Ms. Amanda Hosken
Principal Planning Officer
State Assessment Referral Agency
South East Queensland (South) Regional Office
PO Box 3290, Australia Fair
Southport QLD 4215
Email < SEQSouthPlanning@dsdmip.qld.gov.au >

Wednesday, 3 August 2022

Dear Amanda,

Re: Response to SARA Information Request for MCU/2021/144 @ 2 Karingal Drive, Pimpama

Devalign is in receipt of SARA's Information Request dated 14 May 2021. Accordingly, we formally submit the following information to enable Council Officers to finalise your assessment of the proposal.

1. Written Response to the Council Information Request (see page 2 onwards);
2. Attachment A – Concept Plan of Development (Revised);
3. Attachment B – Technical Engineering Response; and
4. Attachment C – Letter of Advice of Watercourse Determination.

We are confident that the information that has been prepared and submitted will enable SARA to favourably consider the development proposal.

If you have any questions relating to the submitted materials, please feel free to contact me to discuss this matter further, either by phone (0402-482-955) or email shane@devalign.com.au.

Many thanks for your time,

Shane Murrihy

Shane Murrihy
Senior Town Planner and Development Manager

Written Response to the SARA Information Request

The following table details the response to the contents of SARA's Information Request.

Information Request Action	Response
1. Revised Conceptual Stormwater Management Plan and Hydraulic Impact Assessment *Provide further information to demonstrate how the proposed development will achieve PO16-PO17, Table 2.2.1 of State code 2. To assist in demonstrating compliance, provide a revised Conceptual Stormwater Management Plan (including a revised Hydraulic Impact Assessment) which assess the potential stormwater impacts on the state transport corridor (Gold Coast Line) resulting from the proposed development and recommends appropriate mitigation measures (if required).* *The revised Conceptual Stormwater Management Plan (and revised Hydraulic Impact Assessment) should address (but not be limited to):* *(i) Flood Impact Assessment. Clarify if flood depths or flood levels were used to produce the afflux maps. If depths were used, it is suggested that absolute levels are used and the Hydraulic Mapping Results should be amended.* *(ii) Revise the hydraulic model features. Include a hydraulic model setup underpinned by a bulk earthworks drawing. This should be used to inform afflux maps to better visualise the proposed concept.* *(iii) Maintain the pre-development condition. The pre-development flow scenario will need to be replicated in the post development condition. The pre- development flow scenario will need to be replicated in the post development condition. The proposed development should not impede or interfere with any drainage, stormwater or floodwater flows, including sheet flows, from the railway corridor and future railway corridor or vice versa. Retaining structures, filling/excavation, landscaping, buildings and structures or any other works to the land should be designed to include provision for drainage so as not to adversely impact on the railway corridor.* • *The proposed 'on-line' detention basin will change the configuration of the waterway. The current hydraulic characteristics within the waterway located at the railway corridor should be maintained.* • *The site is also located at the lower end of a large catchment, detention may coincide with the peak flows of this catchment and case an adverse impact on the railway corridor. Further sensitivity analysis is requested.* • *Mapping (velocity) should be provided to clearly illustrate the pre-development scenario, and the post development impacts of the proposed 'on-line' detention basin for all relevant design events. Potential sedimentation and consequential culvert blockage could be accused if velocities are too low due to the proposed basin.* • *Any flooding impacts of the proposed development should be clearly conveyed in relation to the potential impacts on rail*	Reference is drawn to the Revised Concept Plan of Development (Attachment A) and the contents of the Technical Engineering Response (Attachment B), which provides sufficient detail to demonstrate adherence with this requirement, with further design work to be conducted as part of the subsequent Operational Works phase of the project.

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transport infrastructure such as the railway formation (for example, embankment), ballast, track levels, bridges, drainage features (such as culverts) and other relevant rail transport infrastructure. Railway tracks are constructed using specifically designed pavement structural layers. Increased inundation must not result in soaking of the underlying layers in the railway. Where there is a flooding impact on the railway corridor, cross sections should be provided showing the flood impact in the railway corridor at regular intervals and critical sections in relation to the rail transport infrastructure. The cross sections should show the registered levels (RLs) of the rail transport infrastructure and pre and post peak water levels (change in flood height) for all relevant design events. *(iv) Water quantity assessment. The peak discharge analysis should provide adequate details of the pre and post development impervious area of the site and give adequate consideration to the detention basin requirements of the QUDM, Fourth Edition.* *(v) Revised conceptual stormwater drainage layout. The stormwater strategy should be revised to address the aforementioned issues and to address all relevant design events.* *(vi) Revised mitigation measures. Include details of the revised mitigation measures proposed to address any potential stormwater and flooding impacts of the proposed development. The design flood peak discharges should be shown for the mitigated case to demonstrate there is no worsening impact on the railway corridor. All mitigation measures must be located on the site and not in the railway corridor.*	
2. Revised Noise Impact Assessment *Provide further information to demonstrate how the proposed development will achieve PO25-PO26, Table 2.2.2 of State code 2. To assist in demonstrating compliance, provide a revised Noise Impact Assessment which assess the potential noise impacts on the state transport corridor (Gold Coast Line) resulting from the proposed development and recommends appropriate mitigation measures (if required).* *In particular, the revised Noise Impact Assessment should be address (but not be limited to):* • *Be conducted in accordance with the Attachment entitled, Additional requirements for preparing a Railway Noise Assessment Report in accordance with an IDAS information request.* • *In accordance with the Transport Noise Management Code of Practice (Volume 3: Operational railway noise and vibration), calculate the single event maximum sound pressure level as the arithmetic average of maximum levels from the highest 15 single events over a given 24 hour period. The LAmax calculated in the report should be revised to conform with this requirement. Any assumptions regarding the LAmax must be clearly stated including the height of the main noise source above ground, actual source noise level, location and strength assumptions. The report shall provide graphical representation of the train passby noise measurements for the full duration of the noise measurements and tabulate the 15 highest noise events used to determine the SEM.*	In response to this RFI item, we acknowledge and accept the proposal for relevant and reasonable conditions of approval to be imposed which requires that each dwelling has an area of outdoor space, that has a solid gap-free fence, or other solid gap free structure that shields the outdoor space from noise.

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• *Noise measurements and monitoring should be conducted over a two day period, preferably on highest trafficked days. Timetable information for passenger rail can be obtained from the railway manager (Queensland Rail).* • *State the rail traffic movements (passenger, freight) used to generate the Leq (24hr) and LAmax level predictions.* - *The rail noise measurements shall be repeated using a suitable orientation of the microphone. Typically, microphones used for free field noise measurements would either require the microphone to be pointed towards the noise source or at grazing incidence (75 - 90 degrees to microphone axis).* - *The rail noise measurements shall be repeated using fast time response. The rail noise measurements have been conducted using slow time response (1 second), however the Interim Guideline requires noise measurements to be conducted using fast time response.* - *The noise measurements shall be repeated with NATA calibrated equipment. The noise logger used appears to be a MEMS technology noise logger which cannot be NATA calibrated as required by the Interim Guideline.* - *The report shall provide the weather data used as the basis for excluding rail noise measurement data. The data excluded from the analysis should be clearly identified. Exclusion of noise data shall be in accordance with the Interim Guideline.* - *The report shall confirm the finished floor levels considered in the rail noise modelling for each townhouse. The receiver heights are not confirmed in the report but should be 1.5m above finished floor levels.* - *A figure shall be provided in the report which identifies the location of the proposed noise barriers with the noise barrier height and top edge reduced level (RL AHD) every 10m along the barrier, at any change in barrier height and at barrier ends.* - *Grid noise maps showing the predicted SEM noise levels across the site shall also be provided in addition to the equivalent continuous noise levels.* • *Describe the modelling methodology used to prepare the assessment, including the choice of model, how the LAmax noise levels have been calculated, the number of assumed train pass-bys per day and verification of the accuracy of the model, including whether measured data was used.* - *It is understood that the modelling is based on a line source using the ISO9613-2 calculation method. This method is typically used to predict the equivalent continuous noise levels from noise sources, not the maximum noise levels as required for assessment against SDAP noise criteria. The preferred method for rail noise modelling in Queensland is Kilde 67/130. L2 corrections have not been tested in Queensland and all modelling shall be based on the L1 noise sources/corrections. Further guidance for rail noise modelling and corrections is contained in Acoustic 2017 – Regional detailed transport modelling – railway methods and outcomes and the Interim Guideline.*	

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• *Demonstrate that the development can achieve the relevant internal and external noise set out in PO25 and PO26. These noise criteria are set out in the Department of Transport and Main Roads Development Affected by Environmental Emissions from Transport Policy, Version 4 (October 2017), which is available at: https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Development-on-Land-Affected-by-Environmental-Emissions.* • *Re-assess the noise mitigation measures required to meet the relevant railway noise criteria in light of the above requirements. The noise categories should also be revised. Demonstrate that any proposed noise barriers will comply with AO26.1 of PO26 and with Queensland Rail civil engineering requirement CIVIL-SR-014 – Design of Noise Barriers Adjacent to Railways. The location and height of any proposed noise barriers should be clearly shown on a proposal plan. The height of any proposed noise barrier should take into account the varying topography of the land and the proposed finished levels of the development.* ***Alternatively*** *If an amended Acoustic Report is not provided the development will be conditioned to ensure each dwelling has an area of outdoor space, that has a solid gap-free fence, or other solid gap free structure that shields the outdoor space from noise.*	
3. Koala habitat value assessment *Provide further information to demonstrate how the proposed development will achieve compliance with Purpose Statement 1, Purpose Statement 5 (as it relates to mapped koala habitat), PO1 and PO5 (as it relates to mapped koala habitat) of State code 25. To assist in demonstrating compliance, provide a koala habitat value assessment, prepared by an appropriately qualified ecologist, that includes:* • *a tree survey plan that identifies the location of all non-juvenile koala trees in the mapped koala habitat along with:* - *identification number that correspond to each tree;* - *GPS coordinates for each tree;* - *the species of each tree;* - *the height of each tree;* - *the circumference of each tree at 1.3m above the ground;* - *the tree protection zone of each tree;* - *special features that exist on each tree (e.g. hollows (including approximate size), nests, scratches, termitaria, etc.);* - *what tree species utility it has been assigned by Appendix 4 of Spatial modelling for koalas in South East Queensland;* - *if a tree is a koala habitat tree1, whether it is a non-juvenile koala habitat tree; and* - *whether each tree is to be retained or removed (noting that trees which could be removed by exempted development created as a natural and ordinary consequence of the development being approved (e.g. firebreaks, fire management lines, access tracks, fences) are considered trees to be removed).* • *the results of an onsite vegetation survey that:*	Reference is drawn to the Revised Concept Plan of Development (Attachment A), which has been heavily informed through extensive engagement with SARA that has been carried out over the past period of time. In determining any requirements for offsets (planting and/or financial), we kindly seek SARA's support in continuing to engage on these matters upon confirmation of the final development layout.

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- *identifies the regional ecosystem present onsite generally in accordance with Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland (noting that if the RE present is different to what is mapped sufficient information will need to be provided to demonstrate that this is the case);* - *the koala suitability ranking assigned to these REs by Appendix 3 of Spatial modelling for koalas in South East Queensland; and* - *describes the condition of the vegetation present (i.e. identifying areas that have been degraded or are of higher condition and the reasoning for this) (see BioCondition and/or Guide to determining terrestrial habitat quality for information on appropriate methodologies);* • *the results of onsite koala surveys (in accordance with an appropriate and robust methodology) that identify the use or potential use of koalas (e.g. koala sightings, scats, scratches) (see EPBC Act referral guidelines for the vulnerable koala for information on appropriate survey methodologies);* • *the result of a koala habitat connectivity value assessment for the site and surrounding areas (see section 2.2 of the Koala-sensitive design guideline and EPBC Act referral guidelines for the vulnerable koala for information on how to undertake a suitable assessment); and* • *the results of an existing threats to koala assessment (see section 2.2 of the Koala- sensitive design guideline, EPBC Act referral guidelines for the vulnerable koala and Guide to determining terrestrial habitat quality for information on how to undertake a suitable assessment);* • *demonstrates and justifies that impacts to the mapped koala habitat area have been avoided or minimised to the greatest extent reasonably practicable with impacts to koala habitat values3 mitigated to the greatest extent reasonably practicable; and* • *identifies the amount (in hectares) of mapped koala habitat area and the number of NJKHTs the covenant area on Lot 3 on RP224516 (shown on approved plans for the approved ROL) and Lot 2 on RP895082 that would be impacted from the development (after demonstrating all reasonable avoidance/minimisation of impacts).* *This report should include:* • *direct and indirect impacts to mapped koala habitat (i.e. direct impacts from proposed infrastructure and indirect impacts from exempted development created as a result of the development);* • *alternative designs that were considered to minimise and mitigate impacts to mapped koala habitat and koala habitat values along with justification for why development options that result in no or less impact on koala habitat areas and koala habitat values were determined to not be reasonably possible (reference results of koala habitat values assessment);* • *the extent of impact from each alternative design (area in hectares and number of non-juvenile koala habitat trees);* • *justification of how the proposed design minimises impacts to mapped koala habitat to the greatest extent possible (reference results of koala habitat values assessment);*	

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• *details of the type, location and design of any proposed koala-sensitive design measures (reference results of koala habitat values assessment); and* • *details on any proposed rehabilitation and/or protection of retained habitat.* *It is recommended the following be considered:* • *the Avoid and mitigate checklist;* • *placing unavoidable impacts in areas of the site that provide the lowest koala habitat values in accordance with the results of koala habitat values assessment (e.g. lowest value RE, lowest vegetation condition, lowest value tree species, less connectivity, more threats, less evidence of usage);* • *mitigating impacts on koala habitat values by:* - *retaining sufficient koala habitat in locations that will allow koalas to use and move through the site;* - *improving degraded koala habitat that is to be retained on the site by removing weeds and planting koala food trees endemic to the site;* - *protecting koala habitat proposed to be retained through covenants or similar;* - *minimising impacts on retained habitat and koalas using the area by:* □ *providing a buffer between development and any retained koala habitat; and/or* □ *managing edge effects on retained koala habitat including:* □ *changes in soil condition, such as nutrients and erosion;* □ *altered hydrological flow;* □ *the introduction or increase of weed and exotic plant species;* □ *disturbances to vegetation;* □ *a modified fire regime;* □ *the introduction of predators to koalas; and* □ *increased light, noise or dust.* • *incorporating koala sensitive design into the development (see Koala-sensitive design guideline).*	
4. Number of non-juvenile koala habitat trees and detail on future management *Provide further information to demonstrate how the proposed development will achieve Purpose Statement 1, Purpose Statement 5 (as it relates to koala habitat), PO1 and PO5 (as it relates to koala habitat) of State code 25. To assist in demonstrating compliance, provide:* • *the number of non-juvenile koala habitat trees that could be established in the proposed rehabilitation area at a density reflective of the pre-clear regional ecosystem in accordance with the methodology described in Chapter 3 of the Guide to determining terrestrial habitat quality (including the workings for this calculation) to demonstrate the extent to which the proposed rehabilitation will mitigate impacts on koala habitat area and koala habitat values; and*	Reference is drawn to the Revised Concept Plan of Development (Attachment A), which has been heavily informed through extensive engagement with SARA that has been carried out over the past period of time. In determining any requirements for offsets (planting and/or financial), we kindly seek SARA's support in continuing to engage on these matters upon

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• *the mechanism proposed to ensure that the connectivity outcome proposed will be maintained into the future including activities that will be prohibited and permissible with justification for why this commensurate with koala conservation.*	confirmation of the final development layout.
5. Koala connectivity report *Provide further information to demonstrate how the proposed development will achieve Purpose Statement 2, Purpose Statement 3, PO2 and PO3 of State code 25. To assist in demonstrating compliance, provide a report, prepared by a suitably qualified ecologist, that:* • *provides an assessment of the existing connectivity values and safe koala movement opportunities that currently exist on the site including highly connected koala habitat areas on and around the site and areas that are not koala habitat areas that could be used by koalas to move through the landscape (pre- development);* • *demonstrates how connectivity will be maintained through the proposed corridor including:* - *the dimensions of the area (e.g., length by width) proposed to be retained to avoid fragmenting koala habitat areas;* - *the composition on the area retained (e.g., does the area contain remnant or regrowth vegetation, what are the flora species in the retained area, does it contain koala habitat area, other native or non-native vegetation, is the area cleared, what is the location and distance between koala habitat areas or individual tree);* - *any actions that will be undertaken on land retained to avoid fragmenting koala habitat areas that will improve connectivity between koala habitat areas (e.g., removing barriers, revegetating with koala habitat trees, the density of plantings, the distance between planted trees, encouraging natural revegetation, incorporating principles of koala-sensitive design (described in the Koala-sensitive design guideline));* - *elevation and slope or areas to be retained to avoid fragmenting koala habitat areas;* - *the location of waterways and waterbodies in relation to areas retained to avoid fragmenting koala habitat areas;* - *management actions to ensure corridor functionality is maintained as anticipated; and* - *discussion on why those areas are suitable for maintaining connectivity for koala movement (with consideration to the points mentioned on page 11 of the State Code 25 Guideline); and* • *identifies barriers to safe koala movement within and between highly connected patches of koala habitat area that will be introduced by the development (e.g. clearing, constructing fences, retaining walls, pools, roads, dogs etc.);* • *outlines measures that will be undertaken to ensure koalas can move safely within and between highly connected patches of koala habitat area;* • *provides justification for why the proposed measures are suitable for providing safe koala movement opportunities; and*	Reference is drawn to the Revised Concept Plan of Development (Attachment A), which has been heavily informed through extensive engagement with SARA that has been carried out over the past period of time. In determining any requirements for offsets (planting and/or financial), we kindly seek SARA's support in continuing to engage on these matters upon confirmation of the final development layout.

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• *provides an assessment of the connectivity values and safe koala movement opportunities that would exist on the site post-development.*	
6. Koala management plan *Provide further information to demonstrate how the proposed development will achieve Purpose Statement 4 and PO4 of State code 25. To assist in demonstrating compliance, provide a koala management plan prepared by a suitably qualified ecologist that identifies the following:* • *all potential risks to koalas from clearing and construction activities proposed on site including during clearing, earthworks and building works (noting that the risk to koalas can be higher in areas where clearing has previously occurred as koalas will remain in or near their home range areas even after clearing has occurred and therefore may try to remain on the development site while it is being developed);* • *all management measures that will be implemented to address those risks;* • *the process and measures to address accidental injury or death of koalas; and* • *the process for implementing the management plan including:* - *identifying the person responsible for implementing the plan (e.g., site supervisor, foreman); and* - *the process for training all contractors working on the site to comply with the plan; and* - *how compliance with the clearing requirements of the Nature Conservation (Koala) Conservation Plan 2017 will be complied with.*	Reference is drawn to the Revised Concept Plan of Development (Attachment A), which has been heavily informed through extensive engagement with SARA that has been carried out over the past period of time. In determining any requirements for offsets (planting and/or financial), we kindly seek SARA's support in continuing to engage on these matters upon confirmation of the final development layout.