



MetroWest+

Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

9.34.1 ExA.CWR.D5.V1 – Applicant's response to Deadline 4 submission of ETM Contractors Ltd and Manheim Auctions Ltd (REP4-050)

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Extracts from 'TR040011-001114-Sutherland Property & Legal Service Ltd on behalf of CTC and SPLS.pdf'

Ref	Text	Applicant response
Enc 1: CTC Response to action point 23 (11/01/21) – 1. Introduction		
1.1	cTc is commissioned jointly by two businesses currently located in the Ashton Vale Business Park, South Bristol. Plans being promoted jointly by Bristol City Council and North Somerset Council (the latter being formally "The Applicant") for the Bristol Metro include running on the former heavy rail line between Portishead and Bristol City Centre, which crosses the only point of access to the Ashton Vale Business Park and will thereby require an increased frequency of closures of the level crossing, each time temporarily closing the only access to / egress from the business park.	No response needed.
1.2	Womble Bond Dickenson, on behalf of the promoters of the Metro scheme have presented a response to cTc's joint submission with Sutherland Planning and Legal Services' (SPLS) Written Representations submitted at Deadline 2. This Technical Note provides a response to the Applicant's response at Deadline 3 and takes the opportunity to pick up on matters raised verbally during the Hearing on Monday 11th and Tuesday 12th January 2021.	No response needed.
1.3	Although submitted as a Womble Bond Dickenson (UK) LLP document, the response actually comprises a Memorandum by Jacobs, formally ch2m. cTc's earlier submissions, including jointly with SPLS were in response to ch2m submissions.	The document was submitted on behalf of the Applicant. It is not a Womble Bond Dickinson document. The authors are suitably qualified experts from Jacobs.
1.4	In their response at Deadline 3, the Jacobs memorandum discussed three matters from cTc's earlier submissions. These comprised; • Traffic Data; • Model Validity; and • Impact of Closure.	No response needed.
1.5	In addition, at the Hearing of 12th January, the Applicant questioned whether cTc had considered the Applicant's submission at Appendix N of the Transport Assessment. From cTc's earlier submissions it is clear that the model is seriously flawed. The letter from Carl Tonks of cTc to Amanda Sutherland of SPLS, dated 7th March 2018 clearly states that no forensic analyses of the model is appropriate unless and until fundamental issues are addressed. Those fundamental issues have not been addressed, hence cTc's position remains that the model is demonstrably unfit for purpose, hence no weight can be given to conclusions drawn from it.	<p>Appendix N of the Transport Assessment (APP-172; DCO document reference 6.25) contained new information, including comparisons of May 2017 and March 2018 counts (as well as comparison with other traffic counts of the junction from 2014 onwards), which sought to address concerns raised early in the process by cTc. However, this does not appear to have been considered fully in cTc's recent or previous representations.</p> <p>The Applicant does not accept the criticisms made by cTc regarding the traffic data and the modelling and believes the model is fit for purpose. Further comments are provided below in response to cTc's specific criticisms, where applicable, but in summary the data and modelling is considered to be robust for the following reasons:</p> <p>1. The non-availability of the short (circa 20m) left turn filter lane during the works would have had very limited impact on the capacity of this arm,</p>

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		<p>and thus has no impact on the data, as the left turn movement was still fully available;</p> <p>2. Ashton Vale Road is the only access route into and out of the industrial estate. Traffic must use the Ashton Vale Road/Winterstoke Road Junction to access the industrial estate ,so there will have been no impact on volumes going to and coming from the industrial estate;</p> <p>3. The impact on operational conditions of the temporary works situation lights has been considered and allowed for in the modelling through the omission of the Winterstoke Road left turn flare during VISSIM model validation;</p> <p>4. The May 2017 data used for the modelling has subsequently been compared with surveys (including Manual Classified Counts (MCC) and Automatic Traffic Counts (ATC)) from 2014, 2015, 2016 and 2018, which shows consistent volumes and patterns and thus validates the May 2017 traffic count (see ES Appendix N, Part 2 'Ashton Value Road Traffic Counts' (APP-172; DCO document reference 6.25));</p> <p>5. The VISSIM model has been calibrated to observed turning movements and validated to observed journey times with the degree of fit for both of these compliant with national standards on model development (Transport Analysis Guidance 'TAG' and TfL Traffic Modelling Guidelines (see ES Appendix N, Part 5 'MetroWest Phase 1, Winterstoke Road/Ashton Vale Road VISSIM Model, Local Model Validation Report' (APP-172; DCO document reference 6.25))); and</p> <p>6. The assessment of the MetroWest Phase 1 scheme has been carried out in a robust manner using appropriate modelling tools which are able to model in real time the impact of level crossing closures and the response of the signals and resulting impacts (see ES Appendix N, Part 5 'MetroWest Phase 1, Winterstoke Road/Ashton Vale Road VISSIM Model, Testing Report' (APP-172; DCO document reference 6.25));).</p>

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1.6	<p>The above issues are addressed in turn, below, where it will be demonstrated that Jacobs have still failed to address the fundamental issues with the model which have been raised by cTc consistently since early 2018.</p>	<p>cTc refer to a single model in paragraphs 1.5 and 1.6. Again, it is reiterated that the impact of the scheme on Ashton Vale Road has been carried out using two different pieces of software (so models) both of which demonstrate no severe impact of the scheme on Ashton Vale Road (see ES, Appendix N, Parts 4 and 5 (APP-172; DCO document reference 6.25)). The Applicant has been consistent in making it clear to cTc over several years that it believes cTc's criticisms are without merit.</p>
1.7	<p>To be clear, the position of cTc, SPLS and our joint clients is and always has been that the Metro is needed in Bristol and should provide a positive input to the City, from which all should benefit, including local employers. However, it must be delivered in such a way as not to harm existing businesses and business areas within the City, including particularly those identified in Policy as important to the City's well-being, hence protected. The modelling submitted by Jacobs on behalf of the Applicant is unreliable and currently fails to demonstrate this.</p>	<p>See Applicant's response to para 1.5 above.</p>
1.8	<p>cTc has repeatedly stated that the experience of our clients using the junction of Ashton Vale Road with Winterstoke Road on a daily basis is different from that suggested in the submitted modelling. The junction is already congested and it is not unusual for queues on Ashton Vale Road not to clear the junction in a single signal cycle. This is not reflected in the submitted models and cTc's previous representations have suggested likely causes of the clear problems with the traffic models upon which the Applicant relies.</p>	<p>There is no basis on which cTc make the claim that the model does not reflect the conditions stated. The modelling work already presented proves the statement cTc made is incorrect. For example, Figure D8 of the ES, Appendix N, Part 5 (APP-172; DCO document reference 6.25) shows that during the PM queues are up to nearly 100m (some 17-20 car lengths) in the Do Nothing (DN) (no freight) scenario. Since Ashton Vale Road can only receive 24s green time (Max) in the PM, which would pass approx. 10-12 cars, this clearly demonstrates that some vehicles in the model would not pass through the signals in one cycle.</p> <p>The introduction of MOVA will deliver a general betterment in terms of junction operation with the DCO Scheme therefore providing a benefit to cTc's clients compared to the existing situation. For example, early site trials by TRL showed that MOVA was able to deliver a 13% reduction in delay compared to Vehicle Actuation (VA) (TRL, Research Report 279). Elsewhere, work by Meehan (2003) showed that MOVA increases capacity compared to VA by 2.78% (Traffic Engineering and Control, September 2003).</p>

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Enc 1: CTC Response to action point 23 (11/01/21) – 2. Traffic data		
2.1	In response to cTc's criticism that the traffic models had been constructed on the basis of traffic data collected at a time when a critical lane was closed to traffic due to substantial road works within the junction, Jacobs have sought to rely on Transport Analysis Guidance (TAG) Unit M1.2 (Data Sources and Surveys).	TAG was simply referred to in order to support the use of an MCC carried out on a single day and nothing more. As set out in the response to 1.5 above, the Applicant is fully satisfied that the traffic data used in the modelling was robust and reflective of typical weekday AM and PM flows and conditions.
2.2	The thrust of Unit M1.2 is to ensure that data collected for construction of traffic models is fit for purpose. This is an appropriate source of guidance and in reality, much of what is contained within Unit M1.2 comprises common sense. The purpose of Unit M1.2 is to ensure that the collected traffic data accurately represents typical traffic conditions, in order to ensure that what the subsequent traffic model is attempting to replicate is in fact appropriate and representative. In order to reflect on the importance of acquiring not only accurate, but relevant base data, it is helpful to consider the basics of the traffic modelling process. In simple, non-technical terms, the process comprises; 1. Collect data of representative traffic demand across a network; 2. Create a model network of the existing physical transport infrastructure within the study area; 3. Apply the collected demand data to the modelled network; 4. Compare the modelled traffic characteristics with independent observations and adjust the model to reduce any discrepancies (calibration); 5. Compare the modelled output with independent observations to confirm accuracy and relevance (validation); 6. Forecast future year changes to demand; 7. Apply future forecast demand to the existing network to provide a future baseline; 8. Modify the network to reflect future proposals; and, 9. Re-apply the same demand matrices to forecast future network operation.	To clarify, calibration involves adjustments to a model to improve the fit with data used in the model development, whereas validation is the comparison of model output with data that was not used in its development. With respect to Point 4, TAG Unit M3.1 (May 2020) says nothing about data used in model calibration needing to be 'independent'. Para 3.1.1 states "Any adjustments to the model intended to reduce the differences between modelled and observed data should be regarded as calibration . Validation simply involves comparing modelled and observed that is <u>independent</u> from that used in calibration." This point is further reinforced by the TfL Traffic Modelling Guidelines (v3) which, whilst written for London, is used extensively by traffic modellers up and down the country. This states (para 2.5.2) "Calibration describes the process of placing verifiable data into a traffic model to replicate observed street conditions" and "Calibration may require the adjustment of model parameters to recreate observed behaviour", whilst "Validation is the process of comparing model output against independently measured data that was not used during the calibration process" (para 2.5.3).
2.3	From the above summary it is clear that both the accuracy and relevance of the baseline data collection is critical if the model is to provide a reliable tool for forecasting. Data which is inaccurate or reflects a scenario which is not relevant will clearly and inevitably harm the reliability of the model.	For the reasons given in the response to para 1.5, the Applicant considers the modelling to be accurate and the testing using the models fully robust.
2.4	The data collected for use in the traffic models compiled and relied upon by the Applicants comprised a mixture of Manual Classified Counts (MCC) and Automatic Traffic Counts (ATC). The MCC comprise short-term detailed data collection of individual vehicle turning movements, whilst the ATC comprises longer term data indicating traffic flows on a link. Whilst cTc agrees that a combination of MCC and ATC data sources is appropriate, it is essential to ensure that neither technique is	The Applicant believes that there is no compromising of the modelling for the reasons stated in in the response to para 1.5 above.

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	compromised by external influences, or the residual reliability of the model will be compromised.	
2.5	At Section 2.1.2, the Jacobs memorandum confirms that the "Traffic data employed in the Linsig modelling and the calibration of the VISSIM model was based on a survey carried out on Tuesday 9th May 2017." Previous submissions have identified that the VISSIM matrices were constructed based on this survey data, hence it would appear to have been used for more than simply calibrating the model, but constructing it. Much has been made by Jacobs (and formerly by ch2m) in regard to the model calibration and validation and, whilst acknowledging that these are critical components of creating and confirming relevance of a model, cTc is of the view that many of the comments submitted to PINS in this regard have been misleading.	As noted above in response to para 2.2, TAG Unit M3.1 and the TfL Traffic Modelling Guidelines make it very clear that traffic data used in the development of model matrices can also be used in the process of model calibration. CH2M/Jacobs have not sought to mislead. The traffic data and modelling work presented in ES Appendix N (APP-172; DCO document reference 6.25) presents the facts based on observed data, with the modelling carried out as purely a technical and objective exercise. As noted in the response to para 1.5, the traffic data has been proven to be sound. The models used to assess the scheme have been developed in accordance with national technical guidelines and calibrated/validated to observed data meeting acceptability criteria.
2.6	In order to provide confidence in a model's accuracy and reliability, calibration and validation should be undertaken using independent data sets. From the claims made by Jacobs, this does not appear to have been the case and it appears the model has been constructed from, calibrated against and validated against the same turning count. It is acknowledged that ATC data has been sourced to back up the modellers' claims of relevance of this data, but from the data submitted there appears to have been no independent check of traffic turning counts undertaken and, despite cTc's representations, the model continues to rely on a single turning count of 9th May 2017, when the junction was subject to substantial traffic management due to construction works. This is wholly inappropriate.	As set out in the LMVR for the VISSIM model (ES Appendix N, Part 5, 'MetroWest Phase 1, Winterstoke Road/Ashton Vale Road VISSIM Model, Local Model Validation Report' (APP-172; DCO document reference 6.25)) the model was calibrated against observed turning flows, whilst validation was carried out through a comparison of modelled and observed journey times. The journey time data did not form part of the calibration process and so this data was independent. This is the standard approach (see response to 2.2 above). With regard to the point on the traffic data, as set out in the response to para 1.5, the validity of the traffic data used in the modelling cannot be disputed and has been proven to sound.
2.7	The summary above, at Paragraph 2.2, confirms that the approach to traffic modelling is to ensure a model's accuracy by collecting as much verified and verifiable data as possible, in order to ensure that assumptions, adjustments and forecasts represent a smaller influence on the modelled output than observed and verified data. The process comprises modelling a "normal" situation against which the model is verified, whereas in this instance it is confirmed that Jacobs have modelled an abnormal situation comprising a junction operating under abnormal constraint due to a critical lane being closed due to roadworks. That has required an additional step to be introduced into the modelling process in order to "create" a representative model	As noted in the response to para 1.5, a substantial body of traffic data exists to support the modelling and the data used, and for the reasons given in the same response the MetroBus works had no impact on traffic flows.

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	<p>scenario, hence adding in uncertainty. In view of the considerable congestion typically experienced by cTc's clients when leaving the Ashton Vale Estate and this not being portrayed in the submitted model, no credence or reliability can be placed upon the model results.</p>	
2.8	<p>cTc identified and Jacobs acknowledge that a northbound left turn lane into the Ashton Vale Industrial Estate was closed at the time of their surveys and this was initially dismissed on the basis that the enumerators considered it had no impact on traffic flows or junction usage. Key questions arise here; • Who were the enumerators? • What knowledge or experience did the enumerators have of the operation of this junction outwith times of substantial roadworks? And consequently; • How are the enumerators qualified to make this judgement?</p>	<p>The May 2017 counts were carried out using CCTV cameras, with the footage being processed by North Somerset Council enumerators. The survey was managed by Mr Lovell (North Somerset Council's Traffic Data Unit Manager), who observed traffic on the ground at the time (and subsequently using CCTV footage) and also participated in journey time surveys.</p> <p>Mr Lovell has provided a brief statement on this survey, both from his personal recollections and from a review of his records. This statement is appended at Appendix 1 to this document.</p>
2.9	<p>cTc finds it more than simply surprising that Jacobs continue to claim that these road works were of no impact. At Photograph 1, below is an image extracted from Google Streetview at April 2017; broadly the time of the surveys on which the VISSIM and Linsig models have relied. It is unconscionable that roadworks on this scale, requiring left turning Ashton Vale traffic to share a lane with ahead traffic, towards Long Ashton could not have impacted upon the convenience of accessibility of Ashton Vale Industrial Estate. This therefore adds significant doubt as to the reliability of traffic survey data, either counts or journey times, collected during these roadworks.</p>	<p>For the reasons given in the response to para 1.5 above, the traffic data is sound.</p>

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	 <p>Photograph 1; Google Streetview extract from the time of the MCC survey, illustrating the significant roadworks in situ at that time</p>	
<p>2.10</p>	<p>In the first Paragraph of Section 2.1.2, Jacobs identify that they had sought to validate the MCC data collected on Tuesday 19th May 2017, with data from “...an ATC carried out between 15 – 28 March 2018 inclusive.” This statement triggers a number of important questions. Amongst which are specifically; • Given that individual movements through the junction in question are quite heavily segregated and the ATC can only have surveyed one movement, how has Jacobs ensured that the validation against ATC data has confirmed validity of all turning movements at the junction? And, • Were traffic conditions at the time of the ATC survey normal and representative?</p>	<p>The March 2018 counts captured all movements at the junction. However, for brevity, in ES Appendix N, Part 2 ‘MetroWest Phase 1, Ashton Vale Road Traffic Counts’ (APP-172; DCO document reference 6.25) comparisons were only made of the arm-based in-flows and exit flows, as well as overall junction in-flows. This analysis was considered to be more than sufficient to provide validation of the May 2017 turning count.</p>
<p>2.11</p>	<p>Similarly, Photograph 2, below is of the same location, but at July 2018, some 3 – 4 months after the ATC survey was undertaken to “validate” the above MCC survey. Although the substantive construction works requiring the lane closure prominent in Photograph 1 were complete, the fencing still present on the Direction Island confirms that some works remain ongoing.</p>	<p>The fencing referred to is not on the carriageway. Its presence will have had no impact at all on traffic flow.</p>

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	 <p>Photograph 2; Google Streetview extract from 3 – 4 months following the ATC survey</p>	
2.12	<p>If any credibility is to be given to these subsequent ATC surveys, it is essential that confirmation is provided of the mode in which the signals were operating. In particular, the location of the areas of works fencing suggest that work may have been ongoing in regard to either controller or detector works. cTc would wish to see definitive confirmation of the signal controller specification and operation at the time of the surveys in March 2018. In particular, were these representative of “normal conditions”. Evidence of this should be available from the Highway Authority, Bristol City Council.</p>	<p>For the reasons given in the response to 1.5 above the Applicant believes there was no impact of the MetroBus works on traffic volumes. ES Appendix N, Part 4, ‘MetroWest Phase 1 A3029 Winterstoke Road/Ashton Vale Road – LinSig Modelling’ (APP-172; DCO document reference 6.25) provides detail regarding the operation of the signals. Figure 2 shows the stage sequence. From this it can be see that the Winterstoke Road northbound left turn phase appears at the same time as the adjacent ahead movement (unless there is a level crossing closure or demand for the Ashton Vale Road pedestrian crossing). As such, no changes to the controller configuration would have been needed to account for the loss of the left turn flare during the MetroBus works.</p>
2.13	<p>A further close-up of the same junction, also at July 2018 is provided at Photograph 3, below and confirms that at that time the signal poles were only temporary installations, as road works were continuing at this location. cTc considers it unlikely that at this time the junction was operating in its fully optimised state, given the clear ongoing presence of works and this makes it essential that the full and detailed operation of this junction is confirmed before any weight is given to the model</p>	<p>See responses to paras 1.5 and 2.12 above. The traffic data used in the modelling is sound</p>

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	<p>output, as, for the reasons discussed above and previously presented to the DCO Hearing, cTc believes that the junction operation at the time of data collection was unlikely to have been reflective of normal conditions, hence the model should not have been based on this flawed data.</p>  <p>Photograph 3; Google Streetview extract from 3 – 4 months following the ATC survey – further close-up</p>	
2.14	<p>In regard to Jacobs' selected extracts from TAG, firstly, reference to TAG UNIT M1.2 as updated in May 2020 identifies different paragraph numbering from that quoted by Jacobs, which begs the question whether Jacobs is relying on an up to date copy of Government guidance. cTc accepts, however, that irrespective of this, the contents of TAG M1.2 are largely logical and sensible, hence minor discrepancies in paragraph numbering are not of themselves critical. Much is made by Jacobs of TAG's guidance in order to ensure that survey data is representative, including use of Monday to Thursday data in order to avoid potential Friday bias and validating single day MCC data with ATCs.</p>	<p>The response referred to by cTc was drafted in early May 2020, prior to the most recent update of TAG Unit M1.2 on the 29th May 2020. The reference was correct at the time of writing.</p>
2.15	<p>Given these discussions in TAG are targeted at ensuring that collected survey data is representative of "normal" traffic conditions, however, it is essential that, irrespective of survey methodology, traffic surveys are only carried out when traffic flows are unimpeded or not impacted in any way by unusual events or conditions. If the operating conditions under which traffic surveys are undertaken are not</p>	<p>No response needed.</p>

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	representative of "normal" conditions, then clearly, the collected data cannot be relied upon.	
2.16	Jacobs claim that "CTC's objection implies concern over the 'validity' of the May 2017 survey which is 'acknowledged' by Jacobs. This is not true." However, and to quote from the bottom of Page 2-1 (unnumbered para) of ch2m's Transport Assessment Appendix P (previously quoted in my letter of 7th March 2018, "Due to traffic management at the junction associated with the Ashton Vale to Temple Meads Metrobus scheme bridge construction, the left turn filter lane for Ashton Vale Road on the Winterstoke Road northbound carriageway was closed. Consequently, traffic entering Ashton Vale Road shared the 'Ahead' lane for Ashton Vale Underpass. This will have impacted on queue lengths and journey times for vehicles on this arm."	Whilst it is acknowledged that there will have been some small impact on operational conditions resulting from the closure of the left turn flare during the MetroBus works, for the reasons given in the response to para 1.5 above, this will not have materially affected traffic flow at the junction. Comparison with other data proves this to be the case.
2.17	cTc understands that Jacobs acquired ch2m during the promotion of this scheme and perhaps a difference of opinion is likely. However, ch2m undertook the modelling work now being defended by Jacobs and clearly acknowledged in regard to traffic turning from Winterstoke Road to Ashton Vale Road, that the 9th May 2017 surveys were not representative of "...queue lengths and journey times for vehicles on this arm".	Ch2M and Jacobs have used the same staff throughout this project
2.18	This presents a clear acknowledgement that traffic conditions on this movement were not representative of "normal" conditions and yet now Jacobs claim not to have acknowledged this. That a subsequent ATC survey, also apparently undertaken at a time when junction operation may not have been optimal due to the roadworks still being incomplete and temporary signal installations continuing to be employed at this junction, may have suggested little change in total vehicles entering the junction on a single through movement, does not validate the collected data sufficiently to rely on in regard to the critical matter of potentially cutting off a major employment asset.	See responses to paras 1.5 and 2.12 above. The traffic data used in the modelling is sound
2.19	cTc made clear by letter in March 2018 that the only credible solution was to repeat the MCC at the Ashton Vale / Winterstoke Road junction in order to permit the model matrices to be reconstructed using valid and representative data. Almost two years later, this has not been done and the highly questionable traffic surveys continue to be relied upon. Whilst it is accepted that implications of numerous COVID lockdowns have in recent months made traffic survey work questionable, and continue so to do, it is not the case that survey windows have been unavailable since cTc's first representation on this matter, in March 2018. Indeed, ch2m's further ATC survey was undertaken following submission of cTc's first critique and there is therefore no logical reason for Jacob's continued reliance on clearly compromised data in this model.	See responses to paras 1.5 and 2.12 above. Since the data is valid, there is no need to repeat the exercise as suggested by cTc.

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2.20	<p>In order to 'address' the above issue, Jacobs has constructed a model with the dedicated left turn lane (Winterstoke Road to Ashton Vale Road) closed, calibrated and validated this, then subsequently adjusted to reflect the normal situation; with a dedicated left turn lane and an ahead lane. This manual adjustment clearly acknowledges that, contrary to Jacobs' assurance discussed above, traffic characteristics during the surveys were not normal and the matter has sought to be addressed by manual adjustment of the model, subsequent to validation against an abnormal dataset. cTc maintains that that is a wholly inappropriate approach, which has resulted in a model on which no reliance can be placed. That TAG M1.2 places such emphasis on ensuring collection of traffic data from neutral periods confirms the importance of this issue.</p>	<p>Any model network must reflect the layout on-street of the highway at the time of data collection – whether this on-street layout is temporary or permanent. This ensures that the simulation reflects the capacity available in reality giving rise to of queuing and delay shown in the observed data. As such, the base VISSIM model <u>had</u> to include the removal of the Winterstoke Road northbound left turn flare, since the data used for model calibration and validation reflected network conditions with no left turn flare. Once model validation confirmed that the model was replicating these operational conditions and was thus validated, it is then perfectly legitimate to make changes to the network, including the reinstatement of the flare, and rely on the model to predict the effect of these changes.</p>
2.21	<p>There can be no doubt that the collected traffic data was flawed and Jacobs' efforts to justify and adjust to account for this are wholly inappropriate in light of the grave concerns expressed by occupiers of the Ashton Vale Industrial Estate; a key employment site on which Bristol is reliant.</p>	<p>See responses to paras 1.5 and 2.12 above. Contrary to cTc's suggestion, the Applicant is entirely satisfied that the exercise is robust.</p>
<p>Enc 1: CTC Response to action point 23 (11/01/21) – 3. Model Validity</p>		
3.1	<p>Jacobs criticise cTc for not having provided hard evidence for traffic conditions which vary from those claimed as prevalent in the Do Nothing model, however and as discussed at the DCO Hearing on 11th January, it is for the Applicant to provide information which adequately supports any submission. The Applicant is the "Agent of Change", whereas cTc's clients are simply seeking to protect their businesses against potentially significant loss if the Applicant's scheme were to go ahead in a manner which is inadequately controlled. It is inappropriate for the businesses occupying the Ashton Vale Industrial Estate to be required to fund consultants' reports for submission in rebuttal of clearly erroneous submissions in proposing the Agent of Change works, particularly at a time of unprecedented business pressure due to the combined impact of the COVID pandemic and BREXIT. However, and this notwithstanding, they have been required to do so. To suggest that further significant costs should have been encountered in regard to collection of reliable survey data when in fact it was entirely incumbent upon the Applicant to amass such reliable data is inappropriate in the extreme.</p>	<p>For the reasons given in the response to para 1.5 above, the Applicant is content that no additional modelling is needed and has made that position clear to cTc. It is therefore now for cTc to provide evidence to demonstrate why the professional opinion of Jacobs is not correct if cTc wishes to pursue this issue.</p> <p>The Applicant is not an agent of change given that the railway opened 1867. The Applicant, the local planning authority and local highway authority are all satisfied that, with the provision of mitigation secured by requirement, the junction will function as well as it currently does.</p> <p>It is the Applicant's view that, with the proposed mitigation, the change arising from the DCO Scheme, namely the introduction of MOVA control, will deliver a general improvement in junction operation (see response to para 1.8 above).</p>
3.2	<p>cTc attempted on numerous occasions to contact by telephone members of the Applicant's (NSC's) team, but each and every attempt was rebutted. Consequently attempts were made to contact the modelling team at ch2m, but once again, nobody</p>	<p>Jacobs (and CH2M) are not aware of any direct approaches to discuss the modelling.</p>

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	<p>was found willing to either meet or even enter into telephone discussions in regard to the submitted modelling. Further to these rebuttals, attempts were made to discuss the important issues arising with Planning and/or Transportation Officers of Bristol City Council. Once again, neither discussions nor meetings were made available. The intention had been to discuss the details of cTc's view in regard to the model's failings and included in those discussions would have been reference to the levels of queuing typically experienced on leaving the estate. However, in the absence of such a meeting, or telephone discussion and in the absence of considerably increasing client expenditure collecting data which should have been provided by the Appellant, it was inappropriate to expand further on cTc's entirely relevant and reasonable concerns.</p>	
3.3	<p>Suffice to say for the purposes of this submission that occupiers of the Ashton Vale Industrial Estate report frequently encountering significant queuing on exiting the estate. Colloquial evidence suggests that it is not unusual for vehicles to wait for more than one signal cycle before reaching the give way line and it should come as no surprise therefore that concern is expressed in regard to a proposal to increase the level crossing closure frequency.</p>	<p>The statement from cTc confirms that these issues are pre-existing. The issues may well be alleviated by the installation of a MOVA at the junction, as is required for the DCO Scheme (as noted in the response to para 1.8).</p>
3.4	<p>Much is made by Jacobs of the model's calibration and validation, according to TAG criteria. However, these claims should be viewed with a degree of caution. At Section 2.2.2, Jacobs confirm that "Operational conditions in the base VISSIM model were validated to journey times collected via moving car surveys carried out on 9th and 10th May 2017." This statement raises several significant causes for concern.</p>	<p>The Applicant does not accept that any concern is raised by the statement.</p>
3.5	<p>Firstly and as discussed above, on Page 2-1 of Transport Assessment Appendix P, ch2m confirm that "traffic entering Ashton Vale Road shared the 'Ahead' lane for Ashton Vale Underpass. This will have impacted on queue lengths and journey times for vehicles on this arm." Clearly, validating a model against journey time surveys which the modellers themselves have confirmed unrepresentative is not only careless, but wholly removes any weight which could otherwise have been given to the model's validity, had these surveys been undertaken at a representative time. The acceptability criteria stated in TAG M3.1 require journey-time surveys to have been representative and the above quotation from the Transport Assessment accepts they were not. The model validation is therefore faulty.</p>	<p>For the reasons given in the responses to paras 1.5 and 2.12 above, the journey time data used in the modelling is sound.</p>
3.6	<p>Jacobs continue to state that "...the base model outputs compare well with observed turning count and journey time data, in accordance with national guidelines on highway assignment modelling, these checks confirm that the models used in the assessment of Metrowest Phase 1 scheme at Ashton Vale Road reflect typical conditions at the site." Unfortunately, this sentence introduces a raft of new</p>	<p>This is not accepted by the Applicant.</p>

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Ref	Text	Applicant response
	<p>conflicting and erroneous statements, which simply do not stand up to even cursory scrutiny. Each of these is considered in turn, below. "...the base model outputs compare well with observed turning count and journey time data..."</p>	
3.7	<p>As discussed in some detail above, the Transport Statement accepts that the journey time data was impacted by the lane closure at the time of the survey and consequently, stating that the model compares well with it implies that the model reflects abnormal traffic conditions (at time of significant roadworks). "... in accordance with national guidelines on highway assignment modelling..."</p>	<p>Whilst there may have been some small impact on journey times, the fact that the left turn flare closure was assumed in the base model meant that any impact would have been accounted for in the base model (see also the response to para 2.20 above).</p>
3.8	<p>The model actually constructed is a fixed assignment model. There is no route choice available between any pair of origin and destination points in this model, hence no traffic assignment is in fact modelled. It is fixed in quantum by the input demand data and in route by the network specification.</p>	<p>No response needed.</p>
3.9	<p>This observation raises a number of issues in regard to the validation. Looking back to the issue addressed above, at Paragraph 3.7, Jacobs rely on the validation against turning counts, however, and for one moment ignoring the questionable data sourced during roadworks, given that no route choice is available in the model, every vehicle assigned to every origin-destination pair in the model has only one route which it can take and consequently, the model should ALWAYS validate PERFECTLY against surveyed turning and link flows. There are no opportunities for traffic to assign to routes other than the correct one, hence if data was collected at the same time there can never be a consequent misalignment between surveyed flows and modelled. To claim that this "validation" confirms the accuracy of the modelling is clearly nonsense "...these checks confirm that the models used in the assessment of Metrowest Phase 1 scheme at Ashton Vale Road reflect typical conditions at the site..."</p>	<p>See responses to para 1.5, 2.6, and 2.20 above.</p>
3.10	<p>This is a critical statement, which is relied upon in regard to the model's dependability and yet it conflicts with the earlier acknowledgement that the data sourced is valid only in terms of junction operation at times of substantial roadworks, when capacity of one movement was severely reduced, hence signal optimisation would have been wholly atypical. At this stage and until the model is adjusted to reflect the completion of the works and reopening of all available lanes for all available movements and the signals are fully, permanently installed and the signal controller is running in full optimised mode, will traffic have returned to "...typical conditions..." Despite Jacobs' assurance to the contrary, no such analysis appears to have been undertaken, or if it has, cTc has seen no reliable survey data with which it could have been calibrated and/or validated.</p>	<p>See responses to para 1.5, 2.6, and 2.20 above.</p>

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Ref	Text	Applicant response
3.11	<p>Jacobs conclude this section with further reference to TAG, supporting the reliance on a single day's MCC for acquiring matrix data. This approach is accepted per se, however, the single day on which the survey is undertaken must be representative of a neutral day, on which traffic patterns will be normal and not unduly influenced by any external influence. Furthermore, the traffic surveys must be recent and reflective of relevant levels of demand. In this instance, Ashton Vale Road exhibits some specific traffic characteristics, which vary from day to day and it is essential that the model reflects a day on which these characteristics are at their busiest. In addition, in the almost 3 years since the original traffic demand surveys were undertaken, the operation of various of the Estate occupiers has changed dramatically and in light of recent changes to Town and Country Planning Act (1990) Use Class Order and Permitted Development specification, there is a likelihood of further employers within the estate undertaking similar changes. These changes are able to be accommodated at present, albeit with the potential for a modicum of additional congestion, however, it is incumbent upon the Applicant, as Agent of Change, to demonstrate that the proposals will not reduce the opportunity for such businesses to develop to fulfil their market potential, without requiring a costly relocation due to the impact of the Application works on the accessibility of the Industrial Estate. For the reasons discussed above, cTc maintains that no reliance can be given to this model, hence the required demonstration has not been provided by the Applicant.</p>	<p>The Applicant is not an agent of change given that there has been parliamentary authority to operate the railway, without restriction, since the Portishead Pier and Railway Act 1862 came into force. The Applicant sees no reason to carry out any further work on its modelling as the statutory authority to cross the highway already exists.</p> <p>As noted, it is the Applicant's view that, with the proposed mitigation, the change arising from the DCO Scheme, namely the introduction of MOVA control, will deliver a general improvement in junction operation (see response to para 1.8 above).</p>
<p>Enc 1: CTC Response to action point 23 (11/01/21) – 4. Auction Day Traffic</p>		
4.1	<p>The reference to Manheim's auction programme, which changes traffic demand of that single user very substantially from day to day, was indicative of a general failing to engage before undertaking the surveys. Such engagement would have enabled a typically busy day to be selected on which to survey the operation of the site access. The MCC and journey time surveys were undertaken on days on which Manheim had no auction, hence its traffic demand was substantially lower than it often is. This will no doubt have added to inability of the models to reflect observed operating conditions at the junction, understating both queues and delays.</p>	<p>As noted in the ES, Appendix N, Part 2 'Ashton Value Road Traffic Counts' (APP-172; DCO document reference 6.25), whilst spikes in the exit flow from Ashton Vale Road were noted from the March 2018 counts. These coincide with lower overall junction in-flow with result being that total junction in-flows are lower when compared to the weekday AM and PM peaks considered in the modelling. This demonstrates that the signals have capacity to cope with the higher volumes on Ashton Vale Road on auction days, particularly if upgraded to MOVA control (see response to para 1.8 above).</p>
4.2	<p>In addition to the failure of the modelling team to engage with companies within the Industrial Estate such as to enter into discussions and identify a reasonable, busy day on which to undertake the surveys, it is unfortunate that the data on which the Applicant continues to rely dates from 2017 and is therefore approaching 4 years old.</p>	<p>Traffic data is regarded as appropriate if it is less than five years old. Although in fact it is worth noting that, while a this may still be considered good practice, there is no longer any specific guidance on the age of traffic data used in the construction of traffic models. Previous versions of TAG (unit M3.1 and M2.2), which were superseded in May 2020, advised that</p>

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		data should be no more than five years old, but recent updates have removed this as a particular threshold.																																															
4.3	Much has happened in the intervening time, including one of the Estate's occupiers, ETM, having achieved Planning Permission for and constructed a substantial re-working of their yard. This represents a very significant financial investment in the business in this location and has resulted in a step change in the volume of waste which ETM can process in a given period. At the DCO Hearing on Monday 11th January it was stated that ETM exhibited a typical throughput of 250 – 300 tonnes of waste per day in 2017, whereas now their recent investment has seen this increase to of the order of typically 600 – 700 tonnes per day, a generally 2 – 3 fold increase. Given that the vehicle specification has not changed (and neither is it envisaged to), it follows that the number of Heavy Goods Vehicles (HGVs) visiting the ETM site has increased by typically somewhere between double and treble, since the surveys in 2017. This is not accounted for in the model.	This comment appears to relate to Planning Application No. 17/06938/F. The Transport Statement for this application, prepared by cTc, makes much of the benefits of the proposed changes in terms of efficiency and benefit to the local highway, in terms of reduced queuing back onto Ashton Vale Road, but does not indicate that the Application will increase vehicular movements to and from the site. There is, for example, no assessment of net additional traffic generation from the proposals. Furthermore, para 5.3 of the Transport Statement concludes that "The only impacts in traffic terms, of the proposals are clear a categoric improvements and consequently there can be no defensible reasons for highway objection to the proposals".																																															
4.4.	<p>However and returning to the vehicle auction issue; Manheim have provided indicative figures for their traffic throughput, by journey purpose and hence, according to whether this is an Auction Day or not. These are summarised in Table 4.1, below.</p> <p>Table 4.1; Manheim Auctions Traffic Demand by Journey Purpose</p> <table border="1"> <thead> <tr> <th rowspan="2">Journey Type</th> <th colspan="2">Non-Auction</th> <th colspan="2">Auction Day</th> <th colspan="3">Increase (%)</th> </tr> <tr> <th>In</th> <th>Out</th> <th>In</th> <th>Out</th> <th>In</th> <th>Out</th> <th>2-way</th> </tr> </thead> <tbody> <tr> <td>Staff</td> <td>85</td> <td>85</td> <td>85</td> <td>85</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Trucks (delivery)</td> <td>20</td> <td>20</td> <td>20</td> <td>20</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Customers (collection)</td> <td>0</td> <td>0</td> <td>130</td> <td>260</td> <td>130</td> <td>260</td> <td>390</td> </tr> <tr> <td>TOTAL</td> <td>105</td> <td>105</td> <td>235</td> <td>365</td> <td>+130 (+124%)</td> <td>+260 (+219%)</td> <td>+390 (+186%)</td> </tr> </tbody> </table>	Journey Type	Non-Auction		Auction Day		Increase (%)			In	Out	In	Out	In	Out	2-way	Staff	85	85	85	85	0	0	0	Trucks (delivery)	20	20	20	20	0	0	0	Customers (collection)	0	0	130	260	130	260	390	TOTAL	105	105	235	365	+130 (+124%)	+260 (+219%)	+390 (+186%)	A comparison has been made between the information presented in cTc Table 4.1 and the March 2018 counts for Ashton Vale Road. However, since it is unclear what the data in Table 4.1 represents (is it vehicles or person trips) or the timeframe over which the data covers, this is not straightforward. The March 2018 counts highlighted peak exit flows from Ashton Vale Road of circa 200-250 vehicles with some 150-200 leaving the estate in the hours either side of the main peak. If the cTc data represents vehicles and covers a 2-3 hour period, the two data sets are broadly in accordance.
Journey Type	Non-Auction		Auction Day		Increase (%)																																												
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4.5	The above demonstrates an increase of almost doubling Manheim's traffic demand during an Auction day, compared with a non-auction day, as was the day of the traffic surveys. This simply considers what is currently happening at Manheim but hasn't been allowed for in the Applicant's analyses. Add to this, the expansion of ETM's operation which has taken place since the Applicant's traffic surveys and cTc's concerns become very clear.	As noted, cTc does not provide the start and end times of Manheim auctions in the table under para 4.4. The business' website, informs that, whilst auctions are not currently operating as normal as a result of Covid-19 restrictions, if auctions were taking place, they would commence at 10am, i.e. after the morning peak.																																															
4.6	In addition, new Permitted Development Regulations, further to the changes to the Use Class Order described at Paragraph 3.11 above, provide an opportunity for	There is no legitimate reason for it to be considered that the Applicant has to "future proof" the already existing, long-established, unrestricted and																																															

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	<p>occupiers of the estate to effect a change in use of their site, under Permitted Development Rights. Amongst the changes could be, for example, a change from B8, storage, of which there is much currently within the estate, to B1, office. Implications of this, in regard to proportional impact on traffic generation having been investigated using the TRICS database and these are summarised in table 4.2, below, with the TRICS Reports at Appendix cTc-A.</p> <p>Table 4.2; Implications on Traffic Generation of Permitted Development Change from B1 to B8 use</p> <table border="1" data-bbox="185 528 1010 683"> <thead> <tr> <th rowspan="2">Period</th> <th colspan="3">Two-way Traffic Generation Rate /100sqm</th> </tr> <tr> <th>B8</th> <th>B1</th> <th>Change (%)</th> </tr> </thead> <tbody> <tr> <td>AM Peak</td> <td>0.361</td> <td>2.123</td> <td>+1.762 (+488%)</td> </tr> <tr> <td>PM Peak</td> <td>0.359</td> <td>1.800</td> <td>+1.441 (+401%)</td> </tr> <tr> <td>12 hour</td> <td>3.527</td> <td>11.712</td> <td>+1.185 (+232%)</td> </tr> </tbody> </table>	Period	Two-way Traffic Generation Rate /100sqm			B8	B1	Change (%)	AM Peak	0.361	2.123	+1.762 (+488%)	PM Peak	0.359	1.800	+1.441 (+401%)	12 hour	3.527	11.712	+1.185 (+232%)	<p>statutorily authorised crossing of the highway by the Portishead Branch line.</p> <p>The Estate is, as is made perfectly clear by the submissions of cTc at 1.8 above, already constrained by the operation of the existing traffic lights at the Ashton Vale Road/Winterstoke Road junction, without any significant rail movements. As the MetroWest service pattern can, with the addition of MOVA, accommodate level crossing barrier down time within the anticipated traffic signal cycles and moreover provide compensatory green time, the operation of the railway will have no material impact. In addition, the provision of MOVA is likely to result in a general betterment in terms of junction operation (see response to para 1.8 above).</p> <p>On this basis the table opposite is of no relevance or purpose and the exercise it purports to support is wholly misconceived.</p>
Period	Two-way Traffic Generation Rate /100sqm																				
	B8	B1	Change (%)																		
AM Peak	0.361	2.123	+1.762 (+488%)																		
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4.7	<p>The compiled model input data has assumed no traffic growth for either Ashton Gate Road or Marsh Road traffic. In regard to the matters discussed above, this comprises a significant understatement of the current traffic demand on Ashton Gate Road and also leaves no allowance for existing businesses to develop, or grow their enterprise as they are entitled to do. Clearly, this will result in a significant under-estimate of traffic demand and consequently by extension, potential for queues and delays on the approach to the junction to or from the Industrial Estate. It is likely that these errors could well contribute to the model's inability to replicate the traffic conditions which the occupiers of the Estate observe on a regular basis.</p>	<p>It is assumed the reference should be to Ashton Vale Road.</p> <p>For the reasons given above it is the Applicant's position that the constraints, if any, on future development on the estate are caused by the existing traffic signals, which the DCO Scheme proposes to improve. The level crossing operates under statutory authority and the railway has been in existence since 1867. Any occupier of the estate has clear notice of the level crossing as it must be crossed to access the estate. There is no restriction on level crossing use for the railway and no owner or occupier on the estate can assume that numbers of rail movements cannot increase or are that rail movements are in any way regulated by law or planning condition. It is for owners on the estate to decide if they invest so as to increase traffic movements but it would be unwise for there to be an assumption made that the level crossing cannot be used more frequently than it currently is.</p> <p>Despite this clear and lawful position, the Applicant is proposing modification to the junction to improve capacity and this is secured by requirement. The Applicant anticipates more capacity and not less will be created by the DCO Scheme (as set out in the response to 1.8 above).</p>																			

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4.8	<p>The Jacobs response dismisses the above issues with reference to demand sensitive Vehicle Actuated signal controllers and identifying that these have the ability, indeed are specifically designed to, reallocate green time as required throughout a junction. However, the role of the controller is to balance available green time between movements within the junction in order to optimise available capacity in a manner which will maximise operational efficiency of the junction as a whole. As such, minor arms of the junction exhibiting lower flow than the through-put on the major arms will have considerably less influence on the controller settings. This will therefore compromise the influence the industrial estate egress is likely to have on the controller operation.</p>	<p>The response of the signals to changes in traffic flows will vary according to the model of operation used in the controller. Under the present Vehicle Actuation (VA) mode, phases are extended to pre-set MAX limits via extensions from loops on the relevant approach. Since the method of extending green is somewhat crude, these MAX limits are set low to avoid inefficient use of the green time. Under MOVA, which is proposed as part of the scheme, much more generous MAX limits can be provided because the optimisation is far more intelligent. This means that much longer green times can be given to Ashton Vale Road when needed. This will provide general betterment to Ashton Vale Road, not just following a level crossing closure. MOVA can also be user configured to prioritise particular arms, if so desired. The actual operation will be for the local highway authority to decide but it gives the potential to significantly benefit owners and occupiers on Ashton Vale Road.</p>
4.9	<p>This fact is illustrated in the Jacobs response, which identifies traffic variation on Ashton Vale Road of between 172 vehicle per hour and 290 vehicles per hour, which is dismissed as "...not significant." Whilst in absolute terms and in comparison with the substantial volume of commuter traffic into and out of central Bristol which uses Winterstoke Road, whether the flow on Ashton Vale Road is 172 vehicles or 290 vehicles is undoubtedly lost in the bigger picture of peak hour commuter traffic. It is worthy of note, however, that Jacobs on one hand suggest traffic increases on Ashton Vale Road will receive greater green time through the vehicle actuated signals, whilst simultaneously acknowledging that an increase in flow of 118 vehicle, or 69% on an already congested part of the network is "...not significant." If not significant, it cannot expect to influence any increased green time at the signals and increased congestion, broadly in proportion to the increased demand must be expected. Such an outcome would be catastrophic for the occupiers of this important employment site.</p>	<p>cTc's statement mis-quotes the response. The response said that the peak 290 vehicles per hour exit flows was not significantly higher than the highest modelled hourly flows of 204 vehicles per hour between 4:00pm-5:00pm (so a difference of 86 vehicles).</p> <p>It should be noted that signals controllers do not deal with the significance of changes in traffic. Under MOVA green times will adapt on a cyclic basis to prevailing demands whether the changes on a cycle-by-cycle basis are significant or not.</p>
<p>Enc 1: CTC Response to action point 23 (11/01/21) – 5. Impact of closure</p>		
5.1	<p>The Applicant's response expresses a lack of understanding of how cTc's values for periods of increased congestion are arrived at. This is surprising, as the quotation at 2.4.1 of the Jacobs response sets out quite clearly how the figures are arrived at and that these are all obtained from information provided in the ch2m report. There would appear to be an element of misunderstanding of the relationship between</p>	<p>No response needed</p>

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	<p>junction congestion and individual delay and this appears likely to be where Jacobs' confusion has arisen.</p>	
5.2	<p>Firstly, to consider the figures quoted in the Jacobs' response. At Section 2.4.2, it is stated that "...the maximum extent of the queue on Ashton Vale Road is only expected to increase from 12 to 20 vehicles..." This is an astounding and revealing statement. Jacobs are suggesting that an increase in queue length of 40%, after their proposed mitigation and on the already congested link is acceptable. Moreover, the cTc analyses of Jacobs' data and which they claimed not to understand identified an impact on capacity of between 30 and 50%. Although it is acknowledged that increases in queue lengths do not necessarily relate directly to decreases in capacity, as other issues are also complicit, it is undeniably the case that in general terms, as capacity decreases, queuing increases, hence Jacobs' calculation of a 40% increase in queuing validates well with cTc's statement that capacity decreases by of the order of 30 – 50%.</p>	<p>The percentage increase does not in itself indicate the significance of a change. An increase in queuing from 2 to 4 vehicles would represent a 100% increase but the increase in queuing is not severe. The key point is that the resulting queue lengths with the scheme could be cleared in one to two cycles (as at present) and so the impact in terms of delay is small as is demonstrated in the modelling evidence presented in ES Appendix N (APP-172; DCO document reference 6.25).</p> <p>The relationship between queuing and capacity implied by cTc is wrong in this case. Queues increase because the red time to Ashton Vale Road increases during a level crossing closure. The analysis carried out proves that the signals are able to provide compensatory green time following this event and so the net impact on capacity is negligible.</p>
5.3	<p>It is suggested that, with "...two passenger trains per hour and even an intervening freight service..." that the signal cycles "...have sufficient duration between them to ensure 'full compensation' and returning to normal traffic operation is achieved between each event...", however, this makes the very rash assumption that the three events described are equally spread during the hour. There is no basis for this assumption, as trains may arrive consecutively, doubling closure time, or they may arrive sufficiently spaced to enable re-opening of the gates for only a short period before reclosure. The implication that the queues will always clear between closures is without any basis therefore.</p>	<p>Assumptions relating to the passage of trains through the level crossing are set out in a Technical Note that forms Part 3 of Appendix N to the TA (APP-172; DCO document reference 6.25), which contains a description of timings, with indicative timetables and closure sequences. The basis for the assumptions is information provided by Network Rail, based in turn on parameters that govern train movements enshrined in operating rules and the signalling system (including enhancements from the current setup that are to be provided as part of the Scheme). Analysis of traffic movements through the signal junction makes use of this sequencing, and as such does not assume evenly spaced passage of trains through the level crossing. In particular, LinSIG modelling of the junction (set out in Part 4 of Appendix N to the TA (APP-172; DCO document reference 6.25)) describes how the traffic signal junction operates with level crossing closures, and incorporates proposed changes to traffic signals to illustrate how the junction 'compensates' for closures.</p>
5.4	<p>The response continues to describe the Linsig results, which it suggests validate the VISSIM results and cTc's observations from the summaries in the response itself would tend to support the assertion that indeed, this comparison does confirm that</p>	<p>The queue lengths noted by cTc represent the mean maximum queue lengths over a four-cycle sequence with a level crossing closure during the second cycle. The results therefore represent a worst-case period, with</p>

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	queue lengths on Ashton Vale Road are seen to experience very severe impact; from 50-60m to 100m (broadly doubling) and from 68 to 113m (66% increase).	queue lengths skewed by the cycle during which the level crossing is closed. The mean impact over an hour period would be notably less since this would be lowered out by the cycles during which no level crossing closure occurs.
5.5	What is clear from cTc's above review of Jacobs' response to the earlier submissions is that the same data (both input and output) is being considered by different consultants and reaching wholly different conclusions. Perhaps the relevant questions in this regard for consideration in the DCO Hearing are these; • Why are two wholly different conclusions evident from the same models? And; • Which conclusion is appropriate?	As mentioned in the responses to paras 5.2 and 5.4 above, cTc appear to be mis-interpreting the model output and consequently reach different conclusions.
5.6	Given that the numbers being considered by both parties are the same, the difference can only be satisfactorily explained by considering the differing priorities of the parties. 1. Jacobs are representing the Applicant and seeking to demonstrate that the proposal can be delivered without causing undue harm to neighbouring properties, residents and companies. 2. cTc is representing two occupiers of the Industrial Estate and seeking to identify if unacceptable harm can be prevented in the delivery of the Application scheme.	<p>This is an allegation of unprofessional behaviour that is without merit. Jacobs (initially as CH2M) were appointed by the Applicant to provide technical advice and assessments as part of the project developing MetroWest Phase 1, documentation from which forms part of the technical support to the DCO application for the Portishead Branch Line. Jacobs' employees are expected to operate within the company's code of ethics and integrity.</p> <p>As part of the DCO Examination Jacobs have provided expert evidence to the Panel on behalf of the Applicant, based on the analysis carried out and fully cognisant of their professional standards and duties. As previously noted, the discussions in this response (and previous documents and responses) is based on an objective exercise using verified traffic data and which has been carried out in accordance with national modelling guidelines. The response to para 1.5 summarises.</p>
5.7	Both parties seek the same outcome, but with differing emphasis on what comprises acceptable impact and what does not. cTc's clients in preparing this review are ETM and Manheim, however, other occupiers of the site have expressed grave concern regarding the impact of the proposals on their business by means of reduced accessibility. Appendix cTc-B comprises a letter from Flynn, Appendix cTc-C comprises a similar letter from Beyond the Bean and Appendix cTc-D from Avonline. Each of these expresses grave concerns and in light of these statements, along with cTc's clients' (ETM and Manheim) having been sufficiently concerned to choose to fund consultants' representation in the DCO process confirms that the statement from the	The Applicant has provided its evidence to the Panel and to the local highway authority that the junction will operate satisfactorily and will to an extent be improved by the DCO Scheme (see also response to para 1.8 above).

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Ref	Text	Applicant response
	Applicant's team that doubling of maximum queue lengths on Ashton Gate Road are of no material consequence woefully misreads the experience of this who will be directly affected.	
5.8	Contrary to Jacobs' assertion, that the traffic impact would not be severe in the terms of NPPF, the above clearly demonstrates that without additional mitigation and tight controls on frequency of services, hence closures of the level crossing, the DCO scheme as it stands could potentially make continued occupancy of this key employment site untenable.	The comprehensive analysis already provided in ES Appendix N (APP-172; DCO document reference 6.25) confirms that the impact would not be significant. In addition, the proposed introduction of MOVA control will provide a general betterment to the operation of the traffic signals (see response to 1.8 above).
Enc 1: CTC Response to action point 23 (11/01/21) – 6. Appendix N		
6.1	At the Appeal Hearing on Tuesday 12th January, NSC openly criticised Carl Tonks for an alleged lack of consideration of the data submitted at Appendix N of the Transport Assessment, however, reference to the initial letter submitted in representations to the DCO, via SPLS and on behalf of occupiers of the Ashton Vale Industrial estate identifies the following statement; "I have not undertaken a forensic analysis as my preliminary consideration has identified a number of potential issues on which I would like more data from the modelling team. Although I could continue to effectively dismantle the report further in order to confirm whether or not the model is fit for purpose, my initial review has identified some significant questions arising. I think it reasonable to provide the traffic modellers (ch2m) with an opportunity to respond to these initial questions and hopefully thereby move discussion forward in a positive manner. It may be that some of my current questions are able to be answered by the modellers and that may enable me better to focus my consideration, avoiding the need to investigate in detail potential dead-end issues.	As is consistently explained in this response, the Applicant is content that the purported flaws in modelling suggested by cTc do not exist. The Applicant has consistently told cTc this is the Applicant's position. It is then a matter for cTc and its clients to decide what evidence it wishes to present to the Panel.
6.2	The above quotation is before the Hearing and has been since March 2018. It acknowledges the substantial volume of analyses which have been submitted, however, the majority of these exhibit significant concerns in regard to its fitness for purpose or validity. The above quotation confirms that this was highlighted almost 2 years ago and that cTc's review of the large volumes of technical data submitted had been halted in order to limit our clients' exposure to fees which rightly should not accrue. Instead in that letter, cTc invited the Applicant to undertake further survey work by way of MCC turning count(s) in order to create more effective and representative model demand matrices. The Appellant chose not to take up this option and instead sought to rely on substantial amounts of analyses based on the initial, compromised data.	The Applicant saw no need for further survey work in 2018 beyond that carried out in March 2018 and documented in Appendix N Part 2 (APP-172; DCO document reference 6.25). It still sees no need for that work. The Applicant does not believe the data is in any way compromised, as set out in the response to para 1.5 above.

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6.3	<p>In view of the verbal criticism cTc received from NSC Officers on Tuesday 12th January, despite the above acknowledgement that the data was not fit for purpose, a further review has been undertaken and this has confirmed the conclusions above, namely;</p> <ul style="list-style-type: none"> • In 2021, despite the lack of growth applied to Ashton Vale Road traffic from the surveyed 2017 base, traffic queues are shown to increase during the AM Peak hour from 43m to 65m (+51%) with 1 train per hour; • During the PM Peak, the equivalent comparison indicates a queue which increases from 98m to 118m (+20%); • Assuming 45 minute frequency, the equivalent comparison indicates an increased queue length, from 43m to 67m (+56%); and, • During the PM Peak, the same 45 minute frequency results in an increase in queue lengths from 98m to 142m (+45%). 	<p>No acknowledgement was made at any time that the data was not fit for purpose. Only small impacts may have arisen as a result of the works on site at the time of the traffic count (see response to para 1.5 above) and professional judgement has been applied throughout that this does not materially affect the use of this data.</p>
6.4	<p>Again, the above increases in forecast queue lengths, taken directly from the model's output, have validated cTc's statement from much earlier, suggesting a reduction in capacity of the order of 30 – 50%. It is incongruous that Jacobs claim no understanding of where cTc's suggested impacts arise, when their own model clearly mirrors the same conclusions.</p>	<p>See responses to para 5.2 and 5.4 above. Jacobs have clearly indicated their understanding of the impacts and there is no validation of cTc's views accorded by any information provided by the Applicant and its expert team at any time. The Applicant does not recognise the position cTc is taking.</p>
6.5	<p>However, and notwithstanding the above correlation between cTc's forecasts and those distilled from Jacobs' model. cTc stands by the initial submission, that the model is based on inappropriate and invalid data. Consequently, cTc's earlier assertion, that the model should have been corrected, using valid survey data before detailed review was undertaken, is vindicated and as stated in the letter of March 2018, the time required to review the extremely large volume of data submitted should not have been necessary.</p>	<p>See responses to para 1.5, 2.6, 2.9, 2.10 and 2.20 above. cTc's position is without merit for the reasons previously explained.</p>
6.6	<p>It is suggested that the large volume of data generated from compromised data may have been submitted in order to obfuscate and deter detailed consideration of the flawed model; to coin a colloquialism; "never mind the quality, feel the width." The time and cost of reviewing this flawed data should not have been required and cTc's clients have suffered additional expense as a result.</p>	<p>For the reasons repeatedly given above and previously (see in particular the response to para 1.5) this point is wholly misconceived.</p> <p>If cTc is proposing an application for costs on behalf of its clients this will be robustly defended. cTc's criticism is wholly misguided and without merit.</p>
<p>Enc 1: CTC Response to action point 23 (11/01/21) – 7. Conclusion</p>		
7.1	<p>In conclusion, the above presents a detailed response to the Jacobs' submission (via Womble Bond Dickinson) in response to cTc's earlier representations. The submission is critical of cTc's comments, however, demonstrates a clear lack of understanding of the key issues raised. Moreover and despite ch2m having acknowledged the flaws in the collected data, Jacobs are now seeking to distance themselves from this acknowledgement, despite it being in writing before the Hearing that the roadworks</p>	<p>See Applicant's response to para 1.5 above.</p>

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	<p>were considered by the Applicant's modelling team to have compromised the validity of queue lengths and journey time surveys undertaken. This data is not representative and cannot be relied upon.</p>	
7.2	<p>The above notwithstanding, cTc has, as suggested by the Applicant, presented a technical review of the output from the Applicant's flawed model and this has confirmed a substantive impact on the access to and egress from the Ashton Vale Industrial Estate. This is most certainly of a scale which would justify refusal of the Application as it stands, under the terms of Paragraph 109 of the NPPF.</p>	<p>Again, it is reiterated that the impact of the scheme on Ashton Vale Road has been carried out using two different pieces of software (so models), neither of which is flawed. The Applicant is content that, with mitigation the access to the Industrial Estate will not be harmed and may well be improved (see response to para 1.8).</p> <p>The Applicant relies on the National Networks National Policy Statement in defending its position and thinks that references to the NPPF are of limited material relevance.</p>
7.3	<p>In addition to the demand matrices having been compiled on data collected during a period of substantial roadworks and critical lane closures, the models confirm a highly significant impact on the operation of the sole access to and egress from the industrial estate. The level of impact identified by the model output is of a similar order to that suggested in cTc's earlier submission, yet criticised by the Applicant's representative as having no basis. cTc's manual assessment is clearly vindicated by the Applicant's model output.</p>	<p>See Applicant's response to para 1.5 above.</p>
7.4	<p>The above damning conclusions notwithstanding, the traffic model has failed to account for substantial business growth by several of the Business Park's current occupants, who have invested heavily in the site since the date of the traffic surveys relied upon in the model. Furthermore, other operators currently and have historically exhibited cyclic traffic demand profiles, with certain days typically exhibiting substantially greater traffic demand than others. No contact was made with occupiers of the Estate in planning the survey programme for this model and the key surveys were undertaken on days not reflecting high levels of demand.</p>	<p>The conclusions reached by cTc are not accepted by the Applicant for the reasons explained above. The surveys were carried out on typical days selected at random. Cyclic traffic demands will be best dealt with by the installation of MOVA by the Applicant at the existing traffic lights and it is envisaged this will benefit the occupiers on the Ashton Vale Industrial Estate to remedy pre-existing issues with queuing at the Ashton Vale Road/Winterstoke Road junction (see also response to para 1.8).</p>
7.5	<p>As has been consistently stated throughout this process, occupiers of Ashton Vale Industrial Estate experience levels of congestion on Ashton Vale Road which consistently exceed those indicated in the model and this could have been readily addressed by repeating the MCC survey at a time more representative of normal traffic conditions, however, the Applicant has consistently resisted this.</p>	<p>The Applicant notes the issues complained of by cTc currently exist. The Applicant's position is that, with mitigation provided, the existing traffic conditions will not be worsened and may even be improved by the Applicant's proposals.</p>

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7.6	As a result of the above, no weight can be given to the results of this clearly flawed model.	This is refuted by the Applicant for the numerous reasons given above. The modelling is accurate reliable and verified. It is a robust assessment of the junction and can be relied on to predict the likely impacts of the scheme.
7.7	The occupiers of the Estate are not opposed in principle to the proposed Metro, indeed, any measures which could reasonably be expected to benefit the City of Bristol are to be welcomed, however, these must be introduced at a scale and with appropriate mitigation, such that in combination the occupiers of this key business area are not disadvantaged. At present, the faults in the traffic modelling do not support any assertion that this is the case.	The proposals will have no material impact on the Industrial Estate and nothing more than could and should be expected where occupiers must cross a 150 year old level crossing to access and leave their premises. The Applicant is confident the modelling is robust and the Applicant's proposed provision of a MOVA at the Ashton Vale Road/ Winterstoke Road Junction will accommodate existing traffic and provide a general betterment to the operation of the signals (see response to para 1.8)
Enc 2 – SPLS Response to action point 34 of 12/01/21		
	<p>Sutherland Property and Legal Services (SPLS) provided oral submission to the hearing on 12/01/21 under agenda item 6. The submission was based on the written submission provided to the Examination on 23 November 2020 at Deadline 2.</p> <p>The oral submission set out that: - The site is a <i>Principal Industrial and Warehousing Areas</i> as adopted within Bristol City Council's Planning Policy. Local policy recognises the limited supply of employment land and the need to retain it (Core Strategy 4.8.17); and - The NPPF provides two tests, these are Para: 108c and 182. Neither test is passed by the application based on its current evidence base.</p>	The Ashton Vale Industrial Road Estate is located at the southern end of the DCO Scheme. Environmental Statement Volume 3 Figure 6.1 Planning Constraints (Document Reference 6.24, Examination Library Reference APP-115) shows the land allocations in this area. An extract from Sheet 5 is provided below.

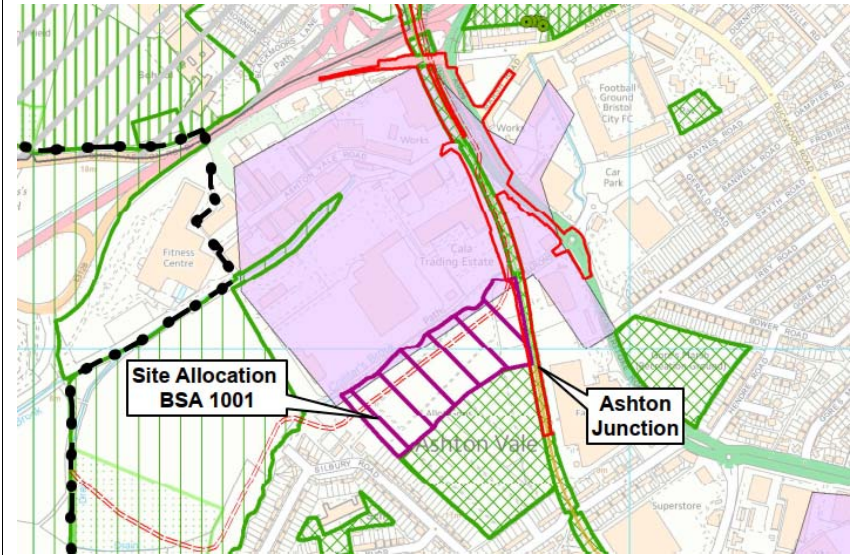


Figure 1: Planning Constraints

Site Allocation BSA 1001 is allocated for housing, this site is in the process of being built out with the new housing being accessed from Silbury Road.

The Ashton Vale Road Industrial Estate, shown with a purple overlay has been designated as 'Principal Industrial and Warehousing Areas' within the Bristol Local Plan. Policy BSC8 of the Core Strategy makes reference to this type of land and states: "Principal Industrial and Warehousing Areas will be identified and retained for industrial and warehousing uses." Policy DM13 of the Bristol Local Plan – Site Allocations and Development Management Policies also applies to this site. The purpose of Policy DM13 is to protect the land against development, it provides details of the potential kind of development that can take place including Use Classes B1b – B8 and sui generis uses of a similar nature. It provides a list of other development that may be acceptable, but this is limited in order to safeguard the land for its primary purpose of industrial and warehousing.

The DCO Scheme does not propose any development within this land designation other than by way of work to the existing operational railway, for which would be permitted under Network Rail's permitted development rights .

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		<p>The industrial estate is accessed along Ashton Vale Road from Winterstoke Road. The Ashton Vale Road / Winterstoke Road junction is a signalized junction. Once on Ashton Vale Road, traffic is required to cross a level crossing in order to access the main area of the industrial estate. The DCO scheme includes measures to enhance the performance of the junction (see requirement xxx).</p> <p>Chapter 16 – Transport, Access and Non-Motorised Users, of the Environmental Statement (Document Reference 6.19, DCO Examination Library Reference APP-111) details the DCO scheme measures at the junction and potential impacts of the scheme on the Ashton Vale Road level crossing. This finds that there would be a negligible effect on the use of the level crossing by road traffic. The assessment has been informed by traffic modelling which indicated that increased level crossing closures combined with measures at the junction will have a neutral impact on queuing and delays on Ashton Vale Road. Details of the modelling are reported in Appendix 16.1: Transport Assessment (Part 18 of 18) – Appendix N, Ashton Vale Road of the Environmental Statement (Document Reference 6.25, DCO Examination Library Reference APP-172).</p> <p>Traffic modelling undertaken demonstrates that there is capacity on the road network in this area, in particular the signalised junction between Ashton Vale Road and Winterstoke Road, to accommodate the increased number of level crossing closures associated with the introduction of passenger services on the railway line.</p> <p>On this basis, the applicant does not consider there to be a conflict between the land use designation of 'Principal Industrial and Warehousing Area' at Ashton Vale Industrial Estate and the introduction of passenger train services on the Portishead line.</p> <p>Section 104 of the Planning Act 2008 states:</p>

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		<p>(1) This section applies in relation to an application for an order granting development consent if [a national policy statement has effect in relation to development of the description to which the application relates]² .</p> <p>(2) In deciding the application the [Secretary of State]³ must have regard to—</p> <p>(a) any national policy statement which has effect in relation to development of the description to which the application relates (a “relevant national policy statement”),</p> <p>[</p> <p>(aa) the appropriate marine policy documents (if any), determined in accordance with section 59 of the Marine and Coastal Access Act 2009,]⁴</p> <p>(b) any local impact report (within the meaning given by section 60(3)) submitted to the [Secretary of State]⁵ before the deadline specified in a notice under section 60(2),</p> <p>(c) any matters prescribed in relation to development of the description to which the application relates, and</p> <p>(d) any other matters which the [Secretary of State]³ thinks are both important and relevant to [the Secretary of State's]⁶ decision.</p> <p>This Application is to be assessed by reference to the National Networks National Policy Statement dated December 2014 (NNNPS) It is therefore the NNNPS and not the NPPF that applies for policy considerations in this Examination. The NPPF is, at most, a material consideration under S104(2).</p> <p>The Applicant has fully considered the relevant policy contained at paragraphs 5. 201 – 5.216 of the NNNPS. In particular, by reference to its proposal for improvements to the Ashton Vale Road/Winterstoke Road junction, the Applicant is providing appropriate mitigation in accordance with paragraph 5.216 of the NNNPS</p> <p>To the extent the paragraph in the NPPF referred to by Sutherland Property and Legal Services is relevant:</p>

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		<p>(a) Paragraph 108(c) of the NPPF largely reflects Para 5.216 of the NNPS and the Applicant's proposals for works to the Ashton Vale Road/Winterstoke Road Junction meet the policy requirements; and</p> <p>(b) in respect of Para 182 of the NPPF, the existence of the level crossing since 1867 means it cannot be in any way regarded as an agent of change. All occupiers of the estate will have been from the outset of their interest in premises at the industrial estate been aware of the level crossing, the use of which is not regulated by planning condition, or any other control mechanism. No assumption can be made by owners and occupiers as to the nature timing or duration of level crossing closures.</p> <p>The railway is an existing feature and therefore Para 182 is of no relevance. In any event the mitigation proposed by the Applicant deals with impacts of level crossing down time on occupiers of the Industrial Estate.</p>
	<p><u>Principal Industrial and Warehousing Areas</u></p> <p>The thrust of the submission is that the estate is a Principal Industrial and Warehousing Area and therefore the existing businesses are afforded a degree of protection with regard to the continued use and expansion of their operations.</p> <p>Such protection is secured via NPPF 108c) which is explicit in ensuring that any significant highways impacts can be cost effectively mitigated to an acceptable degree. As per the evidence provided by Mr Tonks of CTC at ENC1 of this submission and throughout the process of this DCO Examination, it is not felt such impacts have been mitigated to an acceptable level, providing a direct impact to the operation of the Principal Industrial and Warehousing Area.</p> <p>It is also pertinent to note NPPF para 80: <i>“Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development.”</i></p>	<p>The Applicant deals with relevant policy considerations and mitigation issues in the two responses above. Mitigation is being provided through Requirement 18 of the dDCO (Examination library reference REP3-005) and no additional mitigation is required nor justified in either policy or other terms.</p> <p>The reference to NPPF para 80 is of limited materiality to the Applicant's proposals on the basis that the level crossing has existed since 1867 and is readily clear and apparent to anyone choosing to invest in property in Ashton Vale Road. There is no planning or other control on level crossing barrier down time and anyone choosing to invest in Ashton Vale Road should make their decision in that context. In any event the Applicant is required through Requirement 18 to provide works at the Ashton Vale Road/Winterstoke Road junction that will mean there is no significant impact on the owners and occupiers of the Industrial Estate arising from increased barrier down time for the rail service patterns that will arise from the operation of the MetroWest Phase 1 services. NPPF para 80 is therefore not material in the context suggested by the IP and even if it was Requirement 18 of the dDCO means there is no material impact from the</p>

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	<p>Within Mr Tonks response at ENC 1: CTC RESPONSE TO ACTION POINT 23 (11/01/21) three further business have provided letters of concern with regard to MetroWest's plans and the possible frequency of operation. These are businesses that support the local economy and that wish to invest in their continued operation and expansion. It is advanced via the evidence of Mr Tonks that insufficient information has been provided to guarantee no impact on their business and their plans for future growth.</p>	<p>MetroWest proposals that would inhibit future development proposals at Ashton Vale Road.</p> <p>The DCO Scheme is itself a scheme that provides opportunity of significant growth for the regional economy and is supported at National, Combined Authority and Local authority levels.</p> <p>The use of the railway has been authorised by statute since 1862. There is no reason, scope nor purpose in any restriction in train movements. Parties who have come to the industrial Estate since the railway opened in 1867 have done so with full knowledge of the existence of the level crossing and its potential for impacts on movements out of the industrial Estate. Despite this, the Applicant is proposing to be subject to Requirement 18 of the dDCO which ensures that works to the Ashton Vale Road, Winterstoke Road junction are carried out and which will mean any impact of the train service pattern proposed for MetroWest Phase 1 on owners and occupiers of the Industrial Estate will not be significant.</p>
	<p><u>Agent of Change</u></p> <p>Within the applicant's response to Deadline 2 submissions (9.18 ExA.CWR.D3.V1) it is advanced that the agent of change would not apply as no planning permission of development consent would be required to increase the number or frequency of service of the existing freight operation.</p> <p>Throughout the two days of the hearing, it was advanced that a total of 40 movements could be achieved per day (20 in each direction) under current permits. It was also noted that a number of speakers at the hearing stated that the current</p>	<p>The Applicant refers to its response to item 1.8 above. It is to be noted that expansion plans for cTc's clients must be constrained by the existing conditions described by and relied upon by cTc. In such circumstances the increased use of a railway that has existed since 1867 and has no constraint on operation use in planning terms cannot be described as an agent of change. Further, cTc describe prevailing conditions that would already serve to inhibit the expansion of businesses located at Ashton Vale Road. In addition, because:</p> <ol style="list-style-type: none"> a. The level crossing down time can be partially accommodated within the existing traffic light cycle; b. Since the main road (Winterstoke Road) receives largely uninterrupted green during a level crossing closure, the signals can provide a longer compensatory green time to Ashton Vale Road following a closure, especially under MOVA; and

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	<p>number of freight movements are infrequent, and this coincides with comments made to us by both ETM and Manheim.</p> <p>For a fall back position to exist it must be a realistic prospect, it is not realistic to assert that there may be up to 40 closures a day as it does not appear that there is demand for this level of freight movement.</p> <p>It would also appear the applicant has ignored the other major point with regards to the 'Agent of Change' principle. The businesses on the estate will change, expand and increase. The businesses are located on a Principal Industrial and Warehousing Area where policy supports their use and continued growth, this is evidenced in Mr Tonks evidence via the email letter provided by Avonline Networks (which sets out a tripling of their business output in 18 months) and the increase in activity of ETM, providing for a large investment in their business and subsequent increase in vehicular traffic on the site (via virtue of application 17/06938/F which was approved on 21 August 2018). Within the deadline 2 submission table 4.1 sets out a hypothetical increase in traffic movements via the permitted use change of B8 to B11, though accepted only 500m2 of each building could change, this still sees an am peak impact of +488% and a pm peak impact of +401%.</p> <p>Following Mr Tonks review of all the modelling provided by the applicant it does not appear that any increase in business activity has been considered from the original (though flawed) base data that the applicant is relying on.</p> <p>It is conceivable that due to the impact of junction closures that do not currently exist (and that there is no realistic prospect of occurring) business may have unreasonable restrictions placed upon them with regard to their future expansion. Such a position is contrary to NPPF paragraph 182.</p>	<p>c. The introduction of a MOVA will provide a general betterment in terms of the operation of the signals.</p> <p>The reference to any "agent of change" concept applying to the Panel's and Secretary of State's consideration of the Applicant's proposals is wholly without merit.</p>

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	<p><u>Summary</u></p> <p>It is advanced that the failure to correctly model the junction has provided the applicant with incorrect base data that means no accurate assessment of the junction and the proposed impacts can be determined.</p> <p>It is also argued that the applicant's reliance on a fall back of 40 closures a day is unlikely as demand for such a prospect is unrealistic, even if such a position is maintained the stress testing has failed to take into account the expansion of business within the estate.</p> <p>It is put to the applicant that there is a realistic prospect that business within the estate will see an impact on their ability to operate and that future applications to the Local Planning Authority to expand may be refused based on the failure of the current model and that of the stress testing to ascertain correctly the impacts of future expansion.</p>	<p>There has been no failure to correctly assess impacts on the Ashton Vale Road/Winterstoke Road Junction. The modelling work carried out is robust and reliable.</p> <p>It is for the businesses on the Ashton Vale Road industrial Estate to decide how they expand their businesses. They are fully aware of the Level Crossing. It has been there since 1867. It is not subject to any control in closure numbers and it is authorised by statute. Despite this the Applicant is proposing works to the Ashton Vale Road/Winterstoke Road Junction that will mean the junction can largely continue to function as it currently does and indeed its functioning can be fine-tuned to address different traffic patterns on a dynamic basis.</p> <p>It is not anticipated there will be a significant effect on the owners and occupiers of the Industrial Estate as a result of the DCO scheme being implemented and operated. The Applicant will work with the local highway and planning authority and occupiers to reduce construction impacts and will continue to keep owners and occupiers informed of the project timetable.</p>

Appendices to this Response Document

- **Appendix 1 – Statement from Mr Lovell on May 2017 Road Turning Count**