2.1.1 As noted above, the Appeal Scheme was refused by The Council on the basis of one objection on matters relating to highways and transportation. In its reasoning for the recommendation for refusal on highway grounds, The Council stated:

- The roads (B5097 Church Street and Pont Adam) giving access to the site are by reason of their inadequate width, their horizontal alignment and their substandard pedestrian provision, unsuitable to accommodate the increase in traffic likely to be generated.

2.1.2 Review of the formal consultation comments received from local highway authority officers identifies that the decision to recommend refusal was based on concerns over the quantum of traffic anticipated to be generated by the Appeal Scheme, given the substandard nature of the route of the B5097 Pont Adam/Church Street to the south. A number of key aspects raised by The Council can be identified as follow:

- The existing route of the B5097 Pont Adam/Church Street is substandard for both motorised and non-motorised users. Any material increase in its use would represent a material concern;
- Development trip generation is anticipated to exceed the 5% threshold outlined within Welsh Government guidance on Transport, which indicates that a 5% increase in turning movements at a Trunk Road junction would be material; and
- The Appeal Scheme's proposed footway/cycleway connection to the route of the A539 would not provide an attractive alternative route for pedestrians and cyclists between the site and Ruabon, over the more direct route via Pont Adam Crescent and the B5097 Pont Adam/Church Street.

2.1.3 My evidence explores each of these core issues in further detail in the following sections.

2.2 Existing Local Highway Geometry

Objection Issue

2.2.1 Review of formal consultation comments made by officers at The Council outlines that a number of comments are made in respect of highway safety, most notably those relating to the geometry of the B5097 route, as follows:

- The B5097 Pont Adam/Church Street is of substandard width and provides very little protection for pedestrians. There are areas with no footway provision at all which is of particular concern given that this is the route to Ruabon High School; where footways are provided their width is generally less than 1m and therefore below current design standards;
- It is considered that there are serious pedestrian safety issues along this route;
- Church Street is restricted in places to 3.7m width, inadequate room for two vehicles to pass simultaneously. Pont Adam is itself similarly restricted in parts to less than 3.5m in width;
- The road currently operates on a priority working system which is far from ideal but helps to some extent in controlling traffic flows along the road;
- Forward visibility along the road particularly in the area of the railway bridge is restricted and this leads to vehicles being unaware of oncoming traffic. Vehicles are witnessed mounting the kerbs and footway just to allow oncoming vehicles to pass, with school children stopping and standing against the wall to prevent from being hit by a vehicle.

Appellant's Response

- 2.2.2 Access to the site is proposed to be taken from the existing local residential estate roads that make up Pont Adam Crescent. The various sections of Pont Adam Crescent, including that from which the site is proposed to be served are all of 5.5m width and include footways to both sides. Pont Adam Crescent ultimately forms two priority controlled give-way T-junctions with the route of the B5097 Pont Adam, which becomes Church Street further to the southeast.
- 2.2.3 With regard to the B5097 Pont Adam/Church Street I would accept that the route is of limited width in parts and for some sections forward visibility may also be restricted. It should be borne in mind, however, that the route of Church Street/Pont Adam does form an existing B-road route to the west of Ruabon and currently serves to provide access to a wide range of uses including residential development and the local secondary school, Ysgol Rhiwabon.
- 2.2.4 The submitted TS included an appraisal of Personal Injury Accident data (PIA) for the local highway network to the site, for what was the most recent five year period of 1 January 2008 – 31st December 2012. In order to further inform my evidence, this search has subsequently been updated to cover the full period for which data is available 1 January 2005 – 31st December 2013. This information, which is attached as Appendix MPH1 to this statement, identifies that just 4 incidents are noted as having occurred, with just one on the restricted section of the B5097 Pont Adam/Church Street to the southeast. The other 3 incidents are all recorded to the northwest of the southernmost Pont Adam Crescent junction.
- 2.2.5 It was acknowledged within the original supporting TS that the PIA data, which was obtained from the Crashmap.co.uk website, and supplied to that website by the DfT, does not include full details of how the recorded incidents may have occurred, or the most likely causal factors. Accordingly, In order to inform my evidence, a request for the detailed

PIA data for the full history available has been made to the local highway authority (WCBC). This information, covering the period 1 January 2004 – 31st December 2013) provides greater detail in respect of the incidents that have occurred and enables clearer identification of the likely causal factors. Review of this information (see Appendix MPH2) identifies the same 4 incidents and notes that all involved young male pedestrians between the ages of 12-14, and single vehicles. Two occurred during the AM period and two during the PM period, most likely pre and post school hours at the nearby high school.

2.2.6 Further review notes that, in two of those incidents to the west the pedestrians were walking in the main carriageway of Pont Adam – from the description of the location of each incident, and the grid references provided, it is clear that footways are provided in the locations where the incidents are noted as having occurred. The remaining incident to the west is recorded as having occurred much further to the west of Pont Adam Crescent, and is therefore not considered material in terms of the consideration of the impact of the proposed development. Axis would note, however, that footways are available to at least one side of the carriageway for the full length of the B5097 between Pont Adam Crescent and Tatham Road in the west. Accordingly there should be no need for pedestrians to be walking within the main carriageway. Of key note, however, is that with regard to the incident to the east, the WCBC information identifies that the pedestrian was walking half on the road and half on the available footway.

2.2.7 Given the extensive review of local accident history trends that has been undertaken, it is considered that there is no demonstrably adverse safety record associated with the operation of the existing route of the B5097 Pont Adam/Church Street. Whilst some incidents have been noted, albeit most to the west of Pont Adam Crescent, it is clear that all should have been avoidable and were likely to have occurred as a direct consequence of poor judgement on the part of the pedestrian involved rather than any inherent highway geometry related safety issue. Moreover it is considered that the restricted nature of this route is likely to actually

promote more careful and considered use by both motorised and non-motorised users – a consideration that is borne out in the positive safety record of the route.

- 2.2.8 Given the extensive review of local accident history trends that was undertaken, it remains my consideration that one PIA incident in the last 10 years on the restricted section of the B5097 Pont Adam/Church Street route does not constitute a material safety concern. Accordingly, and despite perceptions, I consider that there is no demonstrably adverse safety record associated with the operation of the existing route of the B5097 Pont Adam/Church Street.

2.3 **Anticipated Impact of Development Traffic**

Objection Issue

- 2.3.1 The Axis TS, submitted in support of the planning application, included appraisal of the anticipated trip generation of the Appeal Scheme. Following the initial June 2014 consultation comments received from The Council, in which officers considered that the development would give rise to a material impact, the Axis TN was submitted which included some traffic flow information for the route of the B5097 Pont Adam. The purpose of this information was to set the trip generation of the Appeal Scheme into some degree of context. Council officers, however, reiterated their consideration that the development would give rise to a material impact as follows:

“The applicant has now provided some evidence of existing traffic generation along Pont Adam and Pont Adam Crescent which concludes that there is a potential for a 17% increase in traffic generation along Pont Adam / Church Street as a result of this proposal.

Whilst Welsh Assembly Government Technical Advice Note 18 on Transport does not provide a specific definition of what a material increase would be in relation to traffic on Pont Adam, paragraph E4 of

Annex E to the document referring to traffic using junctions for trunk roads, does indicate that a 5% increase in those circumstances would be material. A recent Welsh Government appeal decision has confirmed that this is an appropriate measure of what represents a material increase. I can only conclude therefore that a 17% increase in traffic is a material consideration in this instance.”

Appellant's Response

Submitted Assessment Data

- 2.3.2 Trip rates for the proposed residential redevelopment scheme, as considered within the TS, were derived from the TRICS database of development trip rates. Full detailed TRICS output information was provided at Appendix TS1 of the original TS, and included those individual sites considered within the assessment of trip generation and the site filtering parameters applied in order to refine the assessment process.
- 2.3.3 The assessment of trip generation considered both the likely average level of trip generation that could occur from a site such as the Appeal Site, and also that level of trip generation which could occur in the upper 85th percentile number of cases. Whilst use of average trip rates should provide the reader with an appreciation of the most likely levels of trip generation from a site of a given size, the use of 85th percentile trip rates is typically adopted in order to provide some degree of robustness and reassurance in the assessment process when investigating key issues such as the effects on highway network capacity. This approach is widely accepted and established.
- 2.3.4 Outputs from the TRICS assessment identified the following peak hour average and 85th percentile trip rates for typical small private residential sites:

Table MPH2.1: Residential Development Trip Rates

Trip Rates (per dwelling)	Arrivals	Departures	Total
Average			
AM Peak (08:00-09:00)	0.171	0.385	0.556
PM Peak (17:00-18:00)	0.363	0.213	0.576
85 th Percentile			
AM Peak (08:00-09:00)	0.235	0.588	0.823
PM Peak (17:00-18:00)	0.556	0.222	0.778

- 2.3.5 Application of these trip rates to the Appeal Scheme size of 49 dwellings, provided the following estimates of peak hour trip demand:

Table MPH2.2: Predicted Development Trip Demand

Trip Total	Arrivals	Departures	Total
Average			
AM Peak (08:00-09:00)	8	19	27
PM Peak (17:00-18:00)	18	10	28
85 th Percentile			
AM Peak (08:00-09:00)	12	29	41
PM Peak (17:00-18:00)	27	11	38

- 2.3.6 It was considered in both the Axis TS and TN that the level of development traffic anticipated, based on the TRICS assessment approach, would not represent a substantive level of peak hour traffic. Maximum two-way movements of just 41 vehicles per hour (based on 85th percentile rates) would be the equivalent of 1 additional vehicle movement approximately every 2 minutes. It was therefore considered that the Appeal Scheme would be unlikely to result in any noticeable impact upon prevailing local network operating conditions.

- 2.3.7 As noted above, the supplementary Axis TN document also included for some traffic flow data for the route of the B5097 Pont Adam, in order to set the context of the development impact. Two-way traffic levels along the B5097 Pont Adam were observed as being 235 vehicles during the AM peak hour, with 45 two-way movements on the southern Pont Adam Crescent approach. Para 2.14 of the TN notes that, even if all

development traffic (under 85%ile generation conditions) were to route to/from the south along the B5097 Pont Adam, the proportional impact of 41 development generated movements would be circa 17% - hence the comments from WCBC officers quoting this figure. Regardless of the proportional impact quoted, 1 additional vehicle movement every 2 minutes would not, in my consideration, give rise to a noticeable impact.

Updated Assessment Data

2.3.8 In order to inform my evidence, subsequent additional traffic surveys have been undertaken. These include both Automated Traffic Counter (ATC) and turning count surveys. An ATC survey was undertaken in October 2014, with a view to determining the typical traffic flow levels along the B5097 – this would further set the context of development related traffic, having in mind the typical variation in flows that occur during the week. Turning count surveys were undertaken in January 2015 of both Pont Adam Crescent junctions with the B5097 Pont Adam – these surveys would help to determine the level of traffic currently generated by the Pont Adam Crescent residential area, which has no other access to the highway network.

2.3.9 Appendix MPH3 to my evidence includes the output from the ATC survey, whilst Table MPH 2.3 summarises the recorded output for the observed AM and PM network peak hours of 08:00-09:00 and 17:00-18:00 respectively, across the weekdays surveyed:

Table MPH2.3: Observed October 2014 Weekday Flows – B5097 Pont Adam

Trip Total	Westbound	Eastbound	Total
AM Peak (08:00-09:00)			
01.10.2014 (Wed)	94	101	195
02.10.2014 (Thur)	115	115	230
03.10.2014 (Fri)	128	115	243
06.10.2014 (Mon)	150	145	295
07.10.2014 (Tue)	125	114	239
PM Peak (17:00-18:00)			
01.10.2014 (Wed)	105	46	151

02.10.2014 (Thur)	77	60	137
03.10.2014 (Fri)	114	55	169
06.10.2014 (Mon)	74	50	124
07.10.2014 (Tue)	82	62	144

2.3.10 Review of the above information clearly demonstrates that the peak period of background network traffic flow occurs during the AM period of 08:00-09:00. Traffic flows recorded during this period, however, are also noted to vary across the week by as much as 100 vehicles. Indeed, comparing the peak traffic levels of 295 two-way vehicles against the combined level of development and network traffic previously considered (para 2.3.7 – $41+235=276$ movements) demonstrates that the B5097 Pont Adam already experiences higher traffic levels, and with a positive safety record.

2.3.11 The above comparison highlights the difficulty in judging the impact of development on the basis of a percentage impact figure – the proportional impact of predicted development related traffic could vary considerably across a week. It is of note that the consideration of proportional development impact is no longer advised within the DfT guidance document, Guidance on Transport Assessment. Whilst I would acknowledge that this document is not applicable in Wales, and the Welsh Government guidance document TAN18 does still outline a percentage impact threshold for material impacts, it should be borne in mind that TAN18 specifically notes the use of this threshold in reference to increases in turning movements at Trunk Road junctions. Moreover, it is clear that the arbitrary application of percentage impact thresholds cannot be wholly relied upon – some consideration of the nature of prevailing traffic flows would provide a better understanding of whether development related traffic would give rise to a material and unacceptable impact. Nevertheless, I have undertaken more detailed analysis of the likely proportional impact of development in the following paragraphs.

- 2.3.12 As noted above, additional traffic surveys have been undertaken in January 2015 in order to identify the quantum of traffic associated with the existing Pont Adam Crescent residential development area. Figure MPH1 to my evidence illustrates the observed AM and PM peak hour turning flow movements at both Pont Adam Crescent junctions with the B5097 Pont Adam (full data attached to this Statement as Appendix MPH4).
- 2.3.13 Review of this turning flow data for the busiest period, the AM peak hour, identifies that the Pont Adam Crescent currently generates 24 two-way movements via its western junction and 46 two-way movements via its eastern junction, 70 movements in total between the two. Traffic flows along the B5097 Pont Adam are noted at 289 two-way movements in total. Having reviewed Ordnance Survey mapping data it is understood that the existing Pont Adam Crescent comprises 158 dwellings, and includes a mix of semi-detached and detached properties. In essence, the area includes a typical mix of housing types, as per the Appeal Scheme.
- 2.3.14 In addition to the total quantum of traffic associated with the existing Pont Adam Crescent development, it is also possible to determine from the observed traffic flows the proportional split between those travelling to/from the west and those travelling to/from the east via the section of B5097 Pont Adam which is the subject of The Council's concerns. AM peak hour observations suggest 11% of movements (8/70) are to/from the west. As noted at Para 2.3.7 of this Statement, the previously identified figure of a 17% impact was based on the crude assumption that all development traffic would route via the B5097 Pont Adam to the east. In reality, the above observations demonstrate that c10% would actually route via the west.
- 2.3.15 By comparing the recorded number of turning movements from the development, with the number of dwellings, Pont Adam Crescent specific trip rates for the Appeal Scheme are able to be derived. Accordingly, any subsequent estimates of anticipated trip generation associated with the

Appeal Scheme can be considered to be as accurate as possible to any local trends. Based on this approach, Table MPH 2.4 illustrates the observed trip rates for the existing Pont Adam Crescent development for the AM and PM peak hour periods.

Table MPH2.4: Observed Pont Adam Crescent Trip Rates

Trip Rates (per dwelling)	Arrivals	Departures	Total
Residential			
AM Peak (08:00-09:00)	0.127	0.316	0.443
PM Peak (17:00-18:00)	0.266	0.139	0.405

2.3.16 Review of Table MPH2.4 identifies that an existing two-way trip rate of 0.443 trips per dwellings can be derived (70/158). PM peak hour observations give rise to a two-way trip rate of 0.405 trips per dwelling (64/158). Comparison of these observed Pont Adam Crescent rates with those illustrated in Table MPH2.1 of my evidence would suggest that the assessments undertaken in the submitted TS and TN documents may have significantly overestimated the impact of development. Observed rates of c0.4 compare to TRICS average and 85th percentile rates of c0.55 and c0.8 respectively.

2.3.17 Application of these trip rates to the Appeal Scheme development size of 49 dwellings provides the following estimate of trip demand:

Table MPH2.5: Predicted Appeal Scheme Trip Demand

Trip Total	Arrivals	Departures	Total
Residential			
AM Peak (08:00-09:00)	6	15	22
PM Peak (17:00-18:00)	13	7	20

2.3.18 Based upon the observed trip rates, during the busiest AM period the Appeal Scheme of 49 dwellings could reasonably be expected to generate a total of just 22 two-way movements. Assuming that 10% route via the B5097 Pont Adam to the west, then 20 two-way movements could be anticipated on the section of B5097 to the east.

2.3.19 Setting the above estimates against the observed traffic flows along the B5097 Pont Adam (Para 2.3.13 – 289 two-way movements) this level of Appeal Scheme generated traffic would equate to a proportional impact of just 6.9%, and just one additional vehicle every 3 minutes on the highway network to the east of the site. Whilst this level of impact would exceed the 5% quoted in TAN18 for turning movements at Trunk Road junctions, in my consideration it would not in reality be of any material concern on any route, let alone one with such a positive safety record.

2.3.20 With the above in mind it is my consideration that the breadth of evidence clearly demonstrates that the quantum of traffic likely to be generated by the Appeal Scheme would not give rise to any detrimental effect on the local highway network, either in terms of operational capacity or highway safety.

2.4 **Proposed Footway/Cycleway**

Objection Issue

2.4.1 The final key issue raised by The Council, in justification for the recommended reason for refusing the application on highway grounds, relates to the proposed footway/cycleway linking the Appeal Scheme to the route of the A539 Ffordd Llangollen and its non-motorised user infrastructure. The Council's June 2014 highways consultation comments noted:

“The applicant has proposed a new footway linking the site to Ruabon, via the existing footway alongside the A539 and through a neighbouring development site. Whilst this may provide a safer alternative route to the village it is unlikely to be used by many people walking to and from Ruabon village. The quickest and most direct route will still be along the B5097 Church Street and Pont Adam. Furthermore it does nothing to enhance the route for occupants of the existing dwellings on Pont Adam Crescent as the most direct route to the village will still be along the B5097 Church Street and Pont Adam. Indeed the route will not even be

attractive to most of the proposed development as their most direct route to Ruabon will still be along the B5097.”

- 2.4.2 Following Axis’ formal technical response in the subsequent TN document, which included further review of this additional route option and comparison with the existing B5097 route, The Council’s Highways team made the following final comments in their July 2014 consultation comments:

“The applicant contends that the proposed new footway linking the site to Ruabon, via the existing footway alongside the A539 is more likely to be used because it provides a safer route. Given that the existing footway provision is so substandard it is undeniable that the new footway will be safer but experience shows us that pedestrians tend to take the desire line which is usually the shortest possible route; in this instance the shortest route for all of the existing dwellings and some of the proposed development will be Pont Adam and Church Street.”

Appellant’s Response

- 2.4.3 It is noted in the final response from The Council’s Highways department that the proposed footway/cycleway would undeniably offer a safer means of walking to Ruabon than the existing route of the B5097 Pont Adam/Church Street. The view is taken, however, that residents of all of the existing and much of the new development would still likely choose to walk via the existing route which follows the B5097. This view appears to be adopted by The Council’s officers purely on the grounds that, in their experience, pedestrians will generally choose to take the shortest route to a destination.
- 2.4.4 Firstly I feel that it is important to get a better understanding of just what quantum of the existing and proposed Pont Adam Crescent development would benefit from the proposed footway/cycleway link. To that end I have undertaken a very straightforward comparative analysis of walking distances taken from the point on the existing estate road where the new

development would be accessed from, towards Ruabon via the existing and proposed walking routes. Figure MPH2 to my evidence illustrates the two measured paths against an aerial image of the immediate area.

- 2.4.5 This straightforward comparison has identified that between the point within the site and the junction of the B5097 Church Street with the B5605 High Street the walking distance would be virtually the same – 950m via the new route and 945m via the existing route. Furthermore, it should be noted that the new route would include c360m of “off highway” footway/cycleway route, thereby further improving the safety of non-motorised users of this route.
- 2.4.6 In addition to the relative walking distances noted above, I would also draw attention to the fact that, from the same point within the site, the new route would provide access to Ruabon Train Station within an 890m walk distance, as opposed to a 1,250m walk distance via the existing route of the B5097 Pont Adam/Church Street.
- 2.4.7 With the above in mind it is clear that there are potentially notable benefits to the proposed walking link, even for existing residents at the far end of the Pont Adam Crescent estate near the Appeal Site. At the very least, however, it should be borne in mind that the Appeal Scheme could be delivered with walking/cycling infrastructure which could safely accommodate at least all new additional Non-Motorised User (NMU) movements between Pont Adam Crescent and Ruabon, if not some existing NMU movements. This in turn would therefore suggest that NMU movements along the B5097 would be unlikely to increase as a consequence of the Appeal Scheme. Consequently any perceived increase in highway safety risk associated with potential conflict between motorised and non-motorised traffic along the B5097 Pont Adam/Church Street must therefore be limited to any anticipated increase in motorised traffic from the development only. Any such effects are discussed at section 2.3 of my evidence.

- 2.4.8 Moving on, I would contend that The Council on the one hand appears to have adopted the position that they have significant concerns regarding the safety of the route of the B5097 Pont Adam/Church Street, whilst on the other hand are suggesting that such concerns are not material enough to sway existing residents of the estate into walking perhaps only 100-200m further via the much safer new route offered by the proposed development. A route that would, in fact, offer many existing residents a marginally shorter route to Ruabon Train Station. If residents were indeed likely to continue to utilise the existing route of the B5097 Pont Adam/Church Street then it could be deduced that the actual highway safety risk associated with this route is much lower than being stated by The Council, and is at a level that residents consider acceptable.
- 2.4.9 It is my consideration that the safety record of the route does not suggest a material safety issue for NMUs and that, in practice, residents of the existing estate and the proposed development would actually use a combination of either the existing B5097 walking route, or the new route afforded by the Appeal Scheme. To that end, the Appeal Scheme would offer tangible benefit not only to residents of the Appeal Scheme development, but also to existing residents of the Pont Adam Crescent who wish to undertake journeys either by foot or cycle.

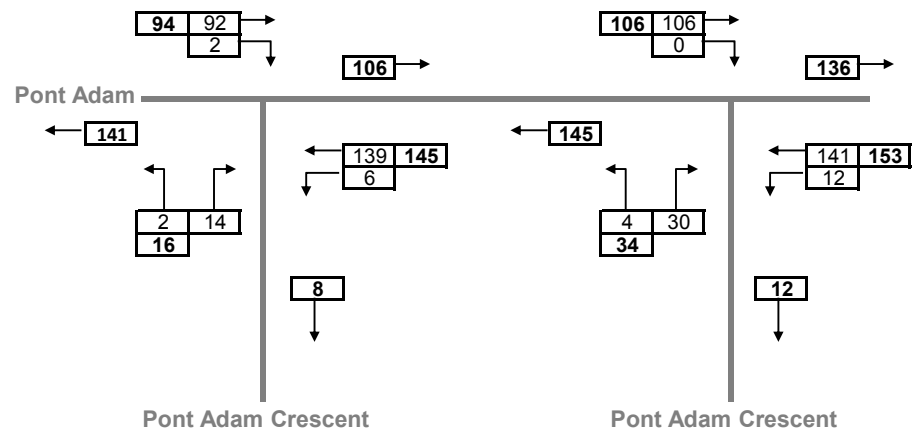
3.0 SUMMARY AND CONCLUSIONS

- 3.1 In summary, I consider that the Appeal Scheme for the development of up to 49 dwellings represents an appropriate development option for the Appeal Site when considered in terms of highways and transportation matters. Traffic generated by the Appeal Scheme can be safely accommodated on the existing local highway network without any notable effect on operational capacity or matters of highway safety. Moreover the proposed footway link to the A539 Ffordd Llangollen would provide tangible benefit not only to residents of the Appeal Scheme development, but also to existing residents of the Pont Adam Crescent who wish to undertake journeys either by foot or cycle
- 3.2 Given the above, I can only conclude that the Appeal Scheme would not result in a detrimental impact on the local highway network either in operational or highway safety terms. As a consequence there are no reasonable highway related grounds for refusal of the appeal.



FIGURES

AM Peak



PM Peak

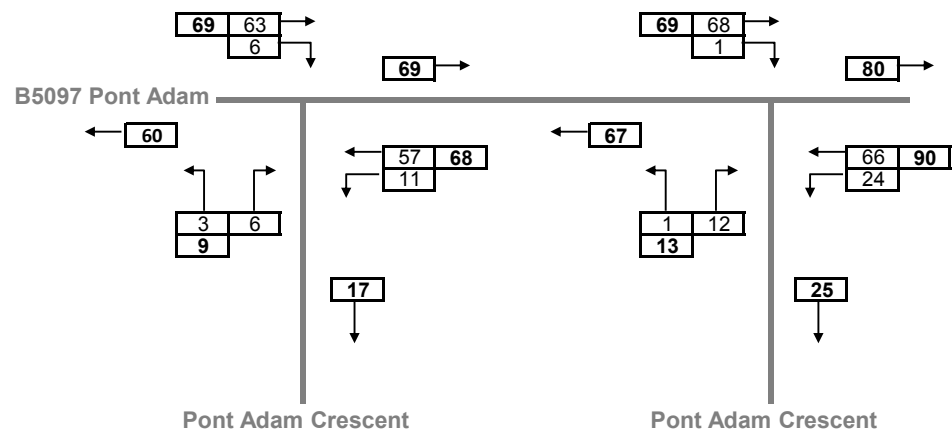


Figure MPH1

January 2015 Surveyed Pont Adam Crescent Traffic Flows

1629-01

Land at Pont Adam Crescent - Planning Appeal

March 2015

axis

Camellia House
76 Water Lane,
Wilmslow
Cheshire, SK9 5BB



Figure MPH2

Comparison of Walking Distances – Existing vs New Routes

1629-01

Land at Pont Adam Crescent – Planning Appeal

March 2015

axis

Camellia House
76 Water Lane,
Wilmslow
Cheshire, SK9 5BB



APPENDIX MPH1

Crash Report including Vehicle and Casualty Information



Crash Date:	Wednesday, September 14, 2005	Time of Crash:	8:30:00 AM	Crash Reference:	2005600WR7065
Highest Injury Severity:	Slight	Number of Vehicles:	1	Number of Casualties:	1
Highway Authority:	Wrexham			OS Grid Reference:	330170 343880
Local Authority:	Wrexham County Borough				
Road Number:	B5097	Road Type:	Single carriageway		
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30	Junction Control:	Not Applicable		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre
1	Taxi/Private hire car (2005 onwards)	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	11 - 15	On footway or verge	Unknown or other

For more information about the data please visit: <http://www.crashmap.com/home/aboutthedata> and <http://www.crashmap.com/home/definitions>

Crash Report including Vehicle and Casualty Information



Crash Date:	Monday, July 14, 2008	Time of Crash:	8:50:00 AM	Crash Reference:	2008600813184
Highest Injury Severity:	Slight	Number of Vehicles:	1	Number of Casualties:	1
Highway Authority:	Wrexham			OS Grid Reference:	329910 343990
Local Authority:	Wrexham County Borough				
Road Number:	B5097	Road Type:	Single carriageway		
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30	Junction Control:	Unknown		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre
1	Car (excluding private hire cars 2005 onwards)	7	Female	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	11 - 15	In carriageway, not crossing	Walking along in carriageway - back to traffic

For more information about the data please visit: <http://www.crashmap.com/home/aboutthedata> and <http://www.crashmap.com/home/definitions>

Crash Report including Vehicle and Casualty Information



Crash Date:	Thursday, March 26, 2009	Time of Crash:	3:15:00 PM	Crash Reference:	2009609054238
Highest Injury Severity:	Slight	Number of Vehicles:	1	Number of Casualties:	1
Highway Authority:	Wrexham	OS Grid Reference:	329720	344100	
Local Authority:	Wrexham County Borough				
Road Number:	B5097	Road Type:	Single carriageway		
Weather Description:	Unknown				
Road Surface Description:	Wet or Damp				
Speed Limit:	30	Junction Control:	Give way or uncontrolled		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre
1	Car (excluding private hire cars 2005 onwards)	13	Female	26 - 35	Vehicle proceeding normally along the carriageway, on a left hand bend

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	11 - 15	On footway or verge	Unknown or other

For more information about the data please visit: <http://www.crashmap.com/home/aboutthedata> and <http://www.crashmap.com/home/definitions>

Crash Report including Vehicle and Casualty Information



Crash Date:	Wednesday, July 15, 2009	Time of Crash:	3:10:00 PM	Crash Reference:	2009609131979
Highest Injury Severity:	Slight	Number of Vehicles:	1	Number of Casualties:	1
Highway Authority:	Wrexham	OS Grid Reference:	329930	343980	
Local Authority:	Wrexham County Borough				
Road Number:	B5097	Road Type:	Single carriageway		
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30	Junction Control:	Not Applicable		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre
1	Car (excluding private hire cars 2005 onwards)	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Pedestrian	Male	11 - 15	In carriageway, not crossing	Walking along in carriageway - back to traffic

For more information about the data please visit: <http://www.crashmap.com/home/aboutthedata> and <http://www.crashmap.com/home/definitions>



APPENDIX MPH2

Accident Date BETWEEN '31-Dec-2003' AND '30-Dec-2013'

No.	Area L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street				
1	W060000006	05WR7065	Slight	Wednesday	14/09/2005	08:30	330170/343884						
Location: B5097 Church Street, Ruabon, 1st Rd: B5097 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting		Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard			
30 MPH	Single	c'way NotJCT	Daylight		Fine	Wet	None	None	None	None			
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Taxi	No	Going ahead	W E	On main	Not at	No	None		None	Male	33	N/R
Cas	NoVeh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School	Pupil		
1	1	Pedestrian	Male	12	Slight	No	North	Unknown	On footway	Other			
Description: Veh1 Clipped Pedestrian Who was Walking Half on and Half off Pavement.													
User Information:													
2	W060000006	RC08131845	Slight	Monday	14/07/2008	08:50	329910/343999						
Location: B5097 Pont Adam, Ruabon, Wrexham 1st Rd: B5097 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting		Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard			
30 MPH	Single	c'way NotJCT	Daylight		Fine	Dry	None	None	None	None			
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	SE NW	On main	Not at	No	None		None	Female	28	N/C
Cas	NoVeh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School	Pupil		
1	1	Pedestrian	Male	12	Slight	No	North west	Back	c'way not c	Yes			
Description: Vehicle 1 Wing Mirror Collides with Child Pedestrian Walking in Road.													
User Information:													
3	W060000006	RC09054238	Slight	Thursday	26/03/2009	15:15	329724/344106						
Location: Pen-Y-Cae Road 20 Metres South East of Tatham Road, Ruabon, Wrexham 1st Rd: B5097 2nd Rd: U													
Speed	C'Way	Jct Det/Ctrl	Lighting		Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard			
30 MPH	Single	c'way T/Stag Give	Daylight		Unknown	Wet	None	None	None	None			
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Lt hand ben	SE NW	On main	Junt appr	No	None		None	Female	30	N/C
Cas	NoVeh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School	Pupil		
1	1	Pedestrian	Male	14	Slight	No	North west	Unknown	On footway	Yes			
Description: Veh1 Travelling from School Towards Ruabon Has Clipped Pedestrian with Wing Mirror as Road Narrows.													
User Information:													
4	W060000006	RC09131979	Slight	Wednesday	15/07/2009	15:10	329933/343987						
Location: B5097 50 Metres East of Pont Adam Crescent, Ruabon, Wrexham 1st Rd: B5097 2nd Rd:													
Speed	C'Way	Jct Det/Ctrl	Lighting		Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard			
30 MPH	Single	c'way NotJCT	Daylight		Fine	Dry	None	None	None	None			
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/T
1	Car	No	Going ahead	W E	On main	Not at	No	None		None	Male	30	N/C
Cas	NoVeh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School	Pupil		
1	1	Pedestrian	Male	13	Slight	No	Stand	Back	c'way not c	Other			
Description: Passing Veh1 Has Clipped Pedestrian Walking in Road (No Pavement). Veh1 Has Stopped but Not Provided Details.													
User Information:													



APPENDIX MPH3

Pont Adam ATC

Produced by PCC Traffic Information Consultancy Ltd.

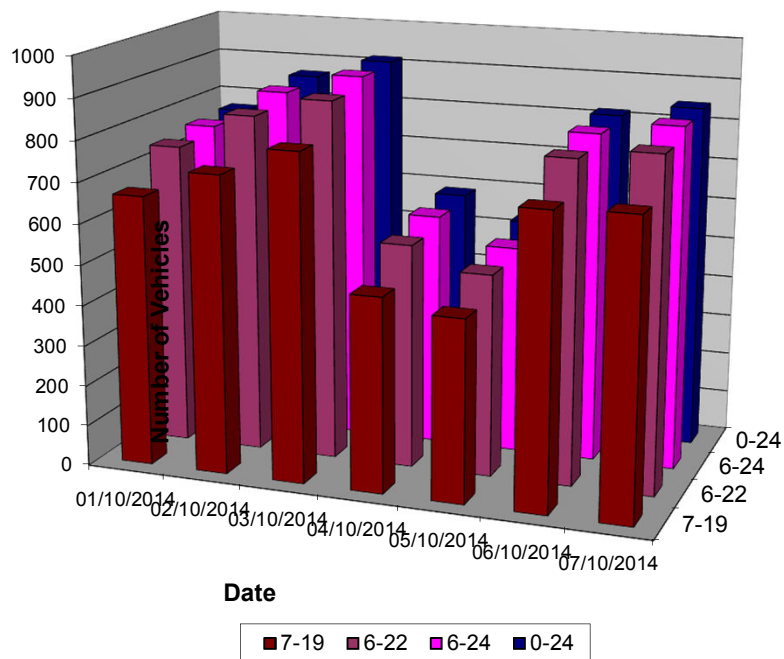
Channel 1 - Westbound

Vehicle Flow

Week 1

Hr Ending	01/10/2014 Wednesday	02/10/2014 Thursday	03/10/2014 Friday	04/10/2014 Saturday	05/10/2014 Sunday	06/10/2014 Monday	07/10/2014 Tuesday	5 Day Ave	7 Day Ave
1	3	3	3	6	5	5	2	3	4
2	0	1	0	2	3	0	1	0	1
3	0	1	0	2	5	0	1	0	1
4	0	0	2	0	2	1	0	1	1
5	0	1	0	0	2	0	1	0	1
6	3	2	1	1	1	2	2	2	2
7	4	4	3	2	0	4	7	4	3
8	10	22	34	9	7	29	35	26	21
9	94	115	128	18	6	150	125	122	91
10	18	32	37	26	38	30	36	31	31
11	20	30	42	45	53	42	46	36	40
12	30	45	36	54	42	41	38	38	41
13	30	59	49	56	58	42	37	43	47
14	50	47	39	36	35	35	37	42	40
15	63	84	88	54	41	73	54	72	65
16	95	64	83	40	50	65	78	77	68
17	76	102	66	47	38	74	79	79	69
18	105	77	114	47	42	74	82	90	77
19	74	55	85	45	36	58	72	69	61
20	43	47	39	32	26	36	41	41	38
21	18	32	21	31	11	15	28	23	22
22	15	19	19	9	14	20	18	18	16
23	11	18	16	12	8	17	21	17	15
24	4	6	10	12	8	3	5	6	7
7-19	665	732	801	477	446	713	719	726	650
6-22	745	834	883	551	497	788	813	813	730
6-24	760	858	909	575	513	808	839	835	752
0-24	766	866	915	586	531	816	846	842	761

Vehicle Flow (Channel 1)



Pont Adam ATC

Produced by PCC Traffic Information Consultancy Ltd.

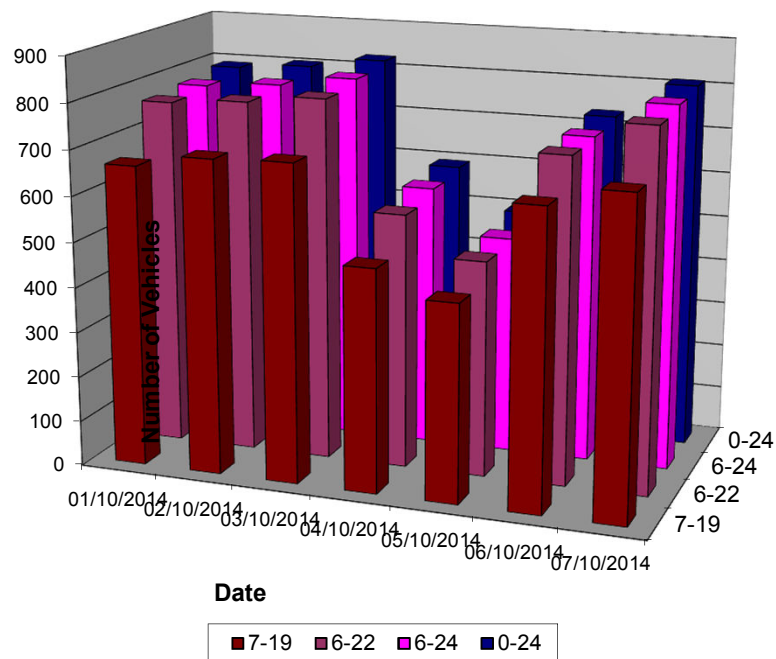
Channel 2 - Eastbound

Vehicle Flow

Week 1

Hr Ending	01/10/2014 Wednesday	02/10/2014 Thursday	03/10/2014 Friday	04/10/2014 Saturday	05/10/2014 Sunday	06/10/2014 Monday	07/10/2014 Tuesday	5 Day Ave	7 Day Ave
1	2	1	2	7	8	5	1	2	4
2	2	0	0	1	3	0	0	0	1
3	0	0	0	2	1	0	0	0	0
4	0	0	3	0	4	0	1	1	1
5	2	5	2	0	1	0	1	2	2
6	8	8	6	2	1	6	7	7	5
7	17	20	11	3	4	17	16	16	13
8	55	59	50	12	7	38	49	50	39
9	101	115	115	29	12	145	114	118	90
10	50	49	51	43	46	33	47	46	46
11	50	43	44	54	52	37	47	44	47
12	48	46	50	65	73	50	38	46	53
13	48	34	49	41	48	41	37	42	43
14	43	47	30	48	26	40	46	41	40
15	48	56	53	35	35	45	57	52	47
16	61	73	78	46	32	75	75	72	63
17	64	65	64	37	34	68	61	64	56
18	46	60	55	38	37	50	62	55	50
19	50	45	58	42	32	28	58	48	45
20	46	35	61	33	19	27	50	44	39
21	19	13	14	22	9	13	21	16	16
22	23	21	16	14	10	9	12	16	15
23	8	6	9	12	5	4	10	7	8
24	0	2	5	7	2	1	1	2	3
7-19	664	692	697	490	434	650	691	679	617
6-22	769	781	799	562	476	716	790	771	699
6-24	777	789	813	581	483	721	801	780	709
0-24	791	803	826	593	501	732	811	793	722

Vehicle Flow (Channel 2)





APPENDIX MPH4

Site 1: B5097 Pont Adam/Pont Adam Cres. (West)

Day: Thursday

Date: 8 January 2015

Weather: Dry with Sunny Periods

A: B5097 Pont Adam (East)

B: Pont Adam Crescent (West)

C: B5097 Pont Adam (West)

A - B									A - C								
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total		Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
07:30	0	0	0	0	0	0	0	0		4	0	0	0	0	0	0	4
07:45	0	0	0	0	0	0	0	0		11	0	0	0	0	0	0	11
08:00	2	0	0	0	0	0	0	2		18	1	1	0	0	0	1	21
08:15	0	0	0	0	0	0	0	0	2	27	0	0	0	0	0	0	27
08:30	2	1	0	0	0	0	0	3	5	59	0	0	0	0	0	0	59
08:45	1	0	0	0	0	0	0	1	6	30	0	0	0	0	0	2	32
09:00	2	0	0	0	0	0	0	2	6	15	2	1	0	0	0	0	18
09:15	3	0	0	0	0	0	0	3	9	9	0	0	0	0	0	1	10
Total	10	1	0	0	0	0	0	11		173	3	2	0	0	0	4	182

15:00	5	1	0	0	0	0	0	6		22	3	0	0	0	0	3	28
15:15	2	0	0	0	0	0	0	2		11	0	0	0	0	0	0	11
15:30	0	0	0	0	0	0	0	0		11	1	0	0	0	0	0	12
15:45	3	1	0	0	0	0	0	4	12	13	0	0	0	0	0	0	13
16:00	5	1	0	0	0	0	0	6	12	13	3	0	0	0	0	1	17
16:15	1	0	0	0	0	0	0	1	11	9	2	0	0	0	0	0	11
16:30	0	0	0	0	0	0	0	0	11	6	0	0	0	0	0	0	6
16:45	2	0	0	0	0	0	0	2	9	5	2	0	0	0	0	0	7
17:00	3	0	0	0	0	0	0	3	6	6	0	0	0	0	0	0	6
17:15	2	0	0	0	0	0	0	2	7	13	1	0	0	0	0	0	14
17:30	5	0	0	0	0	0	0	5	12	23	1	0	0	1	0	0	25
17:45	1	0	0	0	0	0	0	1	11	12	0	0	0	0	0	0	12
Total	29	3	0	0	0	0	0	32		144	13	0	0	1	0	4	162

B - A

B - C

Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total		Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	
07:30	1	0	0	0	0	0	0	1		0	0	0	0	0	0	0	0	
07:45	2	0	0	0	0	0	0	2		2	0	0	0	0	0	0	2	
08:00	2	0	0	0	0	0	0	2		0	0	0	0	0	0	0	0	
08:15	3	0	0	0	1	0	0	4	9	0	0	0	0	0	0	0	0	2
08:30	4	0	0	0	0	0	0	4	12	1	0	0	0	0	0	1	2	4
08:45	4	0	0	0	0	0	0	4	14	0	0	0	0	0	0	0	0	2
09:00	1	0	0	0	0	0	0	1	13	2	1	0	0	0	0	0	3	5
09:15	2	0	0	0	0	0	0	2	11	0	0	0	0	0	0	0	0	5
Total	19	0	0	0	1	0	0	20		5	1	0	0	0	0	1	7	

15:00	7	0	0	0	0	0	0	7		3	1	0	0	0	0	0	4	
15:15	1	0	0	0	0	0	1	2		0	0	0	0	0	0	0	0	
15:30	2	0	0	0	0	0	0	2		0	0	0	0	0	0	0	0	
15:45	1	0	0	0	0	0	0	1	12	1	1	0	0	0	0	0	2	6
16:00	3	0	0	0	0	0	1	4	9	3	0	0	0	0	0	0	3	5
16:15	1	0	0	0	0	0	0	1	8	2	1	0	0	0	0	0	3	8
16:30	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	1	9
16:45	1	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	7
17:00	1	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	1	5
17:15	3	0	0	0	0	0	1	4	6	2	0	0	0	0	0	0	2	4
17:30	1	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	3
17:45	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	3
Total	21	0	0	0	0	0	3	24		13	3	0	0	0	0	0	16	

C - A

C - B

Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total		Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	
07:30	7	2	0	0	0	0	0	9		0	0	0	0	0	0	0	0	
07:45	7	3	1	0	1	0	0	12		0	0	0	0	0	0	0	0	
08:00	14	1	0	0	0	0	0	15		0	0	0	0	0	0	0	0	
08:15	16	1	0	0	0	0	0	17	53	0	0	0	0	0	0	0	0	0
08:30	38	1	1	0	0	0	0	40	84	1	0	0	0	0	0	1	2	2
08:45	19	1	0	0	0	0	0	20	92	0	0	0	0	0	0	0	0	2
09:00	6	1	0	0	0	0	0	7	84	0	0	0	0	0	0	0	0	2
09:15	7	0	0	0	0	0	0	7	74	1	0	0	0	0	0	0	1	3
Total	114	10	2	0	1	0	0	127		2	0	0	0	0	0	1	3	

15:00	30	2	0	0	0	0	0	32		3	0	0	0	0	0	0	3	
15:15	8	3	0	0	0	0	0	11		0	0	0	0	0	0	0	0	
15:30	13	1	0	0	0	0	0	14		1	0	0	0	0	0	0	1	
15:45	11	1	0	0	0	0	0	12	69	2	0	0	0	0	0	0	2	6
16:00	22	1	0	0	0	0	1	24	61	3	0	0	0	0	0	0	3	6
16:15	12	2	0	0	0	0	0	14	64	2	0	0	0	0	0	0	2	8
16:30	9	3	0	0	0	0	0	12	62	2	0	0	0	0	0	0	2	9
16:45	12	0	0	0	0	0	0	12	62	2	0	0	0	0	0	0	2	9
17:00	6	1	0	0	0	0	0	7	45	2	0	0	0	0	0	0	2	8
17:15	14	1	0	0	0	0	0	15	46	2	0	0	0	0	0	0	2	8
17:30	23	2	0	0	0	0	1	26	60	1	0	0	0	0	0	0	1	7
17:45	15	0	0	0	0	0	0	15	63	1	0	0	0	0	0	0	1	6
Total	175	17	0	0	0	0	2	194		21	0	0	0	0	0	0	21	

Site 2: B5097 Pont Adam/Pont Adam Cres. (East)

Day: Thursday

Date: 8 January 2015

Weather: Dry with Sunny Periods

A: B5097 Pont Adam (East)

B: Pont Adam Crescent (East)

C: B5097 Pont Adam (West)

A - B									A - C								
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total		Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
07:30	2	0	0	0	0	0	0	2		4	0	0	0	0	0	0	4
07:45	0	0	0	0	0	0	0	0		10	0	0	0	0	0	0	10
08:00	1	3	0	0	0	0	1	5		20	0	1	0	0	0	1	22
08:15	1	0	0	0	0	0	0	1	8	25	0	0	0	0	0	0	25
08:30	2	1	0	0	0	0	0	3	9	61	1	0	0	0	0	0	62
08:45	2	1	0	0	0	0	0	3	12	30	0	0	0	0	0	2	32
09:00	3	1	0	0	0	0	1	5	12	16	1	1	0	0	0	0	18
09:15	6	0	0	0	0	0	0	6	17	11	0	0	0	0	0	1	12
Total	17	6	0	0	0	0	2	25		177	2	2	0	0	0	4	185

61

119

141

137

124

15:00	4	0	0	0	0	0	0	4		26	4	0	0	0	0	3	33
15:15	6	0	1	0	0	0	1	8		12	0	0	0	0	0	0	12
15:30	5	0	0	0	0	0	0	5		10	1	0	0	0	0	0	11
15:45	4	0	0	0	0	0	0	4	21	16	1	0	0	0	0	0	17
16:00	6	0	0	0	0	0	1	7	24	18	4	0	0	0	0	1	23
16:15	3	1	0	0	0	0	0	4	20	8	2	0	0	0	0	0	10
16:30	6	0	0	0	0	0	0	6	21	6	0	0	0	0	0	0	6
16:45	8	1	0	0	0	0	1	10	27	7	2	0	0	0	0	0	9
17:00	6	1	0	0	0	0	0	7	27	8	0	0	0	0	0	0	8
17:15	10	0	0	0	0	0	0	10	33	15	1	0	0	0	0	0	16
17:30	1	0	0	0	0	0	0	1	28	27	1	0	0	1	0	0	29
17:45	6	0	0	0	0	0	0	6	24	13	0	0	0	0	0	0	13
Total	65	3	1	0	0	0	3	72		166	16	0	0	1	0	4	187

73

63

61

56

48

33

39

62

66

B - A

B - C

Time	Car	LGV	OGVI	OGV2	P/C	M/C	PSV	Total		Car	LGV	OGVI	OGV2	P/C	M/C	PSV	Total	
07:30	5	0	0	0	0	0	0	5		0	0	0	0	0	0	0	0	
07:45	8	0	0	0	0	0	0	8		1	0	0	0	0	0	0	1	
08:00	7	1	0	0	0	0	0	8		0	1	0	0	0	0	0	1	
08:15	5	1	0	0	0	0	1	7	28	2	0	0	0	0	0	0	2	4
08:30	9	0	0	0	0	0	0	9	32	0	0	0	0	0	0	0	0	4
08:45	5	1	0	0	0	0	0	6	30	1	0	0	0	0	0	0	1	4
09:00	4	0	0	0	0	0	0	4	26	1	1	0	0	0	0	0	2	5
09:15	6	0	0	0	0	0	1	7	26	1	0	0	0	0	0	0	1	4
Total	49	3	0	0	0	0	2	54		6	2	0	0	0	0	0	8	

15:00	4	0	0	0	0	0	0	4		1	0	0	0	0	0	0	1	
15:15	3	0	0	0	0	0	0	3		1	0	0	0	0	0	0	1	
15:30	2	0	0	0	0	0	0	2		1	0	0	0	0	0	0	1	
15:45	4	0	0	0	0	0	0	4	13	0	0	0	0	0	0	0	0	3
16:00	2	0	0	0	0	0	0	2	11	0	0	0	0	0	0	0	0	2
16:15	0	1	0	0	0	0	0	1	9	2	0	0	0	0	0	0	2	3
16:30	1	0	0	0	0	0	0	1	8	1	0	0	0	0	0	0	1	3
16:45	6	0	0	0	0	0	0	6	10	0	0	0	0	0	0	0	0	3
17:00	1	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	3
17:15	1	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	1
17:30	2	0	0	0	0	0	0	2	10	1	0	0	0	0	0	0	1	1
17:45	8	0	0	0	0	0	0	8	12	0	0	0	0	0	0	0	0	1
Total	34	1	0	0	0	0	0	35		7	0	0	0	0	0	0	7	

C - A

C - B

Time	Car	LGV	OGVI	OGV2	P/C	M/C	PSV	Total		Car	LGV	OGVI	OGV2	P/C	M/C	PSV	Total	
07:30	8	2	0	0	0	0	0	10		0	0	0	0	0	0	0	0	
07:45	9	3	1	0	1	0	0	14		0	0	0	0	0	0	0	0	
08:00	16	1	0	0	0	0	0	17		0	0	0	0	0	0	0	0	
08:15	19	1	0	0	1	0	0	21	62	0	0	0	0	0	0	0	0	0
08:30	42	1	1	0	0	0	0	44	96	0	0	0	0	0	0	0	0	0
08:45	23	1	0	0	0	0	0	24	106	0	0	0	0	0	0	0	0	0
09:00	7	1	0	0	0	0	0	8	97	0	0	0	0	0	0	0	0	0
09:15	8	0	0	0	0	0	0	8	84	1	0	0	0	0	0	0	1	1
Total	132	10	2	0	2	0	0	146		1	0	0	0	0	0	0	1	

15:00	36	2	0	0	0	0	0	38		1	0	0	0	0	0	0	1	
15:15	8	1	0	0	0	0	1	10		1	2	0	0	0	0	0	3	
15:30	14	1	0	0	0	0	0	15		1	0	0	0	0	0	0	1	
15:45	11	1	0	0	0	0	0	12	75	1	0	0	0	0	0	0	1	6
16:00	24	1	0	0	0	0	2	27	64	1	0	0	0	0	0	0	1	6
16:15	13	2	0	0	0	0	0	15	69	0	0	0	0	0	0	0	0	3
16:30	8	3	0	0	0	0	0	11	65	1	0	0	0	0	0	0	1	3
16:45	13	0	0	0	0	0	0	13	66	0	0	0	0	0	0	0	0	2
17:00	7	1	0	0	0	0	0	8	47	0	0	0	0	0	0	0	0	1
17:15	17	1	0	0	0	0	1	19	51	0	0	0	0	0	0	0	0	1
17:30	24	2	0	0	0	0	1	27	67	0	0	0	0	0	0	0	0	0
17:45	14	0	0	0	0	0	0	14	68	1	0	0	0	0	0	0	1	1
Total	189	15	0	0	0	0	5	209		7	2	0	0	0	0	0	9	