### Memo

Date:	10/07/2023		
To:	Kaipara District Council		
Prepared by:	Nat Jull	-	Civil Engineer
Reviewed by:	Steven Rankin	-	Civil Engineer

### Subject: Response to AWA Technical Review of Stormwater Management

### 1 Introduction

Moonlight Heights Limited (MHL) have submitted a Private Plan Change, (PC82) to rezone multiple lots on Awakino Road, Dargaville from Rural into Residential. Chester Consultants Ltd (Chester) are engaged by MHL to provide Civil Consulting services to support the proposed plan change including preparing the stormwater management plan and providing input into the proposed stormwater provisions submitted.

Kaipara District Council (KDC) engaged Awa Environmental Ltd (AWA) to undertake a preliminary review of the Stormwater Management Plan submitted to identify potential effects, how they are managed and to provide a list of recommended further information requests. This memo is response to the further information requests and is to be read in conjunction with the memo prepared by AWA which is attached.

It is important to note that the consent being sought if for zoning only; to this point; the level of information required sits at a higher level where the test is more around any fundamental engineering flaws and ensuring the planning provisions are suitable to enable future development. In simple terms the specific development assessments will be completed at the time of development inline with the associated planning provision at both a local and regional level as required. In our opinion some of the questions posed in the AWA document are more landuse / subdivision questions not necessarily relevant for the assessment of the plan change zoning.

#### 1.1 Reference Documents

Please note that the use of Auckland Council and documents in this engineering assessment is because Auckland Council are currently the most advanced in developing best practise stormwater documents that give regard to the higher-level statutory documents related to stormwater. The PC82 environment and the general KDC environment is not dis-similar to the Auckland region in terms of geology, topography, receiving environment and rainfall thus the general approach is considered to be transferable as an initial baseline in the absence of district specific parameters. Similarly, Whangārei District Council documents have been utilised.

### 2 Stormwater Quality

The submitted Stormwater Management Plan (SMP) was prepared to inform future development(s) of the proposed stormwater provisions for the Awakino Precinct and provide an example of what implementation of them may look like. The SMP does not set out the specific stormwater management requirements for the Awakino Precinct, the provisions as proposed alone do that.



The provisions are proposed in response to the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F, specifically clause 55 (3)) and the subsequent Proposed Regional Plan for Northland (specifically clause F.1.2).

As submitted in the application, Rural Design have completed an Ecological Assessment Pertaining to PC82 and have identified wetlands and streams as defined under the Resource Management Act 1991 (RMA) and National Policy Statement for Freshwater Management 2020 (NPSFM). Stormwater from PC82 will discharge to these features and ultimately the Awakino River, Wairoa River and the Kaipara Harbour. Hence, we are of the opinion that water quality treatment is required.

In our opinion the current provisions and guidelines of the Operative Kaipara District Plan 2013 (KDP) and Engineering Standards 2011 (KDC ES) do not fully address water quality discharge and stream erosion protection in terms of best practice engineering design in line with the NES-F, hence the proposed provisions. We anticipate that when the KDC standards are updated they will align and give regard to these higher-level statutory documents, the main challenge here is timing as the zoning of this land is ahead of the KDC updates and we must give effect to these high policy documents. Had this application followed the KDC update then we wouldn't anticipate having the need for specific provisions.

So, in the absence of updated KDC documents, the proposed provisions are intended to steer designers from Auckland Councils Technical Publication 10 (TP10, where the current provisions and KDC ES take you) to Auckland Councils Guidance Document 01 (GD01) for stormwater quality and volume control design. Where the KDC ES do address matters in line with current best practice (e.g., primary conveyance, flooding, and general information requirements) these are still applicable.

The proposed provisions do not 'blanket' require treatment of all impermeable services as interpreted by AWA.

With respect to water quality, the following wording is proposed:

i. Treatment of the Water Quality Volume (WQV) or Water Quality Flow (WQF) from all **contaminant** generating **impermeable surfaces** by a water quality device for the relevant contaminants.

For clarification, the proposed provisions rely on the existing definitions in the Kaipara District Plan for **contaminant** which is:

#### Contaminant\*

Includes any substance (including gases, odorous compounds, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy, or heat –

- a. When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or
- b. When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.

(\*as being from the Resource Management Act 1991)

Given the above, there is scope at Land Use or Subdivision stage, for further site-specific analysis to be done to determine what the <u>relevant contaminants</u> are for the specific land use and receiving environment and implement design thresholds appropriately.

AWA have stated that "In Auckland, only high-contaminant generating areas specifically require water quality treatment (defined as High-Use Roads with traffic exceeding 5000VPD, and carparks with space for over 30 vehicles)." This is linked to the Auckland Unitary Plan's (AUP) definitions of high contaminant yielding areas. This statement is misleading because Auckland is large and complex with many different land-uses. If you consider what is typically required and



implemented in Auckland for residential 'greenfield' developments that discharge to a wetland or stream, treatment of all impervious areas by a water quality device is almost always required.

The main point of concern here from AWA is ensuring that only cost-effective assets are vested in Council at development stage, not whether treatment required. In our opinion the proposed provisions ensure this. The KDC ES require "*Lifecycle maintenance costs and requirements*" to be provided as information for consideration as part of a resource consent application. This means council will have control over what stormwater management systems are employed, what relevant contaminants they treat and what infrastructure is vested.

Furthermore, when the current provisions of the KDP and KDC ES are employed across the district now, stormwater infrastructure (e.g., attenuation ponds and wetlands) are often required in any case. What the proposed provisions do is change the design requirements of those devices from TP10 to GD01. Because the whole-of-lifecycle cost of a device designed in accordance with TP10 versus GD01 is similar, we believe the proposed provisions do not create a whole-of-lifecycle cost difference to what is status quo in KDC. What they will do is ensure that devices vested to KDC are in fact designed in line with current best practice.

At a high level we believe that the proposed provisions align to the higher-level statutory requirements; and meeting these obligations is the primary driver for the provisions.

### 3 Stormwater Quantity

As with Stormwater Quality the main purpose of the proposed provisions for Stormwater Quantity is, in the absence of adequate existing provisions, is to give regard and align to the higher-level statutory requirements.

As with Stormwater Quality, the Stormwater Quantity device cost and asset lifecycle needs to be considered, the ability to require and complete that assessment remains as per the KDC ES.

To expand on the engineering rationale for the water quantity / volume control requirements of the proposed provisions we have completed an assessment of the downstream receiving environment in general accordance with the assessment methodology set out in section 6.2 of Auckland Councils Technical Report 2013/035 (TR35). For further context please refer to TR35.

In summary, the assessment methodology is to obtain a score out of 35 from three key factors, stream slope (out of 10), cumulative imperviousness (out of 10) and Macroinvertebrate Community Index (MCI) (out of 15). Once the score is established a reassessment process considering seven moderating factors of the catchment is undertaken to refine the final score for the catchment. The assessment results in one of the following:

Score 0-15 (No SMAF) – No volume control warranted.

Score 15-20 (SMAF 2) – 90th percentile volume control warranted.

Score 20-25 (SMAF 1 or 2) – 90th or 95th percentile volume control warranted dependent on moderating factors.

Score 25-35 (SMAF 2) - 95th percentile volume control warranted.

From the assessment, several watercourses have been identified around the PC82 Area as sensitive to increased stormwater flows and so warrant volume control as per the criteria in TR35 to minimise erosion and protect/enhance watercourse health. The level identified is equivalent to that of SMAF 2 which in TR35 requires volume control of the 90th percentile rainfall event. This is comparable to 1/3 of the 2 Year ARI 24hr rainfall depth which has been proposed in the provisions in lieu of 90th percentile data not being available in KDC. This approach is consistent with what has been adopted in the Whangārei District for water quality volume control.

Figure 1, Figure 2 and Table 1 following set out our assessment.



Figure 1: Colour coded individual criteria scores.



Figure 2: Colour coded SMAF 1 and SMAF 2 score map.

#### Table 1: Moderating factors

Moderating Factor	Score (Low, Medium, or High)	Discussion	
		(To be read in conjunction with sections 6.3.4 to 6.3.10 of TR35 and represents the opinion of Chester only)	
Fish species distribution	Low	Assumed based on Section 4.3.6 'Aquatic Diversity' of the Ecological Assessment Pertaining to PC82 by Rural Design.	
Potential growth	High	The catchment is predominantly 'greenfield' with a high chance of growth. This assessment is part of the early planning stages for the catchment so there is a greater opportunity to make a difference.	
Percent natural streams	Medium	Far less than 50% of the catchment streams are piped but there are artificial drainage channels and culverts/flood gates that disconnect them from the coast.	
Existing Erosion	Low	From observation there appears to be little existing erosion which makes sense considering the catchment is pre-dominantly greenfield.	
Existing Investment	Low	We are unaware of any existing significant investment to enhance or protect the streams in the catchment.	
Community use	Medium	A 'focus on the river' was a key aspiration of the community as identified in the most recent spatial planning for Dargaville. The stream reaches being assessed intertwine with residential areas in Dargaville, but they are relatively short and do not present a significant opportunity for community use.	
Other	Medium	No existing reserves (1), no areas of combined sewer (3), there are pipe daylighting opportunities (3), the streams are important to Dargaville but likely less so on a region wide scale (2), the streams are relatively short (1), there is little to no existing stormwater management in the catchment (1), we are not aware of a specific community program (1) and the area is not of significant groundwater soakage (3). Average of 1 to 3, 1 being Low, 2 medium and 3 High = 1.88	
Overall	Low to Medium	Average of 1 to 3, 1 being Low, 2 medium and 3 High = 1.71 Based on the moderating factors and that none of the streams in the catchment scored higher than 25 (SMAF1 threshold), we are of the opinion that SMAF2 equivalent for volume control is appropriate for the catchment.	

### 4 Primary Stormwater Drainage

There is allowance in the proposed stormwater provisions for downstream infrastructure to be assessed and mitigation measures determined at Land Use / Subdivision stage. This is through the following wording:

1. Conveyance and discharge of primary and secondary flow in accordance with the Kaipara District Council Engineering Standards 2011.

We reiterate that the SMP submitted with the application does not set out the specific stormwater management plan for future development of the PC82 area but rather provides an example in line with the proposed provisions that we consider to be the best practical option.

In response to the AWA memo, we provide the following discussion regarding downstream primary drainage systems.

The drainage downstream of the PC82 area and below the streams assessed in the section above, consists of a series of open drains that channelise flow into flood gates that discharge to the Awakino River. In these drains there are farm culverts that convey water under a farm raceway as well as a culvert under Awakino Road that the sites small western sub-catchment discharges to. The area aside the drains is a natural floodplain that is wide and flat and is currently used for rural production purposes. Its reduced level is at or below RL 3.00m so it is within the coastal influence boundary in terms of being susceptible to coastal inundation. Because of the flat nature of the land and that discharge is controlled by flood gates, the drains do not simply convey flood waters to an open outfall but rather drain the flood plain after cyclical flood events and reduce groundwater levels. Modelling we have completed (that is discussed further in the following section of this memo) indicates that this area floods and the conveyance capacity of the open drains are exceeded during the 5-year ARI event using the TR55 Type 1A storm profile. This is assuming maximum probable density for both the current Rural Zoning and Residential Zoning for PC82.

We appreciate that the capacity of the infrastructure (farm culverts and flood gates) mentioned above will have a relationship with the frequency and nature of flooding on the surrounding paddocks particularly for more frequently occurring events. However, this effect will be insignificant compared to the wider flooding risk the area is subject to. Nevertheless, further assessment of this infrastructure can be completed at subdivision / land use stage and catchment attenuation, or upgrades implemented accordingly. We note that the volume controls imposed by the provisions for stream protection will inadvertently provide mitigation for most rainfall events (i.e., up to the 90<sup>th</sup> percentile).

With respect to the drainage on Awakino Road. It is acknowledged that the current carriageway and drainage along Awakino Road is not to a standard suitable to serve the density enabled by PC82. The proposed provisions ensure that this matter will be addressed at land use or subdivision stage meaning the drainage will be upgraded in accordance with the KDC ES.

### 5 Flood Hazard

#### 5.1 Coincident Peaks

Considering the location of the PC82 Area compared to the wider Awakino River catchment it is reasonable to assess peak flow run-off from the Dargaville Area occurring prior to the peak flows from the upper Awakino River catchment when assessing development effects during the 10-year and 100-year ARI design storm events. In terms of the temporal rainfall patterns, there is evidence to suggest that rainfall is distributed in a manner consistent with this assumption. An example is included in the NRC Flood modelling for the Kaihu Valley, Dargaville, and Awakino floodplain report, completed by Barnett & Macmurray Limited, dated April 2018 whereby a storm in 2014 was assessed to show peak rainfall intensities occurring in Dargaville 2hrs later than the upper catchments. Given the time to peak of the Awakino River is approximately 12hrs, this real-world scenario is consistent with the assumption.



However, as AWA has highlighted, there is a possibility that coincident peak flows could occur between the Dargaville and wider Awakino River Catchments. We note that although this is theoretically possible, it likely has a recurrence interval much higher than a 100-year (ARI).

To assess the potential effects from PC82 during this scenario we have developed a flood model using HECRAS software. The model assesses the worst-case situation whereby the PC82 Area discharges to the Awakino River with coincident peaks and compares two scenarios:

- 1. PC82 Area at 15% imperviousness to represent current maximum probable density for Rural Zoning.
- 2. PC82 Area at 60% imperviousness to represent PC82.

The model results estimate an increased run-off flow and volume of 0.621m<sup>3</sup>/s and 10,650m<sup>3</sup> respectively which increase flood depths across the flood plains below the PC82 area by 0.0009m (less than 1mm) during the 100-year ARI storm event. This little of an increase is expected due to the vast nature of the 100-year ARI flood extent. In our opinion a depth increases of less than 1mm across the floodplain represents a no more than minor flood risk effect, so we conclude that 100-Year ARI attenuation is not warranted in the PC82 catchment.



Figure 3: Difference in water level between the two flood scenarios for the 100-Year ARI rainfall event during the peak flow from the Awakino River.

#### 5.2 Local Land Flooding

AWA has also commented that there is no assessment on the existing overland flow paths, property, or other infrastructure between the PC82 area and the Awakino River.

To assess this, additional flood modelling was conducted looking at the 5-Year and 10-Year ARI design storm events considering only the local catchments that discharge to the flood plain between the PC82 Area and the Awakino River. This is to assess scenarios where the Awakino River flows do not breach the stop banks and dictate critical flood levels.



The model assumes the worst-case scenario whereby the flood gates do not allow water to exit into the Awakino River to simulate the effects of high-water levels of the Awakino River.

The model compares the same two scenarios for the PC82 area as above.

From the flood models, it is estimated that both the 5-year and 10-year ARI design storms will exceed the banks of the various open channels located in this area and that the flood plain will activate. The model indicates both the 5-year, and 10-year ARI design storm flood levels increase by around 0.012m when comparing the different scenarios. In our opinion this presents a less than minor potential effect.



Figure 4: Difference in water level between the two flood scenarios for the 5-year ARI.



Figure 5: Difference in water level between the two flood scenarios for the 10-year ARI.

#### 5.3 Attenuation Discussion

The area between the PC82 area and the Awakino River encompasses low-lying terrain, which has been indicated as both a flood hazard zone and a coastal inundation area, as indicated by the hazard mapping data accessible through the Northland Regional Council's GIS websites. Presently, this area serves agricultural purposes, and it is improbable that it will undergo a transition to flood vulnerable land uses due to the substantial flood hazards already established in these localities. Implementing attenuation measures will not facilitate a transformation downstream that would permit other more vulnerable activities to take place.



Figure 6: 100 Year ARI Coastal Inundation extent in light blue and 100-year ARI floodplain in blue (Priority Rivers model) extent from the NRC Natural Hazards GIS webpage

Moreover, the increase of 12mm in the flood levels to both the 5-year ARI and 10-year ARI remains less than minor when compared to the flood levels observed during the 100-year ARI event. Any efforts aimed at attenuation to alleviate the consequences of a 12mm rise for the smaller rainfall events would prove ineffective in mitigating the overall hazard in this area due to the effects of the 100-year ARI event. The stormwater facilities required to attenuate the impacts of the flood hazard are impractical and would yield no substantial reduction in downstream flooding. Noting that detention of frequent events up to 1/3 of the 2-year ARI is likely to be implemented in accordance with the proposed provisions.

Finally, it is important to note that the key stakeholders of PC82 own the majority of the farmland situated between the PC82 area and the Awakino River which is subject to the less than minor increase in flood effects from PC82. This means that these effects could be disregarded under section 95D of the Resource Management Act.

Apart from the stakeholder's land, it is estimated that the effects may increase flooding on Lot 2 DP 525893 (No. 130 SH14). This lot contains drainage channels that could back up during the worst-case scenario where flap gates do not allow any water to flow into the Awakino River. However, as per the above assessment, the increase is approximately 12mm and considered to be less than minor compared to the wider flood risk posed to this property from the Awakino River.



### 6 Conclusion

Thank you for providing us with an opportunity to address the questions raised by AWA. We trust the above:

- Provides further technical basis and justification for the proposed water quality and volume control provisions.
- Identifies the potential effects of PC82 on the downstream drainage infrastructure (for the 5-year ARI) and provides confidence that there is provision that these effects can be appropriately managed through future resource consent applications.
- Identifies the potential effect PC82 has on the flooding risk (for the 100-year ARI) between the site and the Awakino River and demonstrates that this is less than minor.

The AWA document did not raise any issue that prevents the PC82 area being zoned for a residential use; rather the questions were around the technical provisions and detail that would need to be provided at a landuse / subdivision stage when a development is proposed.

If you have any questions, please do not hesitate to contact the undersigned.

Yours Sincerely, Nat Jull

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Attachments

- 1. Primary Drainage Infrastructure Exhibit
- 2. AWA memo

### Attachment 1

Primary Drainage Infrastructure Exhibit





## Attachment 2

AWA Memo



## **TECHNICAL REVIEW MEMO**

то:	David Usmar	DATE:	23/06/2023
FROM:	James Taylor	PROJECT NO.:	J000740
SUBJECT:	Technical Review of Stormwater Management for Private Plan Change 82		

### INTRODUCTION

Moonlight Heights Limited (MHL) have submitted a Private Plan Change, (PPC82) to rezone multiple lots on Awakino Road, Dargaville from Rural into Residential.

Kaipara District Council (KDC) have engaged Awa Environmental Ltd (Awa), to undertake a preliminary review of the proposed stormwater management submitted as a part of PPC82 by Chester Consultants Ltd (Chester). The scope of work is to complete a preliminary review of the proposed stormwater management strategy to identify potential effects, how they are managed and to provide a list of recommended further information requests, if any, to KDC.

#### **DOCUMENTS REVIEWED**

Table 1 Summary of Documents Reviewed

DOCUMENT NAME	AUTHOR	REVISION
Appendix 3A Land Development	Chester	0
Report		
Appendix 3B Stormwater Management	Chester	0
Plan		
Kaipara District Council Summary of	KDC	-
Submissions for PPC82 - Moonlight		
Heights		

#### LIMITATIONS

The review memorandum has been prepared for Kaipara District Council only and should not be used or relied on by any other person or entity. We note that this review has been undertaken purely from a compliance with regulatory requirements and 'assessment of effects' perspective only.

### TECHNICAL REVIEW OF STORMWATER MANAGEMENT

#### WATER QUALITY

The applicant proposes to include provisions within the Precinct plan to include treatment via water quality devices for either a 10mm/hr rainfall intensity, or 1/3 of the 2-year ARI 24-hour rainfall event, for

all 'contaminant generating areas' which the applicant appears to define as all impervious area's excluding building roofs. We note that for other Territorial Authorities, including Auckland Council, which the applicant refers to, a cost-benefit analysis is undertaken to inform the threshold for stormwater treatment. In Auckland, only high-contaminant generating areas specifically require water quality treatment (defined as High-Use Roads with traffic exceeding 5000VPD, and carparks with space for over 30 vehicles).

The proposed provisions however specify treatment of all impervious surfaces, irrespective of the activity and land-use. We note that blanket provisions such as this for stormwater treatment may see the vesting of devices which have unknown or limited benefit, but significant operating and maintenance costs, imposed upon Kaipara District Council.

The applicant has also not assessed the potential cost implications or ability of Kaipara District Council to fund the infrastructure in terms of the whole-of-lifecycle cost required to achieve the treatment provisions proposed.

#### WATER QUANTITY

We note that the Northland Regional Council (NRC) Water & Soil Plan has policies requiring bestpracticable option be identified for stormwater management. The applicant has proposed a provision in the Precinct plan, requiring water quantity management similar to Auckland Council's "Stormwater Management Area: Flow" provisions in their Auckland Unitary Plan. However, in Auckland, this type of control is typically based on a technical assessment of the downstream receiving environment, considering propensity for adverse hydrological effects and stream erosion effects, amongst others, and the sensitivity to the land-use changes proposed. Within this context, this application has not provided any site-specific analysis for the benefits of such a provision and has instead applied a precinct wide control.

Without a site-specific analysis, these provisions may see stormwater management infrastructure required to be vested to Kaipara District Council, which have unknown benefits, but potentially significant whole-of-lifecycle costs associated.

The applicant has also not assessed the potential cost implications or ability of Kaipara District Council to fund the infrastructure in terms of the whole-of-lifecycle cost required to achieve the water quantity provisions proposed.

#### PRIMARY STORMWATER DRAINAGE

The applicant proposes that new public stormwater infrastructure is to have capacity for the 5-year ARI rainfall event which aligns with the level of service specified in KDC's Engineering Standards. It will be necessary however, that any new stormwater infrastructure drains into downstream land drainage systems. There is no evidence to confirm whether the downstream land drainage infrastructure will have capacity accept the additional runoff from increased impervious areas, particularly given the proposed maximum impervious area exceeds the maximum permitted under the KDC District Plan residential zoning.

There is also no discussion on the existing drainage on Awakino Road. For the proposed density, urban stormwater network upgrades may be required.

#### **FLOOD HAZARD**

The applicant states that the potential development of the site, to maximum probable development (60% imperviousness), will have no impact on peak flood level within the downstream catchment, due to the difference in time of concentration from the development catchment, versus the wider Awakino River catchment.

However, this has only been assessed in the context of peak flows, and relies on an assumption that rainfall in the site catchment occurs prior to rainfall in the Awakino River catchment. It is understood that the Awakino River is a very large catchment, with a very long response time, however there is no evidence to suggest that rainfall would occur in such a manner as assumed by the applicant. Whilst the applicant is correct in that attenuation of runoff from the site could increase the likelihood of coincident peaks occurring, there is no evidence to suggest that coincident peaks would not still occur. It is clear however that if attenuation was proposed that it would reduce the absolute impact on flooding in the event that coincident peaks occur.

We also note there is also no assessment of the impact of the Plan Change on existing overland flow paths, property, or other infrastructure between the plan change site and the Awakino River. In particular, we note that drainage to the Awakino River can be impacted by the levels within the Awakino River itself, due to the presence of flap gates on outlets to the tributary drains. A lack of attenuation could result in increased flooding on land within the land drainage system between the site and the Awakino River, and further be exacerbated in the event of intense rainfall coincident with high levels in the Awakino River.

Given the propensity and magnitude of flooding in the Awakino River catchment, we would consider the applicants assessment to be insufficient to adequately identify potential effects from the Plan Change in terms of flooding. Further assessment of the potential impacts that the rezoning and development of the site may have on downstream drainage systems, culverts, flap-gates and other infrastructure, and flooding on other property within the catchment should be carried out, considering the potential for tailwater effects of the Awakino River.

### **SUMMARY**

In summary, the applicant has identified some of the potential adverse impacts of the plan change, and proposed some provisions within the Precinct Plan to attempt to address these through future Resource Consent applications. However, there are a several potential adverse stormwater effects that have not been identified by the applicant or have not been sufficiently addressed. These are summarized below:

- No identification of potential effects or assessment of the capacity of downstream drainage infrastructure to manage the increase in rainfall runoff flows and volumes during the primary design storm event (5-year ARI) due to increased permitted imperviousness.
- No identification of potential effects on flood risk between the site and the Awakino River nor assessment of the ability of downstream drainage channels, overland flow paths or other system infrastructure to safely manage the increased flood flowrates or volumes generated due to increased permitted imperviousness, particularly given the potential for the Awakino River to have tailwater impacts on these systems.
- Further there are certain Precinct wide provisions proposed for both water quality and water quantity mitigation, with no site-specific technical basis. Whilst these may be sufficient to manage potential effects, there is no identification of the need for these provisions, nor any consideration of the cost-implication of vesting infrastructure with unknown benefits to KDC.

We recommend that KDC seek further information from the applicant, clarifying the above items.

Should you have any queries relating to any of the above, please do not hesitate to contact us via details provided below.



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