MetroWest

Portishead Branch Line (MetroWest Phase 1)

TR040011

Applicant: North Somerset District Council

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Memorandum

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Subject	**Response to Objections Raised by CTC on Behalf of ETM, Manheim etc**	**Project Name**	MetroWest Phase 1 DCO
Attention	Richard Matthews (NSC)	**Project No.**	674946CH.CY.76.01
From	Lee Templeman		
Date	8 June 2020		
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1. Introduction

CTC, acting on behalf of ETM Ltd, Manheim Auctions Ltd and Flynn Ltd of Ashton Vale Business Park, have raised objections to the proposed MetroWest Phase 1 DCO, specifically in relation to the increased rail movements at the Ashton Vale Road level crossing. The written representations received by North Somerset Council (NSC) from CTC state:

> *"The Site comprises an industrial estate with a variety of business users but ETM and Manheim Auctions in particular require appropriate road access to continue operating their respective businesses. ETM is a waste recycling company with up to 250 vehicle movements a day and Manheim Auctions in a car auction operation with similar high levels of vehicular movements. The DCO process proposes inserting regular train journeys across the only vehicular access to the estate creating an untenable situation for these existing occupiers."*

The relevant evidence supporting the DCO is contained in the Document 6.25 Environmental Statement, Volume 4, Technical Appendices, Appendix 16.1: Transport Assessment (Part 18 of 18) – Appendix N, Ashton Vale Road Junction Assessments, prepared by CH2M (now Jacobs) and dated July 2018. CTC have made several comments in relation to this evidence which are set out in the following sections with responses which are mainly based on the evidence previously submitted.

2. Issues and Responses

2.1 Traffic Data

2.1.1 Issue Raised

> *"Further to the comments submitted by cTc on behalf of the businesses resident within the Ashton Vale Business Park, the concerns over the validity of the traffic data used to compile the Linsig and VISSIM models are acknowledged by ch2m on behalf of the scheme promoters.*
>
> *In an attempt to address the concerns raised, the expected response would comprise a repeat of the traffic surveys on which the traffic models were compiled and which had been a primary source of criticism, followed by a "re-run" of the models themselves using the newly acquired survey data. This does not appear to have happened and the latest submissions appear to*

provide little more than a "sticking plaster" approach to the problems evident with the models, which continue to rely on unreliable survey data."

2.1.2 Response

Traffic data employed in the LinSig modelling and the calibration of the VISSIM model was based on a survey carried out on Tuesday 9 May 2017. Further checks to confirm that these flows were representative of typical volumes at the site were carried out using flows from an ATC carried out between 15-28 March 2018 inclusive.

Transport Analysis Guidance (TAG) Unit M1.2 states (para 3.3.6) that Mondays to Thursdays are neutral and that May is a neutral month. There are therefore no issues with the date and month on which the survey used in the analysis were carried out. TAG Unit M1.2 (para. 3.3.35) also states that "It is normal practice to MCCs to be carried out a single day but ATCs should be conducted for at least two full weeks", and (para 3.3.36) states "Turning movement counts at junctions are normally single day MCCs".

CTC's objection implies a concern over the 'validity' of the 9 May 2017 survey which is 'acknowledged' by Jacobs. This is not true. Whilst it was noted in the evidence that the closure of the Winterstoke Road northbound left turn filter lane at the time of survey might have affected the count, subsequent checks against the March 2018 ATC data confirm that this had no impact on traffic volumes at the site and that the 9 May 2017 was representative of traffic at the site. It is also worth noting that the VISSIM model was calibrated and validated with the left turn flare closed to fully reflect conditions on the day of the surveys.

The analysis in Technical Memorandum: 'Ashton Vale Road Traffic Counts (3 July 2018) shows that the total junction in-flows from the 9 May 2017 survey were consistently higher throughout the day in the count compared to the mean weekday (excluding Friday) 2018 ATC in-flows. The comparisons presented in the Technical Memorandum also highlighted the following:

- Total junction in-flow on 9 May 2017 was 31,148 vehicles vs 28,500 daily average (excluding Friday) from the 2018 ATC;
- Total inflow in the AM peak (8:00-9:00am) was 2,830 vehicles (9 May 2017) vs a daily mean of 2,684 vehicles (2018 ATC, excluding Friday), and in the PM peak (5:00-6:00pm) 2,989 (9 May 2017) vs a daily mean of 2,658 vehicles (2018 ATC, excluding Friday);
- The volume exiting Ashton Vale Road during the PM peak hour (5:00-6:00pm) was 229 vehicles in the 9 May 2017 survey vs a mean for the same hour of 179 from the 2018 ATC (excluding Friday).

Overall, as concluded in the Technical Memorandum on the Ashton Vale Road Traffic Count, it is considered that the 9 May 2017 traffic count used in the modelling is representative of traffic volumes at the site and hence there was no need to collect new data and re-run the models. Moreover, given

that the volumes in 2017 were higher, it can be considered that the use of this data means that the modelling is more robust than if it had been based on new turning count data collected in 2018.

2.2 Model Validity

2.2.1 Issue Raised

> *"The Do Nothing models do not reflect traffic conditions experienced by occupiers of Ashton Vale Industrial Estate and the reports submitted acknowledge significant variation in traffic conditions on the estate from day to day."*

2.2.2 Response

The objection raised by CTC states that the models '… do not reflect traffic conditions experienced by occupiers of Ashton Vale Industrial Estate". However, CTC provide no supporting evidence as to what these conditions are or how the modelled conditions differ from these.

The 'base' VISSIM model was calibrated to junction turning movements from the 9 May 2017 traffic survey. As noted above, this count is considered representative of typical conditions. Link and turning count calibration were carried out for every hour modelled in the AM and PM periods meeting criteria for model acceptability set out in TAG Unit M3.1 (para. 3.2.8).

Operational conditions in the base VISSIM model were validated to journey times collected via moving car surveys carried out on the 9 and 10 May 2017. A comparison of the observed and modelled journey times showed a good fit between the two data sets confirming that the model is accurately simulating condition in the local network, including Ashton Vale Road. Again, these checks met necessary acceptability criteria set out in national modelling standards (TAG Unit M3.1).

Since 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.

With regard to daily variation, whilst Technical Memorandum: 'Ashton Vale Road Traffic Counts (3 July 2018) acknowledges that daily variation occurs at the Ashton Vale Road junction, the analysis also shows that maximum profile recorded is very similar to the 9 May 2017 count used in the modelling. Additionally, as noted above, TAG states that it is typical practice to carry out a turning count on a single day and thus no requirement to survey multiple days to take account of potential variation.

2.3 Auction Day Traffic

2.3.1 Issue Raised

> *"The 2017 surveys on which the models continue to be based were undertaken on a day on which Manheim Auctions were inactive, hence wholly underestimate the traffic conditions. The modelling team have attempted to justify this by means of ATC surveys which do not present sufficiently detailed information to enable any acceptable validation of the model, which does not allow for the commercial activities of one of the estates largest and busiest occupiers."*

2.3.2 Response

Most traffic signal-controlled junctions allocate green time based on prevailing traffic flows. So, generally speaking, a reduction in volume on one arm will increase the potential for green time to be provided to other busier approaches. The Winterstoke Road/Ashton Vale Road signals currently operate under 'Vehicle Actuated (VA) mode, which increases the green time on a specific approach up to a predefined MAX limit provided the approaching traffic extends the green via loop detection. The proposed mitigation for this junction under the MetroWest scheme is to introduce MOVA control, which is an improved mode of operation over VA, insofar as it makes the signal controller much more intelligent in the way it can allocate green time to each approach. This will allow the MAX green time setting for Ashton Vale Road to be set at a higher level than the setting now used in VA.

The examination of the 2018 ATC data in the Technical Memorandum: 'Ashton Vale Road Traffic Counts (3 July 2018) highlights certain hours when the outflow from Ashton Vale Road is very high at up to a maximum of 290 vehicles per hour (vph). Whilst this is clearly higher than the modelled volumes exiting the estate (some 204vph 4:00-5:00pm and 172vph 5:00-6:00pm), the difference from the flows used in the modelling is not significant.

Moreover, the analysis in the Technical Memorandum also shows that the hours when these high volumes of exiting traffic occur fall outside of the usual peak periods in the wider network (at 12:00pm, 3:00pm and 4:00pm) when the volume of other movements at the junction are lower. A comparison of the total junction in-flow during these periods of high flow from Ashton Vale Road therefore shows that during these hours the total amount of traffic passing through the junction is, in fact, typically lower compared to volumes during the AM and PM peak hours. For example, the maximum hourly flow exiting Ashton Vale Road from the 2018 ATC was 290vph between 5:00-6:00pm on Saturday 17 March. The total junction in-flow for the same hour was 2,281vph. This is compared with 2,830vph in the AM peak (8:00-9:00am) and 2,989vph in the PM peak (5:00-6:00pm) used in the modelling.

As such, whilst the modelling carried out to assess the impact of MetroWest Phase 1 scheme did not explicitly consider a Manheim Auction scenario, the data from the 2018 ATC suggests that associated volumes at such times are not significantly higher than those used in the modelling. And, critically, the associated spikes in outflow from the estate coincide with lower overall flows at the junction meaning that there is greater reserve capacity in the signals and an ability to move green time around when Ashton Vale Road flows are highest The proposed mitigation measures, including the introduction of MOVA, will make the Winterstoke Road/Ashton Vale Road signals much more flexible with the ability to provide longer compensatory green times to Ashton Vale Road following a level crossing closure, particularly when competing demands at the junction are lower.

2.4 Impact of Closure

2.4.1 Issue Raised

> *"The impact of increased closures of the level crossing is illustrated in technical tables in the ch2m note, with raw numbers presented and little explanation or analyses of those numbers given, save to suggest that the impact of the increased frequency of closure is easily mitigated by the proposed minor improvement works.*
>
> *However, on investigating the values within the summarised model output it becomes clear that the proposals could potentially result in very substantial lost time available for traffic exiting*

Ashton Vale Industrial Estate. From cTc's preliminary review, even allowing for the proposed mitigation, the capacity for traffic exiting the Ashton Vale Industrial Estate is reduced by at least 30% and potentially more than 50%.

It is acknowledged that the congestion may take more than one signal cycle to clear and cycle times of the order of 160 seconds are mentioned in the report. Assuming "more than one" means at least two, this comprises 320 seconds or more. Adding to that the signal closure of 105 seconds results in significantly increased congestion for at least 425 seconds, or a little over 7 minutes. The report identifies potentially up to 5 closures per hour, or one every 12 minutes in the unlikely best-case scenario that they are equally spaced, meaning, on average 7 minutes of substantially increased congestion will be following by 6 minutes of relatively free flowing conditions (as current).

Such an impact will result in Ashton Vale Industrial Estate becoming unusable by its current occupiers for the business activities presently carried out there. The proposers are aware of but have ignored the occupiers concerns."

2.4.2 Response

The evidence presented in the MetroWest Phase 1 Ashton Vale Road: Transport Evidence Explanatory Note (23rd July 2018) provides ample commentary and explanation of the traffic modelling (LinSig and VISSIM) outputs. Section 5 summarises the LinSig analyses and states that, based on LinSig analyses, the maximum extent of the queue on Ashton Vale Road is only expected to increase from 12 to 20 vehicles with an increase in mean delay of circa 38 seconds when considering a short period immediately before, during and two cycles immediately after a closure (weekday PM peak hour). The LinSig analysis suggests that this limited net additional delay is because:

- The level crossing closure time is no longer than the typical cycle time at the existing signals during the AM and PM peak periods. As such, drivers arriving on the Aston Vale Road approach would, at worst, have the appearance of the stage controlling this arm curtailed only once;
- Lost green time to Ashton Vale Road incumbent on the closure is capable of being compensated for fully in the first 'normal' cycle sequence following the event (and the lifting of the restriction on the appearance of Stage 2). Whilst the LinSig results do predict a change in the extent of the maximum queue and average delay to drivers using Ashton Vale Road in both peak hours, the numbers of affected drivers are small whilst the change can hardly be regarded as severe in the context of NPPF;
- Further to the point above, the closure frequency with two passenger trains per hour, and even an intervening freight service, have sufficient duration between them to ensure full 'compensation' and return to normal traffic operation is achieved between each event; and
- Whilst additional green time will be needed to clear the build-up of queuing on Ashton Vale Road post-closure, the critical southbound movement on the A3029 actually benefits from fewer interruptions to its green time during a closure, when only a 4-5-6 stage sequence operates. These effects thus tend to cancel each other out when considering the capacity needed for these critical phases.

Further detailed real time analysis presented and discussed in the MetroWest Phase 1 Ashton Vale Road: Transport Evidence Explanatory Note (23rd July 2018) based on the micro-simulation traffic assessment confirms the findings from the LinSig analyses, with results from the two modelling

approaches showing a high degree of correlation. With regard to Aston Vale Road, the micro-simulation modelling assessment indicated the following:

- Queue lengths during the PM peak period are expected to extend to a length of circa 100 metres (from a current length of around 50-60 metres). This is consistent with the LinSig assessment which indicated that the predicted queue length change would be from 68 to 113 metres;
- The average delay experienced by drivers during the PM peak hour (5:00-6:00pm) as a result of the MetroWest scheme (assuming no freight in either the base or scheme) is only 10 seconds more than at present. This is because, although some vehicles will experience higher levels of delay during the three level crossing closures during this hour, this only account for a small proportion of time (less than 10 per cent of the hour). As such, the majority of vehicles will experience current or, because of the introduction of MOVA, lower levels of delay compared to current levels.

With regard to the 30-50 percent reduction in 'capacity for Ashton Vale Road, it is unclear how CTC arrive at this figure, although it seems to ignore a number of factors, notably that (1) the green time for Ashton Vale Road is currently restricted anyway by the need for the signals to service other movements, and (2) that the signals will be able to provide longer green times and hence capacity for this arm following a level crossing closure, particularly under proposed MOVA control.

The CTC objection also cites the potential for five closures an hour. It should be noted that this was presented as a sensitivity case and that the proposed MetroWest Phase 1 scheme would result only in a maximum of three closures per hour (assuming that a freight movement occurs) but more realistically only two closures per hour given that freight movements rarely occur (see Table 2.1 of MetroWest Phase 1: Winterstoke Road/Ashton Vale Road VISSIM Model Testing Report (July 2018).

The analysis given by CTC in their objection that the proposals will result in 'on an average 7 minutes of substantially congestion' on Ashton Vale Road is completely flawed, and totally exaggerates the likely extra delay that will be experienced by most vehicles exiting the Industrial Estate under the MetroWest proposals. The CTC analysis is flawed for the following reasons:

- It assumes that all vehicles are already present in the queue or arrive just as the level crossing closes. In reality this will not be the case. Whilst a vehicle arriving the instant the level crossing closes will have to wait for an initial 105 seconds during the closure of the level crossing, those arriving later than this will experience less delay and those arriving following the re-opening of the level crossing, possibly when Aston Vale Road receives its green, will suffer very little delay;
- It does not take account of the fact the first vehicles at the head of the queue will be the first to receive a green signal when the level crossing re-opens. Consequently, it is unlikely that even in this worst case, that a vehicle would experience anywhere near seven minutes of delay. The maximum delay would be 105 seconds for the level crossing closure plus the time for the signals to cycle round to Ashton Vale Road following re-opening, say conservatively 60 seconds, so circa 165 seconds, or roughly two and a half minutes;
- It ignores the fact that most of the traffic on Ashton Vale Road will discharge during the green period in the first cycle following a re-opening of the level crossing (including, as noted above, those at the head of the queue on Ashton Vale Road). Consequently, the number of vehicles unable to exit the Estate during the first green period is likely to be very few, and these vehicles will have arrived later than those who discharged during the first green and so will not experience anywhere near 7 minutes of 'congestion'; and

- Furthermore, the statement by CTC that it is seven minutes of 'increased' congestion assumes that vehicles currently leaving Ashton Vale Road leave the Estate under free flow conditions and do not suffer any delay. This is clearly not the case. LinSig modelling of the current situation suggests that on average traffic on Ashton Vale Road during the PM experiences approximately 70 seconds of delay. This would need to be deducted from the delay under the MetroWest scenario to obtain 'additional' delay as a result of the scheme.

Taking all this into consideration, the absolute worst-case extra delay experienced by a vehicle on Ashton Vale Road would be circa a minute and a half (165 minus 70 seconds). This assumes that this vehicle is already in the queue or arrives just as the level crossing closes. However, the vast majority of vehicles will experience much less than this, since the level crossing will be open for circa 90 per cent of the time and many vehicles will exit with very little delay at other times, with the result that the average delay over the course of the PM peak hour would be significantly lower and nearer to the 10 seconds predicted by the micro-simulation modelling assessment.

It is also worth emphasising that the proposed introduction of MOVA control will provide significant betterment to the operation of the Winterstoke Road/Ashton Vale Road signals. At present green time is limited to 24 seconds in the PM peak period. MOVA would be set-up with a much more generous maximum limit which would not only enable the signals to provide a longer compensatory green time following a level crossing event, but would also generally assist egress from the Estate at other times.