East Side Area, Wellington International Airport Ltd – Notice of Requirement – Response to Request for Further Information, dated 17.7.20

No.	Request for Further Information	Response	
Noise	Noise Management		
1	Please advise the predicted change in Ldn in the period following the opening of the East Side Area. The Council understands (page 6 MDA report) that the change is estimated as 1-2 dB. However, Council would like this to be 'calculated' on a cumulative basis rather than 'estimated', given the closeness of taxiing and the APUs.	Marshall Day Acoustics (MDA) has considered this request and advise that in order to calculate this, it would require modelling another four scenarios and forecasting the year that the East Side Area (ESA) becomes operational. It is however possible to quantify the contribution of taxiing and APU noise in the ESA without undertaking this additional modelling. The level of taxiing and APU noise is proportional to noise from arrivals and departures on the runway (runway noise) because these activities are linked to the number of aircraft movements. Due to the relationship between runway noise and taxiing/use of APUs, it is reasonable to expect the same level of increase regardless of when the ESA becomes operational. Therefore MDA has used the 2050 scenario to quantify the increase in noise due to taxiing and APU's in the ESA but calculating with ESA and without ESA scenarios.	
		MDA has calculated operational noise levels for 2050 with no taxiing in the ESA (i.e. aircraft use gates at locations W, X, Y but not Z as shown on Figure 11 of the MDA Report) and compared this with the 2050 scenario with taxiing and use of APUs in the ESA.	
		The resulting noise levels at 21 Bunker Way under these two scenarios are set out below: Without ESA Operating 2050 arrivals and departures on the runway + taxiing to W, X, Y = 58.4 dB L _{dn}	
		$\frac{\text{With ESA Operating}}{2050 \text{ arrivals and departures on the runway + taxiing to W, X, Y, Z = 59.3 dB L_{dn}}{\text{APU use in in ESA} = 55 dB L_{dn}}$ $\text{Total} = 60.7 dB L_{dn}$	
		Change in Noise = 60.7 – 58.4 = 2.3 dB difference	

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		Therefore as an example, if the ESA is constructed when noise from aircraft operations is $56\ dB\ L_{dn}$ at 21 Bunker Way, MDA predicts that the noise would increase to $58.3\ dB\ L_{dn}$ due to the taxiing and use of APUs when the ESA opens.
2	Please provide the contours used for the single event noise for jet aircraft take-offs (narrow body and wide body) quoted at the bottom of page 24 and top of page 25 of the MDA report.	Attached as Appendix A are four figures showing SEL contours for A320 domestic departures north and south and B772 Trans-Tasman departures north and south. These departures are on the existing runway and represent current (pre-Covid) aircraft movements.
3	The dwellings at 50b and 50c Raukawa Street are not shown on the MDA figures e.g., Figure C6. These two dwelling are likely to be exposed to highest noise levels (along with 21 Bunker Way). Please advise if those dwellings are included in the assessment.	The building containing these dwellings was omitted unintentionally. The contours show the noise level on the site where the building is, and it appears to be the same as 21 Bunker Way. MDA has now added these dwellings into the model and reproduced the figures which are attached as Appendix B . MDA confirms that this omission does not change any of its predictions or conclusions.
4	With regard to APU and taxiing noise from the East Side Area, please clarify the following matters:	
	The estimated duration per day of APU use in the East Side Area.	Over a 15 hour day time period MDA has assumed 364 minutes of APU time. This is 20+10 minutes for each of the 12 flights (24 movements) in the 2050 model. For each flight there would be 20 minutes (arrival) + 10 minutes (departure) allowable APU time which equals 24 minutes per hour over a 15 hour day.
	Why APUs on the eastern stands are assumed by the MDA report to operate for an average of 24 mins in 2050. The Council's noise adviser assumes that it would be (20+10 mins) x 24 flights = 12 hours per 15 hour day i.e. 48 minutes per hour (plus aircraft under tow).	It appears that the Council's noise advisor has mistaken movements for flights. One flight equals two movements. MDA has assumed 24 minutes of APU time because there are 12 flights (i.e. 24 movements). For each flight there would be 20 minutes (arrival) + 10 minutes (departure) allowable APU time which equals 24 minutes per hour over a 15 hour day.

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	 Why Table 4 states 55 dB Ldn for APUs. The Council's noise adviser notes that APUs are predicted to generate 62 dB LAeq. 	Table 4 considers cumulative noise. This can only be done by converting all sources to the same noise metric as explained in the text above Table 4. MDA has used L_{dn} for the cumulative noise assessment. 62 dB L_{Aeq} is the instantaneous sound pressure level (SPL) while two APU's are running simultaneously (refer section 9.4 of report). The SPL with just one APU running at the closest position is 61 dB L_{Aeq} which is the level MDA used to calculate the following noise exposures. When 364 minutes of APU time is averaged over 15 hours this is 57 dB $L_{Aeq(15\ hour)}$. This is equivalent to 55 dB L_{dn} because there are no APU's in the ESA at night. 55 dB L_{dn} represents the night weighted 24 hour exposure to APU noise in Table 4.
	How will APUs be controlled by the land based activity limits when they are at least partially exempt.	If an APU needs to run for longer than the exempt time (20 mins arrival, 10 mins departure), it will need to comply with 55 dB L _{Aeq(15 min)} . This is possible if future APU's are at least 6 dB quieter than MDA's worst case 85 dB at 20m. To run an APU at night, it would need to comply with 45 dB L _{Aeq(15 min)} which means 16 dB quieter than MDA's worst case 85 dB at 20m.
		The proposed control relies upon operators adhering to the time limits by plugging into GPU's and not running APU's at night. The time limits are operationally feasible and align with other motives to reduce APU run-time (e.g. fuel burn). MDA also understands the operating procedures for the ESA gates would include these time limits.
		If APU's are quieter in the future and there is valid need to operate these for longer or at night, then the land based activity rules would provide an appropriate control. The operational procedures would be revised by aircraft type to relax the time constraints while ensuring compliance with the noise limits.
	How will the proposed monitoring differentiate between the (exempt) APU noise and aircraft operational noise.	The monitoring will show a cumulative noise level. As described in section 11.6 of the report the cumulative level is predicted to be $62 dB L_{dn}$ which includes the exempt APU noise. The intention is to monitor and ensure the cumulative level does not exceed $62 dB L_{dn}$ rather than attempt to monitor each noise source individually. Annual noise contours would provide a specific check on aircraft operations noise. The measured cumulative level at the monitor would provide an overall check on the other noise sources. If the

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		results are unusually high or exceed the cumulative level, then further analysis of the measured time traces and recordings can be undertaken to identify the cause. Land based activities and APU noise are not currently monitored. MDA consider that the proposed monitoring would provide an appropriate degree of oversight and available data if investigation is warranted.
	Why the percentage of taxiing movements in Table 7 do not add up to 100%.	For each aircraft type the % adds to 100%.
	The assumed duration of a taxiing event in the East Side Area.	For Code E aircraft a duration of 86 seconds for each taxiing movement inside the ESA has been modelled.
		For Code C aircraft a duration of 99 seconds for each taxiing movement inside the ESA has been modelled.
		This does not include taxiing in the existing Airport Area designation.
5	What will the change in Ldn be in the period following the opening of the ESA? We understand it is estimated to be 1-2 dB (page 6), however, Council would like this to be "calculated" given the closeness of the taxiing and the APUs on a cumulative basis.	See response to Question 1.
6	In 2050, receiving sites will be exposed to noise from an estimated 110 jet aircraft take-offs per day. In addition, there will be 24 taxiing movements in the ESA, with noise from wide body aircraft representing the top 9% of sound exposure levels received at adjoining residential sites. In summary, receiving sites will be exposed to about a quarter more short-duration high energy noise events each day by comparison with the current (pre-Covid) situation. The Council notes that this percentage would be greater if the	The 2050 jet operations will occur within the Airport's existing operating window (6am – 1am).

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110 take-offs occur over a 24 hour period and are not restricted to daytime hours. Please advise whether the 110 estimated jet aircraft take-offs at 2050 are between the hours of 7am and 10pm, or over 24 hours.

Earthworks

- The Council notes the intention to construct a retaining wall, up to 30m high, in the eastern part of the designation. We have already requested that WIAL provide the visual simulations referred to in Appendix F, to help consider visual effects on the environment including those arising from the proposed wall. In addition, and not solely restricted to the effects of the wall, the Council requests:
 - Relevant assessments by a geotechnical professional, including conceptual plans of cut and fill, and recommendations in relation to mitigating adverse outcomes, to help Council judge effects on the environment of proposed earthworks (across all of the designation area); and

A geotechnical investigation has been undertaken by Beca. This is attached as **Appendix C**. As outlined in this memorandum, geotechnical investigations will comprise a key component of the detailed design of any such retaining wall, and at this stage the likely materials that will be encountered in the cut are indicative only. Current concept designs of the proposed Masterplan show the cut being retained behind an approximately 500-metre long and 30-metre-high concrete retaining wall. Beca confirms that this is a feasible engineering solution, but its final design, total quantum of cut and fill requirements and whether there could be other "softer" engineering techniques or alternatives will be highly dependent on the materials exposed in the cut.

It is quite usual for such investigations to be undertaken as part of the detailed design phase of a project and for such detail not to be included as part of the notice of requirement. A designation provides for the long term 'approval' of the work, however because details of the work may not be known at the time of lodging the NOR, section 176A provides for further details or subsequent changes and updates to the work through an outline plan. The outline plan often contains more detailed information that was not

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		available when the notice of requirement was prepared. This is intended to allow some flexibility about the future use of land while the protecting the land for a specific purpose. The conditions proposed (condition 8) also requires the preparation and submission of an Earthworks and Construction Management Plan which will provide greater specification in this regard once the detailed design work has progressed. It is also noted that a fully engineered 500 metre long x 30 metre high provides a worst case scenario in terms of the potential effect of the designation for consideration of the NOR.
		Provision of details of the land contours and the measures to avoid, remedy or mitigate such effects are all necessary aspects of the outline plan process. Such specific detail regarding earthworks and final land contour will be provided at that time. It may also be that this will necessitate additional regional resource consents being required, and again it is quite usual for additional consents to be required closer to construction commencing on an infrastructure project such as this.
	 Information about the consideration given to alternatives, especially in relation to the location and nature of the proposed wall. 	Refer to the above.
Visual		
8	The Council's landscape adviser has requested additional viewpoints for visual simulations. These are:	Frank Boffa has prepared additional visual simulations, and these are attached as Appendix D , along with additional commentary and assessment relating to these perspectives.
	From Strathmore Heights streets e.g., Kekerenga St near No. 24.	
	From the Airport (Rydges) hotel upper floors.	

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	From the remaining golf course.	
	From Stewart Duff Drive (approximately 190m from the Moa Point Road intersection) to demonstrate the visual impact of removing the small hill.	
	Night views to demonstrate effect of lighting	
9	As depicted in the diagrams provided in the visual supplement, the location of the Airport barrier wall appears to have a direct influence on the height and length of cutting into the hillside. Making space for the GSE building also appears to influence the barrier location, and subsequently the hillside cuts. Negative effects of cutting into the hillside are long-term and the Council wishes to understand whether some refinement is possible, to help mitigate those effects. To that end, please provide information related to:	
	Clearance distances required between taxiing paths and the Airport barrier wall.	AirBiz has considered the clearance distances required within the proposed designated area for safe aircraft manoeuvring and operation. This is attached as Appendix E .
	Actual areas / dimensions required for the Ground Service Equipment (GSE) buildings.	As set out above these details will be developed as part of the detailed design phase of the Project. It is also not certain that a GSE building will be required as it may remain "a storage area". This equipment currently sits outside, and WIAL is required to allow space for such equipment within close proximity of the aircraft stands. As noted, this may be better provided for as a building, however this is yet to be determined.

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	The need for GSE buildings to be 15m high, as provided for by the proposed designation conditions.	The conditions enable provision of such a building or storage facility to be established up to 10m in height. If a building is required and established it will be designed so as to house equipment which is necessary to support the operations of aircraft whilst on the ground. The role of this equipment generally involves ground power operations, aircraft mobility, and cargo/passenger loading operations. In order to service aircraft (up to Code E) it would need to be of sufficient size and height to house trucks with aircraft access stairs, catering trucks and de-icing cranes. A height of 10m is necessary for this type of equipment.
	Whether the proposed GSE location within the East Side Area can instead be accommodated within redevelopment of the freight services building to the south, outside the Airport barrier wall.	There is physically not enough room in the proposed freight facility. The multi-user freight facility shown in the 2040 Master Plan will effectively replace the existing end-of-life freight buildings in a similar location, with one that meets the current needs of existing freight tenants. These tenants require this new freight building to have direct airside access, and therefore this is the most appropriate location for them. The size of this building will be constrained by Civil Aviation rules (such as Obstacle Limitation Surface and wing tip clearances). Any additional floor space, which does not require airside access, is likely to be required as aircraft traffic volumes grow, hence being provided for as part of the Miramar South School NoR.
		The GSE needs to be airside and on the eastern side of the airport (where the aircraft are parked).
10	Given that visual effects of the cutting would be significant, please demonstrate that WIAL has considered strategies to minimise both height and length and maximise the degree of "natural" treatment. As examples of possible strategies, has WIAL considered approaches such as:	Refer to the response set out to question 8 above, and Appendix D .
	Raising the level of the perimeter road.	

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	 Dividing up the level change in a series of slopes and terraces. 	
	 Mixing built and natural elements in various types and combinations to achieve the 30m height. 	
	 Realigning the Airport barrier wall to avoid the 'bumps' to the east and south. 	
	 Realigning the terminal extension slightly further west than is currently proposed. 	
11	To mitigate visual effects of the proposed hillside cuts, the NoR proposes the use of panel 'camouflage' similar to that used by the Airport parking building. Please advise the anticipated lifespan for this element and the kind of structure required to support it.	As noted above, detailed design of the final layout of the designated area, the buildings within it is yet to occur. If this material is utilised it will be identified as part of an outline plan requirement, and such detail can be provided at that time. The conditions also provide for the preparation and submission of a Landscape and Visual Amenity Management Plan (condition 3) which will provide further consideration of landscape and visual amenity matters as the detailed design work for the site progresses.
12	Visual simulations showing the remediated outcome of cuts into the hillside need to include further information which help the effects to be better understood. Please overlay additional information on visual simulations including contour lines, property boundaries, and the designation boundary. This request is specific to drawings VS 2-1B and VS 2-1C, but WIAL may decide that the same approach is useful on other drawings.	Refer to the additional material supplied by F Boffa with respect to this question (Appendix D).

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13	An effect of the hardstand extension is the change from grass to hard surface and the subsequent increase in stormwater runoff. In that regard, please respond to the following matters:	
	 Is development in the ESA intended to be stormwater neutral (please quantify in relation to ESA alone and in conjunction with the Main Site NoR area). 	As noted above, such measures will be further developed as part of the detailed design and construction phase of the development. It may be that during construction stormwater is also generated and this may necessitate a regional council consent. In terms of operational stormwater requirements for the site, the most appropriate methods for collection, treatment and disposal will be assessed and developed during the detailed design phase. If a new or separate system is required, additional regional council consents may need to be sought to further address this matter.
	Has WIAL considered using the hardstand as a surface to harvest water for treatment and reuse, in a water management system such as occurred in the Melbourne Airport extension in 2016	WIAL is continuously reviewing its operations to increase sustainability. This may be something that could be considered in the future and as noted could be further evaluated as part of detailed design.
Impac	t of Lighting	
14	We note that the Beca lighting report refers to the standard NZS CP22:1962, which we assume is for consistency with that standard's current inclusion in the district plan. However, that standard is now obsolete and will not be used in the upcoming review of the district plan. Council considers that the impact of the lighting on the surrounding area should therefore be considered against the criteria and limits prescribed in the recently published <i>Control of the obtrusive effects of outdoor lighting AS/NZS 4282:2019</i> .	Laurie Cook (now LDP Ltd) has provided a response to this question and this is attached as Appendix F .

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	Please provide a revised lighting report based on AS/NZS 4282:2019.	
15	Please provide information about the difference in the effects of light sweep arising from aircraft on the ESA apron, as compared to the current circumstances and any alternatives for aircraft parking.	LDP Ltd has provided a response to this question and this is attached as Appendix F .
Traffic		
16	There is a clear expectation from the local community, and from the Council, that there will continue to be public through-access for vehicles and pedestrians between the north and south sides of the Airport. The Council's expectation is that the access is at least as legible and convenient as is currently available. Please advise how the Council and community desire for this level of throughaccess can be preserved as an ongoing and long term outcome.	As explained in the NOR and the Council's first Request for further information, Stewart Duff Drive is an airport road which is privately owned and maintained by WIAL. WIAL currently allows (through no formal or legal obligation) the public to access this as a thoroughfare. As set out in the NOR, WIAL intends to continue to keep this road operational for public use, likely by progressively re-locating the road connection eastward as the Airport and the ESA develops over time. However, as noted above WIAL has no legal obligation to maintain this public access to this road, and to do so would be contrary to the Wellington International Airport Bylaws, clause 7 which states: (2) The company [WIAL] may in relation to an airport road, or part of the road from time to time —
		(a) Open the road or part of it to members of the public generally or a specified class or specified classes or persons;
		(b) Close the road or any part of it;
		(c) Revoke or vary the right of members of the public generally or a specified class or specified classes of persons to use the road or any part of it;
		(d) Declare that the road or any part of it is no longer available for use as an airport road;
		(e) Alter the area, size or location of the road or any part of it;

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		(f) Restrict traffic movement to one direction only;
		(g) Set aside any part of the road for use at all times or during specified times as a loading zone for vehicles loading or unloading passengers or goods or as a place where such vehicles may wait between trips;
		(h) Set aside any part of the road for the parking of motor vehicles subject to any prohibitions, limitations, restrictions as the Company may have from time to time impose
		(3) The Company may, from time to time, impose prohibitions, limitations, and restrictions on the operation, stopping, standing or parking of motor vehicles on any airport road or any part of it.
		WIAL does not currently have any intention to prevent public access to Stewart Duff Drive, however if other imperatives such as airport or public health and safety ever outweigh the benefits of its retention or accessibility, then WIAL needs to retain an ability to review and address this under its existing legal obligations.
17	Given that the through-access road will be available for public use, the Council would expect the alignment and other aspects to be generally consistent with WCC roading standards. Matters of interest to Council include providing for a high standard of pedestrian and cycle access along or near the perimeter road, and the management of vehicle driveways through design or speed limits. Please advise whether WIAL is willing to provide relevant plans for certification by WCC, as a condition of the designation.	As discussed above, detailed design regarding the ESA and the roading is yet to occur. It is also noted that as Airport demand increases there might be a progressive implementation approach to the development of the ESA adopted. This in turn may mean the road location alters as the development progresses eastward. It is intended that roading design and construction will be part of subsequent outline plan requirements and a separate certification condition is not necessary as a result.
18	The AEE appropriately notes an expectation that the Let's Get Wellington Moving project will be the mechanism through which existing and foreseeable future constraints in the transportation network between the city and airport will be addressed. That expectation is consistent with the	The ESA does not provide for mass transport facilities as it has a focus on the provision of aircraft and airside activities and facilities for the Airport in this particular location. It is however something that has been considered and factored into WIAL's wider master planning, which is directed at making provision for a multimodal transportation hub, alongside more "traditional" private vehicle focussed infrastructure such as carparking and

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	Council's transport and urban development strategies. Reflecting this context, the Council would prefer to see the AEE and associated designation conditions making a clear commitment to providing for public transport trips to and from the airport a higher priority than private vehicle / taxi trips. Please advise ways in which the NoR can positively provide for high standard mass transit facilities and promote public transport in preference to private travel modes.	vehicle access. Such facilities would need to be incorporated in and around the main terminal precinct which is not the subject of this NOR. It is intended that WIAL will continue to be an active stakeholder in the Let's Get Wellington Moving Project and will work together to develop positive strategies to enhance public transportation usage as this and the implementation of WIAL's master plan progresses.
Overla	aps with WWTP Designation	
19	 In the graphic supplement to the Visual Effect Assessment, Figure 7 and VS 1-1A, show removal of a hill landform which lies immediately north of the wastewater treatment plant (WWTP) entrance. We note that: The hill lies entirely outside the East Side Area, and is therefore within the area of the proposed Airport Main Site designation; A significant part of the hill is subject to the WWTP designation; and 	As set out in the NOR, a small portion of the proposed designation area crosses the Wellington City Council Designation relating to wastewater (Designation 58). This is zoned for Airport Purposes and it is understood that the current WCC Designation covers surplus land and it has been indicated that Wellington Water is likely to relinquish this area from within the designation boundary during the rollover process under the District Plan review. Notwithstanding this WIAL will seek the written approval of the existing designation holder prior to undertaking works on this area of the site. This has not yet occurred, however WIAL is in ongoing discussions with Wellington Water regarding this matter. It is noted that Section 177 of the RMA contemplates overlapping designations and formal approval from WWTP would be required at the time the new designation is implemented.
	 A small part of the proposed ESA designation (its southwest corner) overlaps the WWTP designation. 	
	Please advise whether the Council, in its role as requiring authority for the WWTP designation has provided approval for removal of the hill landform.	
20	Please also provide a summary of all circumstances related to all overlaps with the WWTP designation, including:	

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	An outline of WIAL's proposed works within the WWTP designation;	As set out above, a small portion of the proposed designation area also crosses the Wellington City Council Designation relating to wastewater (Designation 58). A conceptua master plan of the ESA has been provided as part of the NOR, however it is noted that in order to retain sufficient flexibility in how the site is ultimately developed, the exact project works and activity details would be subject to an outline plan process. Until such detailed design has commenced WIAL cannot be certain on what will occur exactly within this location of the designation.
		It is also noted that WIAL is currently in discussion with Wellington Water regarding its future intentions on its site. This may result in alterations to the current extent of the WCC designation.
	WIAL's understanding of future works proposed by WCC which may lie within the overlapping designation areas;	As noted above WIAL is in discussions with Wellington Water regarding this site and understands that this area may be surplus to requirements. As discussed above Section 177 of the RMA contemplates overlapping designations and formal approval from the other equiring authority would be required at the time the new designation is implemented and could be refused if the work proposed would prevent or hinder the works or project associated with the earlier designation.
_	 Whether any amendments to the proposed Main Site designation provisions need to be amended to better reflect the overlaps; and 	The boundary of the designation with respect to the Main Site NOR follows the existing areas zoned for Airport Purposes and which is owned or leased by WIAL. On this basis no changes to the Main Site Designated area is currently proposed.
_	 WIAL's approach to resolving and clarifying the future nature of works within those areas. 	See responses above. Section 177 will manage any potential conflict in the unlikely event this arises.