

Allerdale Borough Council

Planning Application ADD/2020/0001

Development Panel Report

Reference Number: ADD/2020/0001
Valid Date: 21/09/2020
Location: Dovenby Hall Estate Cockermouth
Applicant: M Sport Ltd
Proposal: Submission of further details requiring approval in accordance with the provisions of Noise Management Plan Issue 3b (approved under condition 6 of planning permission 2/2014/0350).

RECOMMENDATION

That the details submitted, as amended in May 2021 and as set out at sections 3.3 and 13.1 below, be approved.

1.0 Summary

<u>Issue</u>	<u>Conclusion</u>
Trackside Monitoring Number and Location	Based on the advice from the Council's Environmental Health Officer and the Council's appointed acoustic engineer, a single monitor at Track Centre as shown on drawing 081010-1193 Track Layout - Monitoring Location is considered to be acceptable.
Anemometer and Wind Vane	Based on the advice from the Council's Environmental Health Officer and the Council's appointed acoustic engineer, the details of the anemometer and wind vane as shown on drawing 081010-1191 Anemometer and wind vane position, are considered to be acceptable.
Noise Reduction Figures for LAFmax and LAeq noise indices	Based on the advice from the Council's Environmental Health Officer and Council's appointed acoustic engineer, the reduction figures of 36dB and 39dB respectively, for use for the two zones allowing levels of 76dB and 73dB within the community for the LAFmax, and the

	reduction figure of 30dB for the LAeq 1 hour and LAeq 5mins, as set out in section 4 'Compliance Methodology' of the document, 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021, are considered to be acceptable.
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2.0 **Introduction/Background**

- 2.1 Planning permission 2/2014/0350 granted full approval for the construction of an Evaluation Centre (B1), testing and evaluation facility (2.5km in length) (Sui Generis), car parking (242 spaces), earthworks including sound attenuation bunds, surface water attenuation ponds, grounds maintenance shed incorporating fuel store (B1 & B8) and separate underground fuel tank, temporary widening of eastern access from A594 for construction vehicles, as well as the demolition of up to seven buildings including School House, Hodgson House and Howard House, and outline planning application for expansion space of 5000sqm (use class B1), Offices 2450sqm (B1), 60 bed Hotel 6000sqm (C1) all to include associated parking and external works, at Dovenby Hall, Dovenby.
- 2.2 Planning permission 2/2014/0350 was granted subject to conditions. Condition 6 of planning permission 2/2014/0350 prevents operational use of the test track until an updated Noise Management Plan based on the principles and community noise levels set out in the Noise Management Plan Issue No 1 dated November 2014 (excluding Cat 1 activity and including maximum noise levels) is submitted to and approved in writing by the Local Planning Authority, and until completion of physical testing on site, following completion of the test track, in order to demonstrate compliance with the agreed noise levels.
- 2.3 In 2016, under reference CON4/2014/0350, the Council considered and approved Noise Management Plan Issue No. 3b. Noise Management Plan Issue No. 3b re-iterated the basic principle of the Noise Management Plan Issue 1, that the noise monitoring methodology would operate using trackside monitoring, with an 'agreed noise reduction' figure (ANR) applied to recorded trackside noise levels, to determine the noise levels being received in the community. The 'agreed noise reduction' figure (ANR) is the reduction in the level of noise over the distance separating the track from receptors in the surrounding area.
- 2.4 The approved Noise Management Plan Issue No. 3b specifies that the noise level control at noise sensitive receptors applies only to noise which is a direct effect of operation of the test track, and does not include background noise. Once operational, it is important to understand, therefore, that it will not be possible to simply take readings within the community to establish whether the community noise levels are being exceeded or not, because these readings would be a combination of both track noise and background noise. Compliance with the community noise levels set by the Noise Management Plan Issue No. 3b will be monitored by taking the recordings at trackside and deducting the 'agreed noise

reduction' (between the source and receptors), to determine the community level. It is crucial therefore, that the methodology for monitoring noise levels at the trackside and any reduction factor approved by the Council, is robust and effective.

- 2.5 Noise Management Plan Issue No. 3b contains the approved community levels and hours/days of use that cannot be exceeded by track use. The noise indices are to be measured using:

L_{Aeq} 1 hour – average noise experienced over a rolling 1 hour time frame
L_{Aeq} 5 mins - average noise experienced over a rolling 5 minute time frame
L_{AFmax} - the loudest instantaneous noise level

- 2.6 The Officer's report to Development Panel for CON4/2014/0350 set out and considered in detail those matters that were acceptable within Noise Management Plan Issue No. 3b in relation to the bulleted requirements of condition 6. The details considered acceptable and approved within Noise Management Plan Issue No. 3b included:

- 45 days of use of the track within any calendar year falling within Category A, where the maximum community noise level as a direct result of noise generated on the test track shall not exceed 55dB_{L_{Aeq} 1hour} and 60dB_{L_{Aeq} 5mins}. Category A days will be Monday to Friday only, no more than one day per week, and no more than five consecutive hours between 9:30am and 4:30pm. After each category A day, there shall be one day of no track use, other than Category C.
- 75 days of use of the track within any calendar year falling within Category B, where the maximum community noise level as a direct result of noise generated on the test track shall not exceed 50dB_{L_{Aeq} 1hour} and 55dB_{L_{Aeq} 5mins}. Category B days will be Monday to Saturday only, no more than two days per week, and no more than seven consecutive hours, between 08.30 am and 5.00pm during British Summer Time and between 08.30am and 7.00pm during the remainder of the year. Only one Saturday use per month. After each category B track use day there will be at least one day of no track use other than category C use.
- Free use of the track for activity falling within Category C, where the maximum community noise level as a direct result of noise generated on the test track shall not exceed 43dB_{L_{Aeq} 1hour} and 48dB_{L_{Aeq} 5mins}. Monday to Saturday only, between 08.30 am and 5.00pm during British Summer Time and between 08.30am and 7.00pm during the remainder of the year.
- No Category A, B, or C use on Sundays or Bank Holidays.
- Application of the noise limits to any noise sensitive receptor.
- 'Maximum' community noise levels measuring instantaneous noise (L_{AFmax} levels) as a direct result of noise generated on the test track, set

at 73dB or 76dB depending on area, indicated by a zone map in Appendix B. The 73dB limit applies primarily to Dovenby village and a small number of isolated dwellings, with 76dB applied to the remaining area of a 1.5km buffer drawn around the site.

- Details of M Sport's operational and management structure.
- Details of how the Council will access a noise monitoring scheme at all times.
- A detailed complaints procedure.

2.7 In relation to bullet point 5 of condition 6, 'Details of the sound control and monitoring scheme and methodology used to demonstrate compliance with the community levels', the Officer's report for CON4/2014/0350 specified that the basic principles of the noise monitoring scheme were agreed at the planning application stage (i.e. that noise will be measured at trackside), but that it was considered appropriate to agree full details of the sound control and monitoring scheme and methodology at the physical testing phase. Noise Management Plan Issue No. 3b approved under CON4/2014/0350 therefore required the further written approval of the Council on a number of detailed matters, prior to operation of the track:

- I. The number and location of trackside monitoring equipment.
- II. Anemometer and wind vane position.
- III. The methodology to be used in the physical testing to demonstrate the 'agreed noise reduction'.
- IV. The 'agreed noise reduction' figures for the LAeq 1 hour and LAeq 5 mins, and the LAFmax.
- V. The details of any Public Address System, before any such system is used.

2.8 The Council has subsequently given its written approval for the methodology for physical testing that took place in July 2020, which followed earlier testing in 2017, 2018 and 2019, addressing point III above. The testing itself and the findings will be discussed in more detail below.

2.9 The applicant has confirmed that there is no intention at this stage to have a Public Address System. Should this position change in the future, then full details would need to be agreed by the Council, before it could be used. It is not therefore necessary to consider point V any further at this stage.

3.0 Proposal

3.1 This submission seeks the Council's approval of those details that remain outstanding from the list at paragraph 2.7 above and as specified within the approved Noise Management Plan Issue No. 3b, namely:

- I. The number and location of trackside monitoring equipment.

- II. Anemometer and wind vane position.
- IV. The noise reduction figures to be applied to measured noise levels at trackside (LAeq 1hour, LAeq 5mins and LAFmax), in order to calculate levels in the community.

3.2 These details are submitted pursuant to the requirements of the approved Noise Management Plan Issue No. 3b. The Council is therefore considering this application on the basis that any details approved would need to be complied with at all times when the track is operational, otherwise, this would constitute a failure to comply with the approved Noise Management Plan Issue No. 3b and thus a breach of condition 6 of planning permission 2/2014/0350.

3.3 The submission is technical in nature, and detailed discussions between the applicant's representatives and the Council have been undertaken prior to and during the course of the application. This has involved the applicant's appointed acoustic engineer – Philip Dunbavin Associates (PDA) and the Council's Environmental Health Officer (EHO), the latter informed by advice from RS Acoustic's Ltd. (RSA). RSA are an independent acoustic engineer appointed by the Council. This has led to the submission of further details and supporting information in November 2020 and May 2021. The plans/documents now submitted for approval are:-

- Drawing 081010-1191 Anemometer and wind vane position
- Drawing 081010-1193 Track Layout - Monitoring Location
- Section 4 of the document 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021.

The suite of documents can be found on-line here:-

<https://allerdalebc.force.com/pr/s/planning-application/a3X3X000004DFBJUA4/add20200001?tabset-e3f5c=2>

3.4 The original submission and the subsequent submissions in November/May have included a number of other supporting documents. These are listed here for completeness, but are not specified for approval by the applicant:

- Application Form
- Covering letter (Sept 2020)
- Planning Statement – Pegasus Group
- Derivation of Noise Reduction Levels for compliance with the Noise Management Plan Report September 2020: Ref J002812/4506/ECE/01 – PDA Acoustic Consultants

- Acoustic Appraisal of Noise Emissions for Compliance with the Requirements of Condition 6 September 2020: Ref J002812/4559/ECE/01– PDA Acoustic Consultants
- 2020 Test Scope and Data
- Supplemental Letter dated 5th November 2020 from Pegasus Group
- Further Information - Measurements used within PDA assessment LAeq (Filtered) 5-11-2020
- Further Information - Measurements used within PDA assessment LAeq (No filtering) 5-11-2020
- Further Information - Measurements used within PDA assessment LAmax 5-11-2020
- PDA Acoustic Consultants Technical Note dated 23rd October 2020
- Amended Noise Monitoring System Specification - Cirrus Environmental v1.7 4.11 (dated 5-11-2020). Withdrawn (confirmed 5th May 2021).
- Supplemental letter dated 5th May 2021 from Pegasus Group
- Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021.
- PDA response to objectors.
- PDA Technical Note dated 19/01/2021.
- PDA Technical Note dated 26/02/2021.

3.5 Drawing 081010-1191 Anemometer Position, indicates that a WindSonic 75 wind speed and direction sensor will be mounted to a 6.5m pole (3m clear of an adjacent bund), to the southern section of the track.

3.6 Drawing 081010-1193 Track Layout - Monitoring Location, indicates the siting of a single 'Track Centre' microphone, positioned approx. two thirds along the straight of the track that lies adjacent to the Evaluation Centre building and parking area. The details of the sound level meter are already contained within the approved Noise Management Plan Issue No. 3b.

3.7 The noise reduction figures sought for approval for use within the monitoring system are contained within Section 4 'Compliance Methodology', of the document 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021. This supersedes those figures set out originally within Table 16 of PDA report 'Derivation of Noise Reduction

Levels for compliance with the Noise Management Plan Report', September 2020: Ref J002812/4506/ECE/01.

- 3.8 For LAeq 5mins and LAeq 1 hour noise indices, the proposed noise reduction figure is to be deducted from trackside readings to determine compliance with the approved community levels is 30dB.
- 3.9 For LAFmax noise index, the proposed noise reduction figures are: 39dB for those areas where the community level is 73dB, and 36dB where the community level is 76dB. Application of these reduction figures would essentially provide limiting levels for track use of:

LAeq

Category A Days: 85dB LAeq 1hour / 90dB LAeq 5min

Category B Days: 80dB LAeq 1hour / 85dB LAeq 5min

Category C Days: 73dB LAeq 1hour / 78dB LAeq 5min

LAFmax

112dB LAFmax

Any exceedance of these noise levels at trackside would therefore constitute a breach of the approved community noise levels.

4.0 Site

- 4.1 The submission relates to the testing and evaluation centre that is currently nearing completion, by M Sport Ltd at the Dovenby Hall Estate, Dovenby. Dovenby Hall is a Grade II listed building and the hall and associated grounds are the established premises of this business and a number of others. The construction of the test track is complete, and the evaluation centre is nearing completion. It is understood that at the time of testing in July 2020, the external cladding to the evaluation centre building and most bunding, was in place.

5.0 Relevant Planning History

- 5.1 The relevant history is set out in the table below.

2/2014/0350	Demolition of up to seven buildings including School House, Hodgson House and Howard House. Full planning application for M Sport Evaluation Centre (B1), testing and evaluation facility (2.5km in length) (Sui Generis), car parking (242 spaces), earthworks including sound attenuation bunds, surface water attenuation ponds, grounds maintenance shed incorporating fuel store (B1 & B8) and separate underground fuel tank.
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	Temporary widening of eastern access from A594 for construction vehicles. Outline planning application for future expansion space of 5000sqm (use class B1), Offices 2450sqm (B1), 60 bed Hotel 6000sqm (C1) all to include associated parking and external works. APPROVED
AM/2014/0350	Non-material amendment to condition 6 relating to noise on planning approval 2/2014/0350 APPROVED
CON1/2014/0350	Compliance with conditions 5, 8, 17, 18 & 19 of planning approval 2/2014/0350 APPROVED
CON2/2014/0350	Compliance with conditions 13 & 21 on planning approval 2/2014/0350 APPROVED
CON3/2014/0350	Compliance with condition 22 of planning approval 2/2014/0350 APPROVED
CON4/2014/0350	Compliance with condition 6 as amended under planning approval AM/2014/0350 relating to noise APPROVED
CON5/2014/0350	Application for approval of conditions conditions 4, 10, 11 and 12 of application 2/2014/0350 APPROVED
CON6/2014/0350	Application to discharge condition 6 updated noise management plan on application 2/2014/0350 WITHDRAWN
FUL/2020/0279	The formation of 2No bunds within the 2.5km test track (retrospective) APPROVED
VAR/2020/0507	Removal of condition 16 of planning permission 2/2014/0350 – highway works PENDING

6.0 **Representations**

Bridekirk Parish Council

6.1 No comments received.

Brigham Parish Council

6.2 No comments received.

Broughton Parish Council

6.3 Comment that the applicant should abide by or better the conditions relating to noise on the original planning permission.

Broughton Moor PC

- 6.4 No objections or comments.

Papcastle Parish Council

- 6.5 No objection.

Dearham Parish Council

- 6.6 No comments received.

ABC Environmental Health

- 6.7 The Council's Environmental Health Officer has confirmed that the details submitted in May 2021 are considered to be acceptable and can be approved. The comments received are set out in more detail in the assessment below.

Other representations

- 6.8 The application has been advertised by press advert, site notice and neighbour letter. Subsequent consultation by letter was undertaken following the submission of further information in May 2021.
- 6.9 107 letters of representation had been received in relation to the application to date, 52 letters of support and 53 letters of objection, with two letters raising neither objection nor support. A number of the representations, particularly those objecting to the scheme, are detailed and technical. Officers have summarised the representations received and, given the length, the summary is provided in Annex 1, with the full text of the representations available here:

<https://allderdalebc.force.com/pr/s/planning-application/a3X3X000004DFBJUA4/add20200001>

7.0 Environmental Impact Assessment

- 7.1 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 are relevant.
- 7.2 The overall development subject of application 2/2014/0350 was determined to be EIA development and an Environmental Statement accompanied the original application.
- 7.3 Regulation 9 is considered to apply to the current submission, on the basis that it appears to the local planning authority that it is a subsequent application in relation to Schedule 2 development; it has not itself been the subject of a screening opinion or screening direction; and it has not been accompanied by a statement referred to by the applicant as an environmental statement for the purposes of these Regulations; the application for planning permission to which

the subsequent application relates was accompanied by a statement referred to by the applicant as an environmental statement for the purposes of these Regulations.

- 7.4 It appears to the local planning authority that the environmental information already before it, is adequate to assess the significant effects of the development on the environment. This is on the basis that this subsequent application does not contain details for approval that would alter noise levels in the community, over and above those levels previously approved. The allowable noise limits in the community arising from use of the track have already been set through the approved Noise Management Plan Issue No. 3b. The current submission relates only to the detail of the monitoring methodology to ensure that these levels are adhered to.
- 7.5 In accordance with the Regulations, the Local Planning Authority is required to take the environmental information into consideration in their decision for subsequent consent.

8.0 Duties

- 8.1 Section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990 requires that the Local Planning Authority shall have special regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses.
- 8.2 Regulation 9 of the Conservation of Habitats and Species Regulations 2017, requires all public bodies to have regard to the requirements of the Habitats Directive in the exercise of their functions, particularly when determining a planning application for a development which may have an impact on designated sites or European Protected Species ("EPS"), such as bats, great crested newts or otters.
- 8.3 Whilst these duties are noted, the submission for approval of further details relates to the noise monitoring methodology for the site, which is not considered to result in any change to the significance of effects in relation to the setting of the listed Dovenby Hall, or in relation to protected sites and species, than the originally approved scheme.

9.0 Development Plan Policies

Allerdale Local Plan (Part 1) 2014

- 9.1 The following policies are considered particularly relevant:-

S1 Presumption in Favour of Development
S2 Sustainable Development
S32 Safeguarding Amenity

They can be viewed here:

<https://www.allerdale.gov.uk/en/planning-building-control/planning-policy/local-plan-part-1/>

Allerdale Local Plan Part 2 (2020)

9.2 No policies are considered relevant.

10.0 Other material considerations

National Planning Policy Framework (NPPF) (2019)

10.1 Paragraph 213 advises that the weight afforded to development plan policies can vary according to their degree of consistency with the framework (the closer the policies in the plan to the policies in the Framework, the greater the weight that may be given).

10.2 The NPPF is available to view at:-

<https://www.gov.uk/government/publications/national-planning-policy-framework--2>

11.0 Policy weighting

11.1 The Allerdale Local Plan (Part 1) 2014 and the Allerdale Local Plan (Part 2) 2020 policies are material to the determination of the application. The relevant policies of the plan are considered to be consistent with advice contained within the NPPF 2019 and can therefore carry full weight.

12.0 Assessment

12.1 This submission presents information, utilising the results of the noise data gathered through physical testing in July 2020 to,

- a) demonstrate and justify the number and location of monitoring equipment - a single track monitor is proposed (described at 'Track Centre' within the submission);
- b) demonstrate and justify the location and detailing of an anemometer and wind vane; and
- c) demonstrate and justify the physical noise reduction measured between the trackside monitor and representative receptor monitors during the physical testing, in order to establish the noise reduction figure for noise indices LAeq 1 hour and 5mins, and LAFmax, (described as the 'Agreed Noise Reduction' (ANR), within the approved Noise Management Plan Issue No. 3b), that, going forward, will be deducted from track noise measurements during the operational phase of the track, in order to

determine whether approved noise levels in the community are being breached or not.

- 12.2 The original submission also provided some commentary within the document 'Acoustic Appraisal of Noise Emissions for Compliance with the Requirements of Condition 6 September 2020: Ref J002812/4559/ECE/01– PDA Acoustic Consultants', to compare and validate the noise model results described within the Environmental Statement (ES) prepared for the scheme during the original planning application (2/2014/0350), in order to provide confidence that the track can operate within the parameters identified in the ES and as subsequently agreed through the approval of the maximum allowed community levels.

Physical Testing

- 12.3 As this submission relies on the physical testing data gathered in July 2020, the robustness of that exercise is essential. The scope for the further physical testing undertaken in July 2020 was approved by planning officers of the Council, following consultation with colleagues in Environmental Health. This approval was necessary before the testing could commence. The physical testing event in July 2020 was attended by Environmental Health Officers. No concerns have been raised by Environmental Health or the Council's appointed Acoustic Engineer, in relation to the testing scope itself for the undertaking of the physical test, nor the conditions in which it was undertaken.
- 12.4 For the benefit of Members, the following points from the test scope are noted:
- a) Testing utilised the Fiesta WRC and Bentley GT3, each with open race silencers.
 - b) Simultaneous measurements were undertaken at 9 trackside locations and at 8 representative receptor locations, to ensure data was gathered on the same basis and under the same conditions.
 - c) Weather conditions were monitored continuously.
 - d) The testing utilised 'Circuit 2' configuration.
 - e) All trackside monitoring positions were undertaken at a minimum of 8m from the track edge such that the measurement equipment was typically 10m from the driving line.
 - f) The testing undertook alternating track activity every 15-minutes (a 15-minute period when the track was active and a 15-minute period when the track was not active with a total activity from the site for each vehicle of 30-minutes within a 1-hour period).
- 12.5 Supporting information confirms that the consultant lead undertaking the July 2020 physical testing and review on behalf of the applicant is a professional member of the Institute of Acoustics.
- 12.6 Supporting information confirms that the Fiesta WRC and Bentley GT3 were utilised as they are considered to represent typical noisiest track use for M Sport Ltd, and that the vehicles were used on the track without any other controls or management procedures being deployed (such as a 'super silencer'), so as to generate a 'worst case' noise level. It is stated that this allowed for an increased signal to noise ratio at the receptor locations, in order to establish the level

difference between the source and receiver. Also confirmed is that the WRC has an exhaust out of the rear of the vehicle and the Bentley GT3 has its exhaust out of the sides of the vehicle. Utilising these two different types of vehicles allowed for an assessment of any variability due to these typical locations of the exhaust.

- 12.7 Supporting information confirms that weather conditions during the testing utilised an anemometer and wind vane in the same location as that proposed for the operational stage as described above. Weather conditions were 15 degrees, wind speeds between 4.3 and 5.7m/s - average 4.8m/s, South West wind direction, 100% cloud cover and mostly dry with some light precipitation.
- 12.8 The Council's Environmental Health Officer has noted that measurements were continuous including audio recordings, all sound level meters were time synchronised via a master timepiece for accuracy; previous testing had not included simultaneous measurements continually at all 16 locations with real-time measurements, however this was adopted in the July 2020 test, which is considered a robust approach, this test also included video evidence at R8.
- 12.9 Based on the advice from Environmental Health and the Council's appointed Acoustic Engineer, the physical testing itself is considered to have been carried out robustly. The influence of weather conditions on the physical testing is discussed in further detail below.

Location/Number of Noise Monitors at Trackside

- 12.10 The approved Noise Management Plan Issue No. 3b requires noise monitoring to be carried out at all times during the use of the test track via a trackside monitoring system. The submission confirms that the trackside monitor will be linked to a purpose-built computer system that utilises the live data. The submission proposes the siting of a single 'Track Centre' microphone, positioned approx. two thirds along the straight of the track that lies closest to the Evaluation Centre and parking area, as shown on 'Drawing 081010-1193 Track Layout - Monitoring Location'.
- 12.11 Utilisation of a single microphone at the location proposed as 'Track Centre' is considered within the PDA report - Derivation of Noise Reduction Levels for Compliance with the Noise Management Plan Sept 2020. In discussing the physical testing results for determination of the noise reduction factor for LAFmax, the report sets out that the LAFmax readings were highest for those monitoring locations closest to straights on the track where vehicles were at the heaviest acceleration (at Track Centre, and at TP7 and TP10). The report suggests that use of Telemetry Point 10 for operational recording would not be a reliable method for accurately calculating noise level from the test track, on the basis that the GT3 vehicle was recorded to be louder than the WRC, when static testing indicated the opposite. Telemetry Point 7 indicated similar readings to the Track Centre and is therefore considered to provide no benefit operationally.
- 12.12 The applicant's acoustic consultant therefore submits that, regardless of where the vehicle is on the track, when it is under heavy acceleration with an open throttle, this will generate the maximum LAFmax level during track use. The

applicant's acoustic consultant goes on to state that the data demonstrates that the most consistent and therefore most accurate location for the noise monitor is at the Track Centre location. It is for these reasons that a single monitor at the Track Centre location is proposed.

12.13 This has been a matter of some discussion during the course of the application, between the respective acoustic engineers and Environmental Health officer. It has included the further consideration of 'pops and bangs' and how these might be captured as instantaneous events by the LAFmax measurement. Further examples from the physical test data were provided in this respect by the applicant's acoustic engineer in January 2021, which indicated that the noise level associated with the vehicle under heavy acceleration resulted in the maximum noise level at the receiver and not the pop events, providing further justification that a single track monitor at the location proposed would capture the worst case instantaneous noise events.

12.14 The Council's Environmental Health Officer has commented as follows:

'The testing in July utilised 7 telemetry points (TP's) around the track to capture measurements simultaneously which was considered to be a more robust approach than previous tests. Having assessed the noise measurements from all 8 monitoring locations on track, it demonstrates that the Track Centre (TC) monitoring location measured the highest LAFmax levels during a circuit around the track. This information has been presented in table 14 in PDA's report "Derivation of noise reduction levels for compliance with the noise management plan" - September 2020.

As these TPs are located at positions where the vehicle is slowing down or on bends this indicates that the noise level generated at these points are not consistent with periods when the vehicles are generating their maximum noise levels. The measured data at TP7 was similar to TC monitoring location and would not provide any additional data that would not be obtained by measurement at the TC location.

The measured test data demonstrates that the TC monitoring location is the most consistent and therefore most appropriate location when measuring the LAFmax and LAeq levels being produced when the track is in use.

I agree that the position of the track side monitor is appropriate in accordance with the monitoring location plan Drawing No: 881010/1193'.

12.15 Based on the advice from Environmental Health and the Council's appointed Acoustic Engineer, Officer's consider that the location and number of noise monitors at trackside is acceptable as shown on drawing 081010-1193 Track Layout - Monitoring Location and these details are recommended for approval.

Anemometer and Wind Vane position.

- 12.16 The submission contends that the proposed Anemometer and Wind Vane position as shown on 'Drawing 081010-1191 Anemometer position' is the optimal location within the site. The same location for this equipment was utilised for the testing, as is proposed for the operational stage.
- 12.17 The Council's appointed acoustic consultant has not raised any concerns with the detail of the Anemometer and Wind Vane position, noting it has a 3 metre clearance from the adjacent bund, it is a considerable distance from the new evaluation centre, and it is sufficiently distanced from the main straight of the track. He goes on to state that it is considered unlikely that typical track use will negatively impact on the recorded weather data and its positioning should ensure that all wind directions are sufficiently captured. As wind conditions will be monitored continuously and data logged, he concludes that previously recorded weather conditions or event/data anomalies can be reviewed at a later date if required. This would be as part of the annual review of the Noise Management Plan, as required by condition 6 of the original permission.
- 12.18 The Council's Environmental Health Officer has commented as follows:

'I can confirm that the proposed position to measure wind speed and direction will not be affected by turbulence from passing cars and is situated far enough from the main straight of the track and the MEC building which will avoid any shielding effects. This position should ensure that all wind directions are captured when the track is in operation.

I agree that the position and height of the anemometer and wind vane are appropriate in accordance with the specification stated on the "Anemometer location plan" Drawing No: 081010/1191'.

- 12.19 Based on the advice from Environmental Health and the Council's appointed Acoustic Engineer, Officer's consider that the location and detailing of the anemometer and wind vane are acceptable and these details are recommended for approval.

Acceptability of the proposed noise reduction figures

- 12.20 The approved Noise Management Plan Issue No. 3b states that, whilst the 'Community Levels' control the noise level permissible from the test track at sensitive receptors, the method for checking compliance is by measuring at trackside and deducting the 'Agreed Noise Reduction' (ANR) from trackside measurements, to determine what the receiving noise level in the community is. The noise reduction for each noise index (LAeq 1 hour, LAeq 5 mins and LAFmax) requires approved by the Council and is essentially the numerical difference between the noise measured at the track and the noise measured at the receptor, as noise levels will reduce over distance, to be demonstrated by the physical testing data. The Noise Management Plan Issue No. 3b requires that the 'Agreed Noise Reduction' (ANR) be confirmed through physical testing prior to full operational use of the track.

- 12.21 As the Community Levels approved within Noise Management Plan Issue No. 3b relate to track activity only, the submission explains that it has been necessary to correct each of the measured receptor levels when the track is in use for the existing ambient noise climate at each receptor. It states that this is standard practice for the correction of a measured level for the influence of an existing noise source and uses standard acoustic theory.
- 12.22 The approach to calculating the proposed ANR's is set out in the submission document 'Derivation of Noise Reduction Levels for compliance with the Noise Management Plan Report, September 2020: Ref.J002812/4506/ECE/01 – from PDA Acoustic Consultants.
- 12.23 The noise reduction for both LAeq and LAFmax for compliance with the community noise limits are derived through assessing the sound level data and audio from the testing undertaken in July 2020. Utilising the data obtained from the July 2020 physical test, PDA have assessed the sound levels whilst the test track was operational and also the sound level during the periods when the track was not operational, in order to establish the change in level due to the operation of the track. PDA undertook an additional assessment of the existing noise climate at each monitoring location in the community and where possible removed discrete noise events that impacted on the measurements.
- 12.24 The following points are noted from the submitted PDA report 'Derivation of Noise Reduction Levels for compliance with the Noise Management Plan:
- a) PDA have calculated the LAeq noise level when the site is not active and the noise level when the site is active to determine the noise level experienced in the community when each vehicle runs on site.
 - b) At each receptor location, the existing noise climate was high such that its influence presented difficulty in determining ANRs for the LAeq assessment (1hr and 5mins). The results have indicated that there is no discernible difference in noise levels experienced in the community with and without the track being operated for the LAeq.
 - c) In order to determine the ANR, a further analysis was carried out on the measured levels by removing discrete noise events associated with the existing noise climate in the community (such as a car or HGV passing by). This process was undertaken on the data both with and without the track running.
 - d) This process artificially lowers the existing community noise level.
 - e) Section 6 of the report explains how logarithmically, the LAeq from the test track only has been derived from the LAeq filtered for discrete events when the track is active and not active. The ANR is then obtained for receptors 1, 2, 3, 4, 6 and 7 by deducting the LAeq from track only measurements, from the LAeq track centre figure.
 - f) From the results for both vehicles, the worst case ANR figure for the LAeq measurement is taken forward for each receptor.
 - g) For Receptor 5 and Receptor 8, the approach adopted by PDA was unable to establish the LAeq ANR levels due to the influence of a very high and continuous noise climate. The influence of the existing noise

climate could not be accurately removed, therefore it was not possible to accurately assess the noise level produced by the test track in isolation at these receptors. ANR's at these receptors were therefore derived from the predictions presented within the Environmental Statement within this original PDA report.

- h) For the determination of the LAF_{max} ANR's, trackside monitoring was undertaken at Telemetry Points (TP) 2, 3, 7, 9, 10, 12, 13 and Track Centre (TC). These TPs were proposed to be used to assess the LAF_{max} at various parts of the track that were closest to each receptor.
- i) These TP's are not to be used operationally, a noise reduction factor would be established to determine the level difference between the TC and each respective TP. When the vehicle went past a TP this would trigger the TC to record the level. Based upon the knowledge of the level difference between the TC and each TP, the LAF_{max} noise level at each TP could be extrapolated.
- j) Tables 13 and 14 note the LAF_{max} levels recorded at each noise monitor for the WRC and Bentley GT3.
- k) Noise monitors at TC, TP7 and TP10 do show elevated levels and these locations correspond to straights in the track. These results therefore confirm that the highest LAF_{max} levels are generated when the vehicles are under heavy acceleration on a straight part of the track.
- l) The data demonstrates that the most consistent and therefore most accurate location was at the TC location.
- m) The ANR for the LAF_{max} is calculated by subtracting the highest LAF_{max} at the TC from the highest LAF_{max} at the receptor location.
- n) From the results for both vehicles, the worst case ANR figure for LAF_{max} is taken forward for each receptor.
- o) This approach is stated to overestimate the actual noise from the use of the track, providing increased protection to the community.
- p) Table 16 of the original report set out the calculated ANR's for each of the noise indices, for the eight representative receptors.

12.25 This original PDA report then took forward the worst case (or lowest) reduction figure for each noise index, and explained that these would be the controls used within the monitoring system to ensure community levels were not exceeded.

12.26 Subsequent to the original submission setting out the derivation of the proposed noise reduction figures, extensive dialogue has been undertaken in relation to various matters relating to the agreement of these reduction figures. These discussions have culminated in the submission of further information/assessment in relation to the derivation of the LAF_{max} noise reduction figure (primarily PDA Technical Note dated 19th January 2021) and the LA_{eq} noise reduction figure in relation to Receptor 5 (PDA Technical Note dated 26th February 2021).

Noise reduction for the LAF_{max}

12.27 The noise reduction figure for the LAF_{max} was calculated by arithmetically subtracting the highest measured LAF_{max} noise level at the trackside monitors and the highest measured LAF_{max} at the monitoring locations within the community. Once again filtering out measurements which were influenced by

non-track related activity in the existing ambient noise climate when the track was active.

- 12.28 With regards to the derivation of the reduction figure for the LAFmax, concerns were expressed by the Council to this approach, on the basis that it would seem to allow the LAFmax levels from one event to be deducted from the LAm_{ax} of another, different event and not the highest levels at track and receptors for the same event. Such an approach would mean that the noise reduction identified would not reflect the attenuation of the LAFmax event as actually experienced trackside to that experienced at the receptor.
- 12.29 The Council's appointed acoustic engineer went on to provide some examples of the highest noise levels measured both at Track Centre and at Receptor 5 from the same circuit when the track was in use without influence from ambient noise sources. This considered the issue of a time delay due to the distance the sound has to travel between the track and receptor.
- 12.30 Subsequently, an additional response to this matter was provided by the applicant's appointed acoustic engineer (PDA Technical Note 19th January 2021). This response considered in more detail the relevant time delay for sound to travel from the track to the receptor, and responded in detail to the examples provided by the Council's appointed acoustic engineer, giving reasons as to why these examples were not appropriate to determine the reduction figure in their opinion. This further response from the applicant's acoustic engineer provided additional examples to calculate the reduction figure at Receptor 5 through physical measurements when considering two measured levels from the same event on the track, (Receptor 5 being the representative receptor from the 8 utilised which showed the lowest or worst case reduction in noise from the track). Example 6 considered a time history of Track Centre and Receptor 5 at approximately 12:53:47 whereby the highest Track Centre measured level is 112.7 dB and the highest level measured at Receptor 5 is 76.6dB which provides an ANR of 36db.
- 12.31 This further information has subsequently been considered by the Council's appointed acoustic engineer and the Council's EHO. The Council's appointed acoustic engineer notes that it is evident that, when looking at time delays and the corresponding receptor values, there is a range of noise reduction values and the result can vary considerably, depending on the time interval chosen. However, he states that, following a comprehensive examination of the measured sound level data for receptor 5, the approach adopted by PDA is considered to be reasonable with regard to deriving an appropriate LAFmax noise reduction value. He notes that the 'ANR' can be checked and adjusted once the track is fully operational. This would be through the review process secured by condition 6.
- 12.32 The Council's EHO has stated that,

'I agree that an ANR of 36dB is reasonable and justified based upon the following principles:

Due to the speed of sound, the event on the track that generates the LAFmax level occurs on the track will be observed prior to its measurement at R5. As the speed of sound is approximately 340m/s and the distance between this location on the track and the fact that R5 is 800m away, the time delay would therefore be circa 2.3 seconds. On assessing the test data and listening to the audio we can conclude that the highest LAFmax at R5 is when the vehicle is travelling down the straight prior to it passing the TC.'

- 12.33 Based on the advice from Environmental Health and the Council's appointed acoustic engineer, Officer's consider that the noise reduction of 36dB for the LAFmax arising from the relationship to receptor 5 has now been robustly demonstrated.
- 12.34 As discussed in more detail below, there are two differing levels providing limits in the community for the LAFmax noise index. These two limits are defined by a yellow zone and blue zone within the approved Noise Management Plan 3b. The blue zone has a limit of 73dB for the LAFmax and the yellow zone has a limit of 76dB. Receptor 5 lies within the yellow zone and, based on advice from the EHO and the Council's appointed acoustic engineer, Officer's consider that the 36dB noise reduction discussed above, is considered acceptable as the noise reduction figure for this yellow zone. For the blue zone, receptor 2 is shown to demonstrate the lowest or worst case noise reduction from the physical testing, a reduction figure of 39dB. Therefore this noise reduction figure is also submitted for approval. Both figures will essentially result in the same controlling limit at trackside (112dB) due to the 3dB difference in community levels for each zone. No specific comments or concerns have been raised in respect to the proposed reduction figure of 39dB for the blue zone by the EHO and the Council's appointed acoustic engineer. The Council's EHO confirms that Receptor 5 is the most significant or 'key' receptor regarding the LAeq and LAmx noise reduction factors which will govern the monitoring system on track side.
- 12.35 To conclude therefore, based on the advice received, Officer's recommend that the two noise reduction figures for the LAmx of 36dB for the yellow zone (Community Level of 76dB), and 39dB for the blue zone (Community Level of 73dB) can be approved.

Noise reduction for the LAeq

- 12.36 With regards to the derivation of the reduction figure for the LAeq (1 hour and 5 mins), concerns were expressed by the Council as to the reliance on modelled data from the Environmental Statement prepared in 2014 for the original planning application. The applicant's original submission in September 2020 relied on the modelled data (as opposed to actual data from the physical testing on site), for receptors 5 and 8 (Receptor 5 is located near to Bridekirk and Dovenby School and Receptor 8 is located next to housing along the A594), due to the influence of a very high and continuous noise climate (notably frequent passing motor vehicles). PDA stated that the influence of the existing noise climate could not be accurately removed from the assessment period of 15 minutes, therefore it was

not possible to accurately assess the noise level produced by the test track in isolation at these receptors.

- 12.37 Having considered the test data and listened to the audio, the Council's advising acoustic engineer and Environmental Health Officer concur that, for receptor 8, the measurement results are dominated by the frequent traffic on the A594, which is adjacent to the monitoring location.
- 12.38 However, having assessed the data and listened to the audio, the Council's advising acoustic engineer and Environmental Health Officer were able to identify shorter assessment periods which included a complete circuit of the track, when the track was active and there was no influence from local noise sources just track noise only, for receptor 5. The Council's advising acoustic engineer provided examples whereby the physical data could be utilised to derive a reduction figure for receptor 5, using these shorter measurement/assessment periods. Shorter periods would also minimise the influence of noise from local sources. On this basis, it was requested that the applicant used the actual measured physical data to determine the reduction figure for Receptor 5, utilising these shorter assessment periods, when the local ambient noise level is relatively low in the absence of any passing vehicles, as opposed to relying on the predicted value from the historical noise model. This was deemed to be a more prudent and robust approach to derive a noise reduction at this monitoring location.
- 12.39 Subsequently, the May 2020 submission package has included a PDA Technical Note dated 26 February 2021, which confirms that a further review of the audio recordings has been undertaken to establish periods where no clearly audible local vehicles were present, but the WRC was still driving around the track. The note confirms that, as a full lap is approximately 85-seconds, the review has looked at periods when there is a minimum of 85-seconds where there were no audible local vehicles. From this exercise, the technical note derives a reduction figure for the LAeq for receptor 5 of 30dB.
- 12.40 This further assessment has subsequently been considered by the Council's Environmental Health Officer and appointed acoustic engineer. Both confirm that the revised noise reduction figure of 30dB for R5 to have been robustly demonstrated. As this is the 'worst case' or lowest reduction figure demonstrated for the LAeq for the eight representative receptors, this is the reduction figure submitted for approval in the amended documents received in May 2021. Based on the advice, Officer's consider that this reduction figure of 30dB to be applied to the LAeq 1hour and 5mins, can be recommended for approval.

Compliance methodology for application of the reduction figures

- 12.41 On the basis that the Council's Environmental Health Officer and advising acoustic engineer are now satisfied with the assessment undertaken of the noise data obtained from the physical testing and the resulting reduction figures identified above, it is necessary to ensure that the submission clearly sets out which of the reduction figures identified will be used in the monitoring system once the track is operational and how they will be applied. This clarity is

necessary because the submission has presented reduction figures for all eight representative receptors, for the LAeq and the LAFmax and it needs to be understood which ones will be applied and how, in order to ensure that the monitoring system serves its purpose in ensuring that community noise levels are not breached by track activity. As explained above, when operational, the method by which compliance with the community levels will be checked, is by deducting the approved reduction figures from the trackside readings and comparing that to the approved community levels within the Noise Management Plan Issue No. 3b.

- 12.42 Included within the May 2021 submission is the document, 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021. This document contains Table 1, which shows the derived reduction figures at each of the eight representative receptor locations measured within the community (Table 1 updates original Table 16 from the PDA document 'Derivation of Noise Reduction Levels for compliance with the Noise Management Plan' September 2020). There is only proposed to be a single trackside monitor and, as approved within the Noise Management Plan Issue No. 3b, the LAeq Community Levels are the same for all noise sensitive receptors.
- 12.43 This document therefore confirms that, in order to determine that the LAeq community noise levels have not been breached, it will be the 'worst case' or lowest reduction figure from all eight results that will be applied to the trackside monitoring results. For the LAeq, the worst case reduction figure is 30dB. Section 4 of the document, specifies that it is this worst case or lowest noise reduction figure that will be deducted from the trackside LAeq readings, to establish compliance or breach with the approved Noise Management Plan Issue No. 3b and the categories/days of use therein.
- 12.44 For the LAFmax, again there will be a single trackside monitor, but there are two differing Community Levels providing limits. These two limits are defined by a yellow zone and blue zone within the approved Noise Management Plan Issue No. 3b. The blue zone has a limit of 73dB for the LAFmax and the yellow zone has a limit of 76dB. Of the 8 representative receptors, representative receptors 1 to 4 and 7 fall within the 73dB limit (blue zone). The 'worst case' or lowest reduction figure from these five representative receptors is 39dB at R2. Receptors 5, 6 and 8 fall within the 76dB limit (yellow zone). The 'worst case' or lowest reduction figure from these three receptors is 36dB at R5. Section 4 of the document, specifies that it is these two worst case or lowest noise reduction figures that will be deducted from the trackside LAFmax measurements, to establish compliance or breach with the approved Community Levels of the Noise Management Plan Issue No. 3b.
- 12.45 The most robust noise reduction figures submitted for approval for operational use are therefore:

LAeq: 30dB

LAFmax 76dB limit: 36dB

LAFmax 73dB limit: 39dB

12.46 From the response from the Council's EHO, the following points are noted in relation to the submitted document, 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits':

- a) In order to assess the noise generated by the vehicles as they are driving on the test track a sound level meter will be permanently located adjacent to the track in accordance with drawing no: 881010/1193.
- b) Noise levels will be monitored every second continuously 24 hours a day irrespective of whether the track is in use by a noise monitor positioned at TC.
- c) The track side monitor continuously measures the LAFmax and the LAeq noise indices every second, from which the LAeq 5-min and LAeq 1 -hour values are derived.
- d) The 'worst case' ANR's would be defined as the lowest ANR values. Subtracting this from the trackside monitor would result in the highest level calculated within the community. Therefore using the lowest ANR's will provide an effective control at all locations, as the resultant community noise level at the other locations would be at a lower level.
- e) The trackside monitoring software will automatically apply the 'worst case' ANR values to the measured LAFmax, rolling LAeq 5-min and rolling LAeq 1-hour at all times when the track is in use. Therefore the track controller will be able to monitor the compliance with the community noise limits in real time.
- f) The real time monitoring system will display the output of these calculations and compare it with the community levels to determine whether the community levels are being complied with at all times when the track is operating.
- g) I am satisfied with this compliance methodology as amended above.

12.47 As section 4 of the document 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021' has been submitted for approval and this document clearly sets out that it is these worst case or lowest reduction figures of 30db (LAeq) and (36/39dB) that will be used within the monitoring system for the test track and how they will be applied, Officers consider that this compliance methodology and the noise reduction figures therein are acceptable, and recommend its approval.

Validity of Modelling within the Environmental Statement and ability to comply with the approved Community Levels once operational.

12.48 Submitted with the application is PDA report, 'Acoustic Appraisal of Noise Emissions for compliance with the requirements of Condition 6', which provides advice on whether the physical testing undertaken at the site demonstrates that the approved Community Noise Levels specified in Noise Management Plan (NMP) 3b can be complied with. The submitted PDA report concludes that the physical testing has confirmed that the test track can be operated in compliance with the approved Community Levels and accordingly, the requirements of

condition 6 are fulfilled - furthermore, the physical testing has validated the original assessment of impact, demonstrating a no more than negligible or minor impact on the community arising from the operation of the test track.

- 12.49 The content of this report is noted. The 'Community Levels' allowable from the test track have already been set through the approval of Noise Management Plan 3b in 2016 and this current application does not seek to amend or alter those previously approved 'Community Levels'. Going forward, operational use of the track must comply with these approved levels.

Implications of weather conditions on noise monitoring

- 12.50 On the basis that the monitoring of noise operationally will be undertaken at trackside, with a reduction figure applied to determine the noise level received in the community, it has been important to consider any influence of differing weather conditions on both measuring equipment and noise propagation. It is necessary to consider such influences in the context of the physical testing already undertaken, for determination of the reduction figures, as well as going forward, once the track becomes operational, to ensure that differing weather conditions would not result in breaches, even with the approved reduction figures being applied.

Monitoring equipment

- 12.51 Taking the monitoring equipment first, the submission confirms that the sound level meter will be housed within a weatherproof case, with an integrated pole to mount the microphone. The meter will have power and Ethernet connection. The microphone will have a weather proof windshield.
- 12.52 The submission indicates that at wind speeds of up to 10m/s, the expected noise level measured from the microphone would be 60db(A). The submission indicates that for Category C days, the lowest trackside limit would be 77dB LAeq 1hour, with higher limits for Category B and A. As such, noise levels at trackside would be significantly higher than wind generated noise at a wind speed of 10m/s. Therefore, the applicant's noise consultant concludes that adverse weather would not have an adverse impact on the ability of the trackside monitor to measure noise emissions from the track.
- 12.53 The Council's appointed acoustic consultant has advised that:-
- a) It is understood that the outdoor windshield is effective up to approximately 10 m/s and the expected noise level measured at the microphone for such wind speeds is approximately 60 dBA. The tabulated survey data indicates that the majority of measured sound levels at the track centre monitor are above 70 dB LAeq,1sec (at least 10 dB above the wind generated noise) and therefore it is considered that wind speeds up to 10 m/s will not have a detrimental impact on the ability of the trackside monitor to adequately measure the noise emissions from the track.

- b) The limit or threshold at which the trackside level will be sufficiently above the wind generated noise level is currently unknown, since there is no information on the wind generated noise at the microphone for wind speeds above 10 m/s. However, the trackside monitor will be measuring continuously, including during adverse and extreme weather conditions and, therefore, further detailed information can be obtained in due course regarding the effect of significant wind speeds at the track centre monitor. This information can then be used as part of the annual review for the Noise Management Plan.
- c) It should be noted that it would not be possible to determine the track related sound level at the community receptors during periods of extreme wind speeds, since the wind generated noise or turbulence at the receptor microphone will be excessive and will mask track related noise.

Wind speed and direction

- 12.54 The applicant's original submission has discussed the influence of weather on sound propagation and this is picked up again in the PDA Technical Notes of October 2020 and January 2021. In relation to wind speed for the physical testing, the submission references industry standard noise propagation methodologies, which recommend assessment in light to moderate (<5m/s) downwind conditions. The submission notes that CRTN (Calculation for Road Traffic Noise) assumes noise propagation conditions which are consistent with "*moderately adverse wind velocities and directions*" i.e. when the wind is blowing from the source to the receiver, though CRTN does not define the specific wind speed. The submission states that neither CRTN, nor any other relevant standard, advises that wind speed above 5m/s would result in increased noise propagation.
- 12.55 The standard ISO 9613 – 2 "*Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*" states that it predicts downwind noise propagation with the wind blowing from source to receiver. In addition it describes the wind speed conditions for assessment as between approximately 1 m/s and 5m/s. The standard advises that the prediction methods result in sound pressure levels at the receiver for meteorological conditions which are favourable for propagation from source to receiver. As such, the applicant's consultant confirms that the physical testing has been carried out in wind speeds which represent the 'worst case' meteorological conditions in accordance with all relevant standards including ISO 9613 and CRTN.
- 12.56 There has been further dialogue between the applicant's acoustic engineer and the Council's EHO and the Council's appointed acoustic engineer relating to whether any correction is required to noise measurements at trackside, if weather conditions are adverse, such as wind conditions exceeding 5m/s. These discussions have stemmed from reference within the Environmental Statement, November 2014, which states, 'it is acknowledged that during varying wind conditions a +/- 7dB correction could occur'.

12.57 The PDA Technical Note dated October 2020 responds that the source of the variation of +/- 7dB has not been detailed within the Environmental Statement and does not appear to relate to any specific guidance that PDA are aware of, therefore, no justification for this potential variation has been presented. This technical note goes on to state that,

- a) Results of the assessment have demonstrated that at locations that were downwind from the track during the survey undertaken in July 2020, were in close agreement with the predicted noise levels.
- b) The assessment has therefore validated the predicted levels presented within the Environmental Statement.
- c) The relevant guidance states that when wind directions are blowing from source to receiver, this is the worst case meteorological conditions. Therefore the physical testing has been undertaken within wind conditions that represent the worst case meteorological conditions, and further the noise model presented within the Environmental Statement has been validated under these worst case conditions. We would therefore confirm that no further correction would be necessary.

12.58 The Council's appointed acoustic engineer has raised no concerns with the wind speed conditions within which the physical testing was undertaken. He notes the following:

- a) The survey notes (from the physical testing in July) indicate that the wind speeds ranged between approximately 2.2 m/s to 4.2 m/s (8 km/hr to 15 km/hr) at the start of the test run. It is considered good practice to measure sound levels when the wind speeds are below 5 m/s, since such conditions are conducive in obtaining accurate measurements of the noise source in question.
- b) Furthermore, prediction methodologies such as those within ISO 9613-2:1996 are based on downwind conditions (with wind blowing from source to receiver) with wind speeds between approximately 1 m/s and 5 m/s.

12.59 In relation to the consideration of higher wind speeds and whether these can further influence sound propagation, the Council's appointed acoustic engineer has stated that:-

- a) To my knowledge, there are no guidance documents or British Standards that specifically support conducting sound level measurements above 5 m/s (only to exercise caution if such measurements are necessary) and there is no documented evidence to suggest that an increase in sound propagation will occur when wind speeds are above 5 m/s for a moving vehicle.
- b) It is worth noting that during the afternoon period immediately prior to the Fiesta WRC operating on the test track (circa 12:50 hours), the wind speed was noted at 8 km/hr (circa 2.2 m/s). Later in the day (circa 13:39 hours) the wind speed increased to 15 km/hr (4.2 m/s) prior to the Fiesta

WRC starting the 2nd set of circuit laps. The tabulated survey data indicates that there is a negligible difference in the resulting sound level for both wind speeds. For example, at receptor 4 the consecutive 5-minute sound level was approximately 55 dB LAeq,5min for the time period 12:50:30 to 13:00:30 for a wind speed of circa 2.2 m/s. At the same receptor, the resulting sound level was approximately 54 to 56 dB LAeq,5min for the period 13:39:00 to 13:49:00 for a wind speed of circa 4.2 m/s. The difference in sound level is therefore approximately 1 dB which is negligible. This slight difference could also be due to a slight change in driver behaviour, as opposed to the increase in wind speed.

12.60 In terms of wind direction, the Council's appointed acoustic consultant states that the wind direction on the day of testing was predominantly from a south westerly direction. The prevalent wind direction in the UK is considered to be south westerly and therefore the wind direction during the testing is representative of the 'typical' wind direction conditions for the UK and the local area.

12.61 There has been some dialogue relating to the submission and conclusions relating to wind direction and which of the representative receptors can be considered downwind for a south westerly (when they are not located directly to the north east of the track). The PDA Technical Note of the 19th January references the calculation method described in ISO 1996-2:2017, which indicates that receptors that are within +/- 85 degrees of the prevalent wind direction would be considered to have conditions that are favourable to noise propagation. Applying this method, the submission confirms that,

- a) Both R3 and R6 would be favourable to noise propagation from the track.
- b) R4 and R5 would also be downwind from the track.
- c) With reference to R2, the size of the track is large and therefore there is a large angle of view associated with R2. Within this angle of view part of the track would not be downwind to R2 but the southeast sections of the track would be downwind to R2. Observations of the measurements and the audio recordings highlight that the highest noise levels measured from the track were when the vehicle was in the south eastern part of the track and would therefore be downwind from the track.

12.62 This clarification is noted. The Council's acoustic consultant has advised that:-

- a) For a south westerly wind direction, receptors 1 and 7 would not be downwind from the track. They would be downwind from the track for a north easterly wind direction. A slight increase in noise level could therefore potentially occur at receptors 1 and 7 for a north easterly wind. However, taking into consideration the resulting track sound levels at receptors 1 and 7 which are notably lower than the levels experienced at the worst-case receptors (i.e. receptors 4, 5 and 6), a slight increase in sound level due to a change in wind direction would be negligible in terms of the outcome of the assessment.

- b) Furthermore, as the ANR values should be derived from receptor 5, these ANR's are considerably more onerous than the ANR values derived from receptors 1 and 7, and are more onerous than the ANR values derived from receptors 2, 3, 4 and 6. A slight increase in the noise level at the above receptors due to a change in the wind direction (e.g. north easterly or south easterly wind) is therefore unlikely to change the ANR values used within the software monitoring system, assuming they are taken from receptor 5.

12.63 Subsequent to this dialogue, the Council's appointed acoustic engineer has raised no further concerns relating to wind speed or direction, in terms of how this might have influenced the physical testing and the robustness of the resulting noise reduction figures. Going forward operationally, the May 2021 submission documents confirm that the noise reduction figures from receptor 5 will be used operationally.

Other weather conditions

- 12.64 At the request of the Council, the PDA Technical Note dated October 2020 provides commentary on other weather or seasonal conditions. This note references advice in ISO 9613-2: 1996, which provides further discussion regarding the effects of meteorological conditions on sound propagation. It states that the noise propagation described within the standard (when downwind from the source to the receiver) result in noise levels at the receiver for meteorological conditions which are favourable to propagation from sound source to receiver. The reference above would therefore support that the noise level propagation, when downwind from a source as observed during the physical testing, would result in the worst case noise level at the receptor. On this basis, the applicant's acoustic engineer concludes that no other meteorological or seasonal conditions would influence the outcome of the assessment.
- 12.65 The Council's appointed acoustic engineer has advised that precipitation has little effect on sound propagation and there are no guidance documents or British Standards that recommend conducting noise measurements during periods of precipitation. Furthermore, during periods of precipitation, the track will increasingly dampen and therefore it is anticipated that the driving speed around the circuit will decrease, which in turn will slightly reduce the track related sound level (i.e. compared to the measured levels in July 2020). It is therefore considered that the test track can operate regardless of precipitation levels. Similarly, the Council's appointed acoustic engineer has advised that, should the intervening ground between the track and the community receptor be wet or frozen, such as during the winter months, it is anticipated that such conditions will not result in an increase in the track related noise level.
- 12.66 Taking all of these weather related matters into account, the Council's Environmental Health Officer has concluded:-

'In view of all the advice and statements and the prevailing weather conditions that were recorded on the survey sheets during the July 2020 testing, I am satisfied that the physical testing has been carried out in a

robust manner, in favourable meteorological conditions for noise propagation and in accordance with all relevant UK standards.

I conclude based on the evidence above it will not be necessary to restrict activities on track in certain weather conditions or adjust the proposed ANR's. When the track is operational it will continuously monitor the weather conditions, we can consider this through the review process in compliance with condition 6'.

- 12.67 Based on the submission and the advice received from the Environmental Health Officer and the Council's appointed acoustic engineer, it is considered that the implications of differing weather conditions have been robustly considered and demonstrated as part of the details now submitted for approval. The advice from the Environmental Health Officer is that it will not be necessary to restrict activities on track in certain weather conditions or adjust the approved reduction figures to be applied in the compliance methodology. However, the EHO correctly notes that the Noise Management Plan is subject to a review process as stipulated by condition 6 of the original approval. When the track is operational, weather conditions will be continuously monitored and logged, and so this data will be available for consideration as part of that review process going forward.

Other Issues

- 12.68 A number of representations have been received in response to the consultation, both positive and negative.
- 12.69 As will be seen from Annex 1, a number of the comments received raised numerous and detailed technical points relating to the physical testing and the assessment undertaken by the applicant's acoustic consultant. Whilst these comments have been noted, the advice of the Council's Environmental Health Officer and the Council's appointed acoustic engineer is that the details forming the revised submission of May 2021 are robustly demonstrated and acceptable for approval and it is on the basis of this professional advice that the submitted details are recommended for approval.
- 12.70 A number of representations raise concerns with the location of the eight community receptors used within the physical testing and whether these locations appropriately represent the community and all sensitive receptors therein. Concerns relate to ambient noise levels at the chosen representative receptors and whether these would be higher given their proximity to roads etc. than private gardens, as well as whether the location of the representative receptors would be more shielded from test track noise, by buildings, walls etc. than private gardens lying closer to the test track.
- 12.71 The eight representative receptors within the surroundings of Dovenby Hall have been used throughout the development of this scheme, including for the original application and the accompanying Environmental Statement to establish baseline noise conditions, which have subsequently been used to establish the Community Levels in the approved Noise Management Plan Issue 3b. The eight representative receptors were agreed with the Council's Environmental Health Officer's as representative. All the selected locations are within the public domain

on the basis that public areas would always be accessible for both the applicant and the Council, whereas this could not be guaranteed for private land. It is not considered appropriate to deviate from these agreed receptors at this late stage.

- 12.72 It is acknowledged that some of the representative receptors are influenced by road traffic noise, but parts of the village are influenced by road traffic noise and therefore these receptors are considered to be 'representative' of that part of the environment. The concerns relating to private gardens are noted. The approved Community Levels contained within the Noise Management Plan Issue 3b apply to all noise sensitive receptors, including within private gardens. Condition 6 of the original permission secures a review process for the Noise Management Plan within the first six months and annually thereafter. Should it be evidenced that noise from the track is resulting in breaches of the Community Levels in private gardens, even with the appropriate application of the approved reduction figures, then this will need to be raised with and resolved by the operator.
- 12.73 Other concerns have been raised, including matters such as, the levels of noise to be experienced and the characteristics of this noise and its resulting impacts, whether the sustainability and viability of the scheme needs to be re-visited etc. This application seeks the approval of only those matters set out within the approved Noise Management Plan Issue 3b as requiring the further written approval of the Council. These other matters therefore fall outside of the parameters of the current application.
- 12.74 It has to be remembered that Condition 6 provides a mechanism for review of the noise management plan. Whilst it is considered that the proposed details should avoid unacceptable community noise impacts, if in practice difficulties are encountered there will be the option of addressing these via the review process.

Local Financial Considerations

- 12.75 Having regard to S70 (2) of the Town and Country Planning Act, the financial implications of the proposal have already been considered as part of the original application.

13.0 Conclusions

- 13.1 Details have been submitted to the Council for approval, pursuant to the requirements of the approved Noise Management Plan Version 3b. The Council has therefore considered this application on the basis that the details approved would need to be subsequently complied with at all times when the track is operational, otherwise, this would constitute a failure to comply with the approved Noise Management Plan Version 3b and thus a breach of condition 6 of planning permission 2/2014/0350. Based on the advice of the Council's Environmental Health Officer and the Council's appointed acoustic engineer, the following details, submitted for approval in May 2021, are considered acceptable for approval:

- Drawing 081010-1191 Anemometer and wind vane position

- Drawing 081010-1193 Track Layout - Monitoring Location
- Section 4 of the document 'Application of Noise Reduction Factors to Demonstrate Compliance with Community Noise Limits', PDA, May 2021.

RECOMMENDATION

That the amended details submitted, as set out at section 3.3 and 13.1 above, are approved.

Annex 1

Summary of points made in representations received from the public:

Letters of Support:

The letters of support received to date primarily refer to the economic benefits arising from the proposal, including local investment and job creation. Some representations do relate to the detailed technical matters arising from the current application and these comments are summarised as follows:

- A. Having listened to audio, the test cars are less intrusive than lawn mowers, bin lorries and general highway traffic, farm equipment.
- B. Working on the site when testing was being carried out, noise from the track wasn't really noticeable from inside the building.

Points raised in letters of objection:

1. Using an average figure deliberately hides the range of noise values particularly at elevated levels.
2. One objector presents the data as a time series plot (which includes both active and non-active noise levels) for the results recorded at receptor 2, and concludes that this clearly shows how frequently the Cat A, B and C noise limits are breached. With these breaches occurring during test conditions and under scrutiny it does not give confidence that during routine operations that the noise levels can be controlled.
3. The noise reduction factor calculated clearly does not adequately mitigate the potential for breaches of the noise limits to occur.
4. Would have expected that consideration as to the statistical robustness of the noise reduction factor would consider the statistical confidence level that the noise reduction factor would not breach the community noise levels, but this has not been covered.
5. Reference is made to the 2019 test data and the number of breaches of the 60dB limit. Concern that both data sets have not been combined to build a bigger sample size to show the effect of track noise versus receptor readings.
6. Failure to correlate the closest track monitor with the closest receptor adds further ambiguity to the data presented.
7. If the data demonstrates that noise limits will be breached during a test period then the data demonstrates that they are going to be breached during operations.
8. Suggest another series of tests; one to test the noise reduction factor hypothesis with exhausts on and off. Also, for the data to be fully statistically analysed and presented in a way that makes a reasoned and transparent argument. Statistical confidence intervals are an easy analysis with this type of data set.
9. ABC should contract an independent statistician to peer review the data and analysis and to present the confidence and probability %'s of breaches in noise limits occurring.

10. This is flawed testing regime which has not provided adequate, accurate data to demonstrate that noise levels will not be breached going forward. Further testing is required to prove and improve the noise reduction factors that have been put in place. Testing needs to compare vehicles with and without exhausts as this may alter the levels and quality of noise heard.
11. The document "Acoustic Appraisal of noise emissions for compliance with condition 6" states that background noise removal shows that the various limits are met, however the noise nuisance experienced by a neighbour to the track is the total noise experienced by the neighbour. If the addition of track noise to the background leads to limits being exceeded, then logically the track noise must be reduced in order that the perceived noise is at or below the limit set at Judicial Review.
12. The 2019 data shows that set limits will not always be met. It is unacceptable to discard a set of data simply because it does not support the applicant's case.
13. There is considerable use of averaging in the data and it is not clear that the averages have been calculated appropriately for logarithmic values (Decibels) rather than arithmetic values. There is ambiguity around the use of mean, mode and median values.
14. Data has been "cherry picked" to suit the objectives of M Sport, with inconvenient noise data being disregarded.
15. When M Sport operated the track without planning permission in September 2019 the noise was deafening due to the constant noise of vehicles going round the track accelerating and braking, far in excess of any background noise in this area. The problem was not only the level of noise but the fact that the high pitched noise of constant acceleration and braking is far more intrusive than the background level of noise from the A594.
16. Don't understand why the noise levels recorded at R3 was so low and wonder if the receptor might have been in a location where the noise levels from the track were muted for example by the wall around Dovenby Hall. The noise experienced in September 2019 was deafening, very similar to the noise recorded close to the track during these tests.
17. Not confident in the tests undertaken in July 2020, underestimate the level of noise which will actually be generated.
18. The locations of the 'receptors' (particularly No.2) are sited where there are buildings to block the transmission of sound from the test track.
19. If a receptor was located in rear gardens, it would record a higher noise level as it would be approx. 100metres closer to the track based on the location of receptor 2 so there would be higher peak values.
20. On the day of testing, it was glass/cans Recycling collection day, the noise from which would distort any noise recordings that were taken adjacent to the road, rather than in the quieter location of private gardens. Appreciate an allowance has been made for this (and the farm traffic) but these sounds are either a once a week occurrence or are short lived rather than ongoing 'squeal' of tyres and engine noise during the planned testing.
21. Private gardens have been offered as a testing point for a temporary receptor, but so far this seems to have been ignored by Allerdale BC.

22. From statistics in the Noise Management Plan, a level of 112dB LAFmax is stated, this level was breached by the Fiesta WRC at a recorded level of 112.9dB LAFmax at the trackside.
23. From the Zone map in the Noise Management Plan, it states that 73dB LAFmax is the agreed limit, however it would appear this has been breached as part of the testing. How can further breaches during normal operation if approved, be prevented or enforced by Allerdale BC?
24. The noise data presented in All Measurement positions - 16 July 2020 Witness test Data.xlsx does not support the conclusions in PDA's report Derivation of Noise Reduction Levels for Compliance with the Noise Management Plan. The data confirms the result expected from theory, i.e. that no single, fixed noise reduction factor can exist between Track Centre and any of the Community Receptors, for LAm_{ax}, LAeq(5min) or LAeq(1hr).
25. The data shows that LAm_{ax} and LAeq(5min) at Track Centre are controlled by the very high sound levels for no more than 5 seconds when the car is near Track Centre. That means the monitoring system could be made to generate false, low readings of both LAm_{ax} and LAeq(5min) at all the Community Receptors by closing the car's throttle for a few seconds as it passes Track Centre.
26. Neither the current report nor the Environmental Statement attempts to calculate community noise levels with sufficient accuracy.
27. Using dB, the significance of smaller differences can be lost. That point is important in the calculation and use of LAeq(5min). An under-estimate of only 1dB in a calculated noise level at a Community Receptor would lead to track use that should have been stopped after about 4 minutes being allowed to continue indefinitely.
28. The report's conclusions are based on single, selected values from 2 sets of 20 results, ignoring all the others, with no assessment of their repeatability or accuracy, no statistical analysis to show the range of results that might be expected during track operation and no assessment of the reliability required of the results to justify their use.
29. PDA accepted the poor location of community receptors which makes it impossible to measure track generated noise accurately. They should have identified the error and required the receptors to be moved.
30. PDA failed to critically review the data and explain at least two significant anomalies to confirm it was reliable before using it.
31. PDA's report recognises the difference between LAm_{ax} and LAeq(5min), and accordingly presents two noise reduction factors for each Community Receptor, but wrongly states that LAeq(5min) and LAeq(1hr) are identical in this case. That would only be true after the track had been in continuous use for more than an hour, making the same noise level throughout, which is not true for the 16 July tests and not credible for any worthwhile use of the track for vehicle development.
32. To be accurate, noise reduction factors would have to be valid for every possible future use of the track. That must include all possible track configurations, all possible vehicles, and all possible tests M Sport may carry out. It cannot reasonably be assumed that every use of the track will require the car to be driven past the Track Centre monitor at full throttle making maximum possible noise, or that the noise made at every other

part of the track will always be less than that at Track Centre in the same ratio as in the 16 July tests.

33. Closing the throttle for a few seconds while passing Track Centre would be unlikely to adversely affect a vehicle development test, but would dramatically reduce L_{Amax} and L_{Aeq}(5min) at Track Centre and so, according to the monitoring system, but not in fact, at all Community Receptors.
34. It cannot be assumed that none of the vehicles used will emit different sound intensities in different directions, or that the difference in noise intensity between low and full power will be the same for silenced vehicles as for the open race exhausts used on 16 July.
35. The 16 July tests only set out to establish noise reduction factors for one particular use (i.e. circuits at or near maximum speed) of one of 18 track configurations, using two very similar noise sources with open race exhausts. They could never be valid for the full range of uses of the track. As the report shows (Appendix C), track configuration 18 does not take the car near Track Centre and 9 configurations do not pass Telemetry Point 8, from where the cars made significant noise recorded on the Track Centre monitor.
36. PDA has commented on unexpected variations in relative noise levels from the two cars, but not explained them.
37. The 16 July tests failed to establish valid, constant noise reduction factors even for the single case of the Bentley GT3 completing its first 10 laps.
38. It would be wrong to assume the maximum noise at each Community Receptor was caused by the car at Track Centre.
39. PDA presents a single value for L_{Aeq}(5min) at track Centre for each car, for the duration of testing. That is wrong. L_{Aeq}(5min) should be calculated for every 5 minute period on a rolling basis, updated every second when a new data point is added.
40. L_{Aeq}(5min) at Track Centre was not consistent throughout the test, showing that there cannot be a constant reduction factor from Track Centre to any of the Community Receptors. Additionally, the values at Community receptors will vary according to noise made elsewhere on the track. That varies independently of the Track Centre value, for the reason given above for L_{Amax}, causing more variation in the noise reduction factor.
41. For Community Receptors R5 and R8, the report proposes using theoretical results from the Environmental Statement in place of measurements. That is not acceptable because the theoretical results did not attempt to achieve the required accuracy.
42. The applicant will need to include an allowance for errors in the community noise levels provided by a new, credible monitoring system, on a proper, statistical reliability basis allowing for the very limited number of tests.
43. Reliable data cannot be obtained from the roadside verge locations chosen. At two public meetings residents have asked to have the monitors on their property. The Council's refusal to move the receptors to appropriate locations is perverse.
44. Incorrect noise levels may have been taken into account as exhibited by extraneous noise present on recordings.

45. Decibel readings may have been raised by the conversations of the operators / witnesses and notification sounds from mobile devices heard throughout the recording, raising the actual community level along with the aforementioned road noise.
46. To say that noise in the village is often louder without the site active is extremely misleading and incorrect. I would wholeheartedly say that noise in the village is never louder than the noise we experienced during any of the tests conducted so far.
47. Engine noise from the track is much more disruptive than the odd passing car, especially if you once again consider the aforementioned preferential position of the receptors. There is a huge difference in the perception of noise when comparing unpredictable short-term events to listening to the irritating noise of a car going round a track and knowing it will be present for hours at a time for the next ten years.
48. Businesses on Dovenby Hall Estate not consulted. This seems an odd omission. Health and Safety at Work Act 2005 –contravened by track noise affecting adjacent Dovenby offices and at Dovenby School workplaces. Will the operator of the hotel on the grounds be satisfied they are offering a relaxing place to stay when guests are awake at 08:30?
49. In researching other tracks, very few have residential properties in as close proximity than M-Sports evaluation track (with the exception of new development added after tracks have been in use). All evidence I have seen in their Noise Management Plans points to greater measures being taken such as Static Noise Tests being conducted (in addition to a Drive-By Noise monitoring on straights and locations nearest neighbouring residents). Brands Hatch for example, operates a 92dB(A) limit for drive-by whereas the Dovenby limit is 112dB(A), more than twice as loud! The highest drive by limit found is 105dB(A) at Anglesey where the track is further from the nearest residence than at Dovenby, other tracks have as low a limit as 85dB(A). Why is it the case that we are subjected to higher limits?
50. Other engine manufacturers / tuners such as Swindon Powertrain, test their 400bhp engines in a lab.
51. The noise experienced during the tests created an environment that you would not want to be sat outside in, taking all possible enjoyment from people's garden during all daylight hours. Dog was visibly shaken and was growling indoors whilst the tests took place. The tests may say that there is only a small difference between the noise heard at R2 conveniently located directly on the road but there is a marked difference if the measurements were taken in gardens.
52. Some noise levels experienced during the testing were unacceptable under any circumstances. Character of noise very different for the two test vehicles, GT3 is like a low rumble, WRC is high pitched with squeals and backfires. Shows difficulty in predicting receptor experience.
53. Surely it cannot be impossible to reduce the road noise at R5, for the period of a test, which is preventing the applicant getting good data for this receptor location. The first suggestion to come to my mind would be simply to close the road for the short duration of testing.
54. The best time to run these tests would be at night when most 3rd party external influences would be at the minimum, and we would get a true [as

possible] indication of how noise from the track would manifest itself at the receptor thus giving the most accurate noise reduction. This is of course impractical, but I hope you see my point. It is far more important to get this right than to fudge it through.

55. Is Allerdale Borough Council going to ignore the noise made from racing cars because children are happily and exuberantly making their natural noise in the playground?
56. Surely professional officers and Councillors will understand that infant and junior children will have their schooling detrimentally affected.
57. Dovenby village infant and primary school should have a carefully assessed level of noise, measured not only in decibels but in the noise characteristics of bang of backfire and scream of brakes that are likely to cause fear and anxiety in vulnerable small children.
58. The village school is to suffer 76dB, 3dB twice as loud as the village, and is the instantaneous (125ms) noise as many times as can be fitted in to 5 minutes or 1 hour averages. Councillors, governors and parents should be aware of what this means to the infants and children aged 4 to 11 years old. The average normal rural village noise is 43dB and Health and Safety Executive state every 3 dB doubles the noise. Noise is to be allowed that can suddenly go from rural 43dB to instantaneous bang of 76dB, a sudden explosive (125ms) 33dB increase, over a hundred times louder than the quiet classroom or happy playground noise.
59. For one hour the noise can be between 55dB and 76dB with some silence, as long as the average is 60dB for 60 minutes. This is one hour of increased noise from 43dB to 60dB, a 17dB increase, approximately a hundred 100 times louder than rural noise for one hour of learning time for the infant and junior children.
60. For five minutes the noise can be between 60dB and 76dB with some silence, as long as the average is 55dB for a five minute period. This is five minutes of increase from 43dB to 55dB, a 12dB increase, is approximately four lots of those 3dB noise increases that the Health and Safety Executive explain will increase the noise by eight times louder than their rural noise for five minutes.
61. No wonder that the applicant wants to reject the noise levels at R5 by the school or the applicant would show that the noise levels would likely cause damage to infant and junior children aged 4 – 11 who are trying to be educated in a rural primary school and whose hearing would likely be damaged by the approved levels of noise.
62. The test must show what noise levels on the track reach the maximum allowed at the school.
63. Part of the track is circular and designed to test adhesion of tyres. This will dominate the noise characteristics of screech and squeal that are not defined, or measured in the application.
64. The normal weighting of a noise measuring device will not take the high pitched scream screech and squeal into the same account as the human ear and this will lead to multiple noise nuisance complaints.
65. Before considering decibel levels we need to consider a range of non-acoustic factors including the message a sound imparts. The High Court has confirmed noise can be a nuisance even when not measurable as a decibel value, where it is incongruous and out of character in the area

where it occurs. *Godfrey v Conwy CBC* 2001. This places the limited value of the decibel into context. The World Health Organisation [WHO] in their advice to local authorities 2000 make the point "the decibel level accounts for only one third of noise annoyance". Two thirds relate to non-acoustic factors including the character of the noise.

66. The test must show what noise levels on the track reach the maximum allowed at the school and all other receptors.
67. The noise levels and duration of noise would be granted to the title holder of Dovenby Hall Estate, and a future, or the existing, title holder could decide to operate at the extreme limits of the noise levels and durations.
68. Reliance on a formula is not appropriate due to a number of reasons – including, not appropriate for a moving source, noise doesn't radiate evenly, doesn't account for directionality of the vehicle/exhaust, or meteorological conditions.
69. Applicant's definition of LAMax is fundamentally wrong.
70. Noise sensitive locations are within or immediately beside the outer limit of 76dB; Linefoot Farm, Tollbar Cottage, the road haulage site by Tollbar Cottage, Woodside Farm, Fieldside Farm, Dovenby Saw Mill which has a bungalow and terraced houses, Mill Bridge, the Bungalow by the crossroads at the school. These dwellings are ignored and could suffer twice as much noise as the areas in blue for some irrational reason.
71. Object that the variability of wind and weather conditions are not included in this application, only one wind direction was recorded in their application data.
72. Because the wind was not blowing towards receptor R2 - by houses in the village, nor any location that is not directly downwind of the SW wind during this test, then the noise level measured would be 7dB higher at our house and all other noise sensitive locations when the wind was blowing towards all other noise sensitive locations that are not downwind of the SW wind during the test.
73. Questions are raised relating to the clarity of the data sourcing used in the determination of the ANR, and inconsistencies in the documents presented. Lack of clarity relating to the extrapolation of 1 hour average from limited data, misleading and not robust.
74. This planning application needs to maintain the noise pressure with its typical noise characteristics for the required rolling time periods spread over a full day or the data is not representative of the planned use of the track.
75. Acoustic Compliance 16th Sept para 1.13 states "levels at R3 and R6 which are downwind from the track are in close agreement with the predicted levels" This is a clear false statement because R3 is in the village to the north, R6 is a kilometre away at the crossroads south east of the village, the wind was blowing from the south west so what are they talking about?
76. We need to know what noise pressure (and noise characteristics) will be made at the track that will result in 76dB received at the school. Then we know that that noise pressure at the track is the maximum that must be allowed. If you do not test for the maximum allowed then you cannot know what can be exceeded.

77. Why are they not including noise measurement data that includes “the testing (racing) of vehicles on the test track may include rapid acceleration and deceleration, tyre squeal/skid and revving of engines with bursts of noise and possibly backfire.” So the noise characteristics are known? Without this information, the application should not be approved.
78. Pegasus state that measurement folders contain raw noise data from monitors that require a particular software to use which the Councils EHO has. Public scrutiny of the application requires the same data to be made available to the public, which has not been done. If the application is not withdrawn then the same data that the Council will use should be examined by the public and our professional noise consultant.
79. The greatest noise is measured in decibels and in time durations of instant noise and average noise measured over 5 minutes and 1 hour with a rolling period continually measuring that any 5 minute or 1 hour period does not exceed maximum permitted levels. However the application document “Track Movements” does not show that testing was done even for one hour, and the “rolling periods” in their application are not evidenced.
80. The remedy that Allerdale BC and M-Sport agreed in The High Court traps both parties into noise conditions that can never be tested because sound decreases from its source but the zone map requires testing to show that sound increases from its source.
81. The attempt to restrict the application to the determination of Agreed Noise Reductions (ANRs) is obviously futile. The only way ANRs can be separated from other issues such as the difficulty of obtaining accurate noise data from the wrongly located Community Receptors is to accept the theoretical argument that fixed ANRs cannot exist.
82. The Council had a clear duty, before CON6/2014/0350 was withdrawn, to exercise its right under Condition 6 to review the Noise Management Plan immediately and require it to be completely re-written, using precise, unambiguous wording and properly addressing every word of Condition 6.
83. When sensible receptor locations have been established, the lower background noise at them will have to be used to revise the noise limits.
84. Northern Development’s claim that the grant of planning permission cannot be changed is clearly wrong, as shown by the earlier Judicial Review. Once the Council has admitted to its mistake in agreeing the current positions, they can be changed in the same way as short-term noise limits were introduced.
85. The claim by Northern Development’s that the Noise Management Plan para 2.6 limits the scope of reviews is wrong. The wording of para 2.6 quotes two possible reasons for review, it does not preclude review or amendment of the NMP for any other reason. Nor could it legitimately do so since the requirement for review, with no limit to its scope, is in Condition 6 and cannot be constrained by the NMP wording.
86. Condition 6 requires M-Sport to describe in full detail in the NMP, then set up and use, a control system that regulates track activity based on monitoring data, so noise limits are never exceeded. The current proposal to simply exceed limits and record the fact is unacceptable.

87. It will become apparent that the differences between the Category 2 and 3 LAeq(5min) limits and the current LAmax limit are impractically large and LAmax will have to be reduced.
88. The use of the track side monitor as the source to apply the noise reduction factor is flawed. The noise reduction factor should be applied to the source i.e. the car, not track side monitor.
89. Use of roadside Community Receptor locations is not consistent with the Development Panel's requirement, reflected in an amendment to the Noise Management Plan, to use worst-case locations. A number of gardens back onto the site, more realistic locations for receptors would be within the Dovenby Estate, adjacent to the boundaries with these private gardens. On the day of testing, recordings of 87dB were taken in gardens neighbouring M Sport.
90. The Council has failed to provide relevant information for scrutiny by the closing date for comments. Following request, the Council has not provided the Council's brief to its noise consultant and the consultant's response to application CON6/2014/0350 and testing carried out on 19 September 2019.
91. The method used by PDA to deduct background noise at community receptors is mathematically wrong. Table 12 of Derivation of Noise Reduction Levels for Compliance with the Noise Management Plan presents results obtained by subtracting a single noise intensity representing background noise from one representing total noise over a period of time. Each figure describes a complex wave-form as sound intensity varies over time. The two wave-forms vary independently (one including track noise, one excluding it) so the simple subtraction used is wrong, and gives too low a value for calculated track noise. PDA's calculation would only be correct for two wave-forms of identical shape throughout the time period but different amplitudes.
92. Detriment to shift workers, inability to rest.
93. The statement that the track can operate in all meteorological conditions is unfounded and irrational. For meteorological conditions, PDA has presented no data.
94. The Council has failed to publish records of noise in the back gardens of The Cottages (or on adjoining land belonging to M-Sport) during the tests on 16 July 2020. Noise in the back gardens is an important issue, and access would be permitted (explained at public meeting). It doesn't need specialist knowledge of acoustics to know that track noise levels in these back gardens will be significantly higher than at Community Receptor R3 in the road in front of the building, while background noise levels will be lower. The Council should have visited the gardens and recorded noise levels for comparison with those from R3, and made the results available to the public.
95. Do Allerdale BC recognise "the community" as any and every part of the community whose amenity might be affected by noise from the track both within and beyond the boundary of the noise zone map?
96. Is it fair and rational or discriminatory and irrational to enforce by planning permission that some noise sensitive receptors within the noise zone map must receive 73db maximum when other noise sensitive receptors will receive 76dB, twice as much noise?

97. Can the noise zone map be altered?
98. Do all receptor positions comply with the requirement of approved NMP3b section Categories of Use/Operation Controls 6.1 which states:
“...controlled noise levels, measurements will be undertaken in the worst-case position, whether that is free field or façade.”?
99. Does Allerdale planning authority consider that it is physically possible to ever gather evidence that satisfies the requirement in the approved NMP3b Noise Zone Map?
100. Does Allerdale consider that Condition 6 Noise of the planning permission is unachievable and thus this planning requirement is irrational in law?
101. Does “Northern Developments Monitoring System Specification - Cirrus Environmental v1.6 14.09.20 page 4 System Principles” fail to comply with the requirement to provide physical measurement because it defines each noise measurement by calculation?
102. Does evidence from physical measurement require a realistic set of measurements that correspond with dB level, duration of dB, length of day, rolling measurement, façade influence, noise characteristics, wind direction and speed at enough locations that correspond with worst case measurement?
103. PDA does not mention variation of wind speed with height. It offers no justification for mounting the anemometer below the standard height of 10 m and in a sheltered location, or for proceeding with the 16 July tests when wind speed at 10m clearly exceeded 5 m/s. It does not mention that the variation of wind speed with height can cause sound waves to bend downwards, which would increase noise levels at some of the community receptors.
104. PDA does not mention other reasons for limiting wind speed, such as a) Wind turbulence. The effect of turbulence on noise transmission should be discussed.
105. Noise levels at receptors are likely to be increased when air temperature increases with height above ground, e.g. in meteorological conditions promoting fog and frost, usually with low wind speeds (temperature inversions). Thus it is not clear that the track should be allowed to operate in low wind speeds either.
106. The figure of 10 m/s quoted in PDA’s Technical Note dated 23/10/2020 is arbitrary and far below the maximum expected at this site. The real issue is the effects of wind on noise transmission.
107. PDA has offered nothing to support its assertion that “rainfall has little impact on the noise propagation”. The required discussion should include indirect effects of rain, such as air temperature changes and vertical air flow, as well as the direct effect of rain drops in the air on noise transmission.
108. PDA has not offered any comment on the generation of additional tyre noise during rain, though that is known to be a significant problem on some high-speed public roads and depends on the type of road surfacing and its texture.
109. Evidence presented demonstrates considerable nuisance.

110. Council has failed to undertake and publish testing from back gardens in July 2020. Council were aware of concerns between gardens and the identified receptors and should have accessed gardens.
111. Queries evidence relating to public address system.
112. Testing not representative, done with tree cover, when in winter months there is less foliage.
113. Failure to receive consultation letter and ability of website to allow access to the system.
114. Not possible to fix a noise reduction for R5 as noise levels from the track are too variable. Reliant on assumptions. Demonstrates that receptors cannot be a true representation of the properties. Proposed monitoring system is not fit for purpose.
115. Data presented to show that the LAeq5mins at receptors cannot be determined from the Track Centre alone.
116. No evidence presented of two cars using the track and the noise implications.
117. Rights to publicly comment infringed if location of monitoring points not known.
118. No consistent relationship between Track centre and other monitoring points to support use of one monitor. One monitor is irrational for a track of this size. Noise levels will vary over length and depend on direction of car/exhaust.
119. Raises concerns as to the application of the LAmax limits in the noise controls of the Noise Management Plan and how the LAmax inter-relates to other noise controls and how one affects the other.
120. No period of continuous recording at one receptor for 1 hour or one day, nor explanation or evidence of how a rolling figure is measured.
121. Questions whether the physical testing has demonstrated the reduction figures and whether the data has been adjusted to consider wind strength and direction. The results show similar levels at R2 and R5, even though one is much further away than the other.
122. Questions raised relating to the sustainability and viability of the scheme that was relied on in the 2014 decision and whether this needs to be re-considered.
123. PDA's 'Response to Objector Comments' shows many misinterpretations of the comments, and makes many inaccurate and misleading statements. State that members have previously rejected the 8 receptor locations, that it is possible to test all track configurations and repeats that the chosen one is not worst case as the car would not pass TP8, underestimating community noise.
124. References higher levels recorded at TP 8 than Track Centre.
125. NMP proposes no consequences for breaking limits. Track should be taken out of use for a period of review.
126. Monitoring in the community will require ABC equipment and they will not be able to respond quickly enough.
127. PDA tries to dismiss the over-rapid change of recorded sound level at track centre. Any other reflections (or other effects) should have been investigated to confirm they were not interfering with the track centre measurements before proceeding with the test.

128. The meter manufacturer has pointed out, PDA was misusing the meter because the LAF setting used could not properly capture the rapid changes in noise as the car approached. Unless PDA explains and eliminates the rapid changes, that gives another reason why track centre monitoring cannot be used. It relies on accurate measurement of LAFmax at track centre, but that is physically impossible when the level changes too quickly.
129. At the Panel meeting on 16 November 2016 the Panel said the Noise Management Plan should be amended to state "worst case position, whether that is free field or facade" would be used. That was consistent with WHO Guidelines for Community Noise, 1999. While those words were added to Noise Management Plan 3b before it was approved, they have not been acted on. Wrongly positioned kerb-side locations, which are specifically rejected by WHO Guidelines, 2.4.3, are still being used although they are obviously not worst case and could never give the required facade noise levels, 6 dB above nearby free-field values.
130. ABC staff have either ignored or misused all the relevant WHO Guidelines. The only one they have partially adopted is a limit on existing LAeq sound level at residential property. They have ignored the lower limit recommended in 4.3.1 for new developments such as M-Sport's track, and have applied the limit only to noise from the track, while the Guidelines are clear that existing traffic noise is nuisance noise, and limits should apply to combined track and traffic noise.
131. Testing on 16 July 2020 confirmed that noise levels at the 8 Community Receptors cannot be accurately predicted from measurements at track centre and a different monitoring system will be needed.
132. There are commercial premises on the Dovenby Hall Estate (including M-Spot's own) that are much closer to the track than the homes in Dovenby village or the 8 Community Receptors and will inevitably experience noise levels above the limits, so M-Sport cannot comply with the undertaking. The specified limits are not necessarily appropriate as they were chosen to limit residential nuisance, but some limit is obviously required, and should be added to the Plan.
133. The proposed reductions from testing on 16 July 2020 are between track centre and receptor, not source (i.e. the car) and receptor, so they do not comply with the Plan.
134. LAMax must be evidenced and be applied as a noise control in the same way as LAeq 5mins and LAeq 1hour in relation to category of use days.
135. It is not acceptable to rely on an unspecified computer formula. Omission of evidence; the algorithm and formula and method of calculating using "...trackside monitoring software ..." does not allow scrutiny and validation of compliance with the planning condition.
136. One noise level is inaccurate and misleading when dealing with multiple noise levels that differ by exponential quantities.
137. The proposed monitoring system will not be capable of providing LAeq values with the accuracy required to calculate 'time remaining' for track use. Data taken from the track centre monitor as proposed would also result in sudden changes in the 'time remaining' displayed by the computer, presenting the Track Controller with confusing data and giving

no time to react and stop track use. The only way to achieve the required accuracy is to measure the noise directly in the community at the facades of the properties affected by the noise. Any other method will introduce additional, unacceptable errors.

138. PDA's selection of maximum LAFmax sound levels at track centre and Community Receptors, rather than using all results, makes the testing and the proposed noise reductions derived from it invalid. Testing was not representative of real use of the monitoring system. By selecting maximum values from track centre and Community Receptors, PDA has hidden the variations and claims to have found a fixed noise reduction for each Community Receptor. However, for real use of the monitoring system, there would be no selection of data, but the random variations in measurements from lap to lap would remain. Therefore, if the proposed, fixed noise reductions were used, variations of noise measured at track centre would result in errors ranging up to at least 10 dB in predicted noise at each Community Receptor.

139. Suggest a three day testing event to capture the random nature of track use.

