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Dear Hilary

Request for further information - proposed Smooth Hill landfill RM20.280

1 We refer to your request for further information dated 13 October 2020, and our subsequent letter dated 4 November 2020.

2 Attached is a spreadsheet responding to the comments and questions raised by T+T in the section 92 request. The Assessment of Environmental Effects (**AEE**) and the technical reports have been updated (using track changes) to incorporate changes arising from the section 92 requests, and also to reflect the updated design. In considering the section 92 requests regarding the impact of the original design on the wetlands, the Council asked its experts to consider if the design could be amended to avoid, where practicable, adverse effects on wetlands whilst still providing for a cost effective long-term solution for Dunedin's waste stream. This has resulted in the updated design, which provides a smaller footprint for the landfill to achieve the reduced potential effects on wetlands.

3 As set out in the AEE and the Landfill Concept Design Report, the key changes to the design are:

(a) The swamp wetland and the wetland at the base of West Gully 4 have been avoided.

(b) In terms of the wetland areas adjacent to McLaren Gully Road, the effects have been significantly reduced so that only 16.5 m^2 /0.0017 ha of wetland area is now lost.

(c) The location of the attenuation basin has moved.

(d) The landfill footprint has reduced from 44.5 ha to 18.6 ha.

(e) Landfill (gross) capacity is reduced from approximately 7.9-million m^3 to 3.3-million m^3.

(f) Net waste capacity is reduced from 6.2-million m^3 to 2.96-million m^3.

4 The DCC has revisited its predicted waste generation rates and is now assuming this to be 60,000 tonnes/yr, however it is noted that the levels are prone to fluctuation for a variety of reasons. Based on a waste generation rate of 60,000 tonnes/year, and in light of the reduced footprint, the predicted landfill life has reduced from 55-years to approximately 40-years.

5 Other changes to the reports and AEE reflect the consequential changes to the staging and construction under the updated design. The plans and figures in the documents also show the change to the outline of the designation which was amended following stopping of the unformed legal road which previously was located within the site.

6 In the body of this letter we respond to the numbered questions in your letter of 13 October.

Question number	ORC question	DCC response
Consent sought		
1	Recent discussions with Boffa Miskell staff have identified that several permits to take and use water have been applied for that are more likely to be diversion activities. A number of drilling consents were also applied for and may actually be permitted activities. Please can you provide an updated version of Table 8 of the AEE showing what is being applied for. This should also include the discharge from the stockpile area stormwater system.	The schedule of resource consents required from ORC has been updated in light of the revised design - refer to Section 7.2.2 - Table 8 of the updated AEE. It is accepted that a number of activities that were previously identified in the original application as takes of ground or surface water requiring resource consent, are not takes of water. In that regard, only the take of ground water from the landfill groundwater collection system is considered to be a take of water for which resource consent is required as a discretionary activity under rule 12.2.4 of Regional Plan: Water. Furthermore it is accepted that drilling of land for groundwater monitoring bores is a permitted activity under rule 14.2.1.1 of the Regional Plan: Water, and does not require resource consent. Discharges from the site, which includes the stockpile areas are captured in Table 8 as a discharge of stormwater and contaminants to the Otokia Creek, for which resource consent is required as a discretionary activity under rule 12.B.4.1 of the Regional Plan: Water.
Assessment of Alternatives		
2	An assessment of alternative locations for creating a landfill was undertaken in the 1990s. Please can you provide details of the criteria that were used in this assessment, what additional matters would be taken into consideration if that assessment had been undertaken in 2020 (e.g. new legislation, urban sprawl etc), and whether the resulting recommendations would have been any different.	A report was undertaken by Beca in 1992 to assess potential locations for a future Dunedin City landfill. A copy is **attached**. The locations were assessed based on the following criteria: • Ecological (vegetation, wildlife, aquatic life, habitat, bird strike/airfields exclusion zone) • Physical (available capacity, land use inventory classification, availability of cover material, geology/mass

		movement, topography/stability, climate, surface hydrology, proximity to water catchment area, hydrogeology, leachate control, gas control) • Social (residential area, recreational areas, traffic access and impact, public health, visual impact/screening potential, cultural/archaeological features, impact on local water, end use of site) • Economic (distance from refuse source/energy consumption, site purchase, establishment cost, requirement for road upgrading) If the Council was to select a site for a landfill, today it would likely undertake the same assessment. The Council has applied for resource consents and is not applying for a designation. The operative designation in the 2GP has a term of 40 years. This means it can be and is being relied on in its present form, with its current conditions, to authorise the principal construction and operational work needed that would otherwise need resource consents under the district plan. We also note that the validity of the designation has not been challenged and cannot be challenged through the resource consenting process Therefore the Council has not re-assessed the Smooth Hill site or other potential sites against the criteria from the 1992 report as part of this application. Such an assessment is considered unnecessary because there is no statutory requirement to "re-assess" the merits of the operative designation when applying for resource consents. Nor is a Council required to periodically review its operative designations or reassess

		them when new legislation comes into effect or the receiving environment changes.
Waste Management		
3	Target 2 of DCC's Waste Minimisation and Management Plan 2020 (WMMP) is to reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50%, and Target 3 is to increase the diversion rate away from landfill and incineration to at least 70% by 2030. Policy 7.4.8 of the RPWaste states, *"To promote alternatives to landfills as a means of waste disposal"*. The explanation of this policy states that landfills should be considered only where other alternatives such as waste minimisation, cleaner production, recycling, or other methods of waste disposal have failed or are impracticable to implement.	
	• Based on disposal rates of 90,000 tonnes per year, the proposed landfill has an expected life of 55 years. The actual rate of waste disposed will be dependent on both population growth and the effectiveness of waste minimisation initiatives. Nonetheless, the projected rate of waste disposal seems to be at odds with DCC's WMMP targets. Please provide further detail regarding how both of these factors have been considered in the waste disposal rates predicted.	The application as lodged was based on the current (at that time) average disposal rate of 90,000 tonnes per year. The DCC has reviewed this in light of more recent data collected at Green Island and now assumes a rate of 60,000 tonnes per year and this, along with the smaller footprint in the updated design has reduced the expected life of the landfill to about 40 years. The annual waste disposal rate will however fluctuate based on population changes, changes to waste diversion and other events (such as significant natural disasters or other commercial collectors changing their practices).
	• It may be appropriate to apply an annual limit on the volume of waste that can be received to ensure that the activity is undertaken as described and assessed in the AEE, and that waste minimisation efforts are being implemented as effectively as possible.	The DCC is not seeking an annual limit on the amount of waste that can be disposed of. Significant region-wide, unexpected events can result in spikes in waste disposal rates and therefore it is preferable not to have an annual limit. Proposed condition 64 requires records of the quantities,

	Please indicate what a suitable annual limit might be based on projected population growth and planned waste minimisation initiatives.	types of waste and load inspections to be provided annually to ORC. The waste volumes are intended to be minimised across the city under the applicant's Waste Minimisation and Management Plan (copy **attached**).
	• The WMMP identifies that most of Dunedin's kerbside collection is undertaken by commercial rubbish bin services. Is it proposed that Smooth Hill will be receiving the municipal waste collected by these commercial operators, or is the 90,000 t/yr projection based on the small amount of municipal waste that the DCC currently collects?	The revised figure of 60,000 t/yr is a projection for Dunedin as a whole and is seen as the likely disposal rate from all commercial operators working in the city who may choose to dispose at Smooth Hill, and not just the waste the Council contractors collect. In addition this allows for sludge from the waste water treatment plant and waste from city rubbish bins.
4	Pg 76 of the AEE states, "*When the future waste and diverted materials system is delivered, there is a risk that landfill revenue will not be maintained which poses flow on effects for DCC".* Please provide further clarification of what is meant by this statement as it currently suggests that waste minimisation initiatives could be detrimental to DCC's revenue and therefore could be discouraged	The quoted excerpt came from Table 11 which lists the economic costs and benefits of Smooth Hill. Reduced revenue from landfill charges will need to be ameliorated through other, as yet undetermined, means, such as cost reductions, or deferring future earthworks stages of the landfill. It does not mean that waste minimisation activities will be discouraged. The DCC has prepared a Waste Minimisation and Management Plan 2020. The DCC will not discourage waste minimisation initiatives, instead one of the policies is that "*The DCC will ensure zero waste action is promoted within communities*".
5	Please provide a copy of the designation for the site that shows the conditions that already apply	The designation conditions are provided in section 3.2 of the AEE (page 17 of the updated AEE). These conditions are: 1. *This designation shall lapse on the 40th anniversary of the date on which this designation becomes operative.* 2. *A landscape plan showing proposed initial planting, final landform and final planting shall be prepared by the*

		Requiring Authority under the direction of a qualified landscape architect prior to the commencement of landfilling operations. Development of the site shall be in accordance with this landscape plan. 3. *Noise generated by any activity on the site shall comply with the following standards within 50 metres of the nearest house existing at the date on which the designation becomes operative - 55Dt/40Nt dBA. (NB These levels are subject to an adjustment of minus 5dBA for noise emissions having special audible characteristics).* The extent of the designation site is shown on figure 1, on page 2 of the AEE. Previously, there was an unformed legal road through the site, however this road has been stopped. On 26 March 2021, the DCC provided regulatory approval for the amendment to the designation to incorporate the former road.
Groundwater and Surface Water		
6	There will be at least one permit sought to take and use groundwater. Please provide an assessment of this activity and consent term sought against Policy 10A.2.2 of PC7 to the Regional Plan: Water	An assessment of the application to take and use groundwater from the landfill groundwater collection system has been provided at section 9.1.4 of the updated AEE.
7	Was any consideration given to potential permitted activities on Ōtokia Creek and its tributaries downstream of the proposed landfill site?	The applicant has assessed the potential effects on the environment as it is. The landfill concept has been designed to both minimise the volume of leachate and contain and collect any leachate to prevent it from entering the underlying soils, groundwater, or downstream receiving environment. Given the low level of effects beyond the site, it is considered unduly speculative to consider potential permitted activities

		which may be undertaken on Ōtokia Creek and its tributaries.
8	Please provide a plan showing the location of SW7	SW7 is offsite at the culvert beneath McLaren Gully Road. The location is now shown on drawing C309 and remains a proposed monitoring location.
Noise		
9	Please confirm whether the proposed bird scaring activities have been included in the noise assessment, and if not, whether it would make any difference to the conclusions of the assessment.	Potential dispersal methods proposed in the Bird Management Plan include using stockwhips, pyrotechnics, starter pistols and portable distress callers. These forms of bird dispersal rely upon short, intermittent bursts of noise to deter birds. The levels of acoustic energy that these practices typically give rise to will not be significant in terms of overall compliance of landfill activity with Condition 3 of the Designation and therefore they have not been included in the noise assessment and would not make any difference to those findings.
Draft Consent Conditions		
10	Condition 4: Please confirm how far in advance of construction commencing the detailed designs will be provided to ORC	Condition 4 has been amended to require the detailed design of the landfill development works, each stage of the landfill, and road upgrades at least 3 months prior to construction commencing. This is considered sufficient time for ORC review, feedback, and response from the consent holder as required.
11	Condition 9: Will regular inspection and reporting be undertaken to ensure that the infrastructure listed is maintained appropriately?	A new condition 12 has been included requiring the main components of the permanent stormwater system to be inspected and maintained in perpetuity. In addition, the final LMP will include ongoing requirements for inspection and maintenance of the landfill assets, including stormwater systems.
12	Condition 17: Please provide further detail regarding the 18-month baseline groundwater monitoring regime proposed, including	Condition 17 has been amended to require baseline sampling to occur at least every 3 months, with the 3 month frequency aligning with the frequency of monitoring during

	frequency of testing and determinants to be tested	operation of the landfill under condition 19. Reference has also been included to the determinants to be sampled, which are all those determinants set out in Section 8.6.3, Table 15 of the updated AEE.
13	Condition 18: Monitoring in ephemeral watercourses can be problematic. Please advise what alternative monitoring will be undertaken in the event that surface water bodies are dry during the sampling period. Please can you also confirm what the trigger levels will be, or at least provide further detail of how appropriate trigger levels will be determined. It is not appropriate to simply require that the trigger levels are approved by ORC at a later date.	The timeframe for undertaking baseline monitoring of surface water under condition 17 has been increased from 12 to 36 months in recognition of the difficulties of sampling ephemeral watercourses. The increased timeframe will enable sufficient time to enable the baseline water chemistry to be determined. In regard to surface water monitoring during construction and operation, while surface water monitoring will be unable to occur when watercourses are dry, there will still be an ongoing requirement under condition 19 to sample groundwater from the groundwater monitoring wells downgradient of the landfill, and also collected by the landfill groundwater drainage system. As outlined in the Groundwater Report, groundwater at the site has a connection to baseflows within the downstream Otokia Creek receiving environment, and therefore sampling will provide a basis for determining effects on downstream surface water quality, even when no surface flow is evident at the surface water sampling locations. Development of appropriate trigger levels is dependent on first undertaking the baseline groundwater and surface water monitoring under condition 17 over a sufficient period of time to understand the existing water chemistry, including the typical ranges of results over time for each determinant. Only once the baseline water chemistry is determined over that timespan will it be possible to set appropriate trigger levels for monitoring during construction and operation of the landfill. Condition 18 has been amended to make it clearer that the baseline water chemistry data will be used to establish the trigger values.

14	Condition 19: Groundwater monitoring bores shall be monitored at least every 3 months, and the groundwater collection system and surface monitoring points shall be monitored at least monthly. This means that contamination could be occurring for 29 days (surface water) or 89 days (groundwater) before it is detected	The 3 month frequency for sampling groundwater from the groundwater monitoring wells during construction and operation aligns with monitoring best practice for landfills as set out in the WasteMINZ guidelines. The 3 month frequency for sampling groundwater from monitoring wells during construction and operation will apply to the proposed full suite of trigger levels established under condition 18. The groundwater sump (GW7) will be continuously monitored for selected parameters that are indicative of leachate contamination in the groundwater underdrain system. This will provide early warning of any emerging issues and implementation of the response actions a - e. in condition 19.
14a	Please explain why the adverse effects of this have not been assessed, and how much groundwater contamination is likely to occur before it is detected (given that dilution is being relied upon as a solution in terms of passive leachate contamination of groundwater)	The revised approach to monitoring will provide early warning of any significant breach of the liner and leachate contamination in the groundwater underdrains. However, it is noted that groundwater movement in the shallow groundwater system is extremely slow. The proposed monitoring regime will provide sufficient time to identify and respond to any contamination in the shallow groundwater system.
14b	Please explain whether there would be any meaningful reduction in risk by monitoring more frequently	See above.
14c	Please provide timeframes for the various actions listed under a-d, and also provide further information regarding how significant leachate discharges will be remedied	Condition 19 has been amended to include timeframes for each of the contingency actions where any exceedance of the trigger levels occur.
15	Condition 37: Please can you also confirm what the trigger levels will be, or at least provide further detail of how appropriate trigger levels will be determined. It is not appropriate to simply require that the trigger levels are approved by ORC at a later date	Development of appropriate trigger levels is dependent on first undertaking the baseline ground gas emissions under condition 39 (previously numbered condition 37) over a sufficient period of time to understand the existing gas chemistry, including the typical ranges of results over time for each determinant. Only once the baseline

		gas chemistry is determined over that timespan will it be possible to set appropriate trigger levels for monitoring during construction and operation of the landfill. Condition 18 has been amended to make it clearer that baseline gas data will be used to establish the trigger values.
16	Condition 43: This condition requires that there is no clearance of indigenous vegetation from West Gully 2 & 3. Why are West Gully 1 and the East Gully not included in this condition?	The revised design has moved the footprint further away from West Gully 2 and 3 such there is negligible risk of clearance occurring in this area. Condition 45 (previously numbered condition 43) has however been amended to include West Gullies 1 and 2.
17	Conditions 45 - 50: The letter from T&T attached explains the need for management plans to be provided in advance. There is currently little detail regarding target levels, how exactly they will be achieved, timelines, reporting, or review if management strategies are ineffective. Please take this into consideration when preparing the management plans	This point is noted. Draft versions of the Falcon Management Plan, Lizard Management Plan, Vegetation Restoration Management Plan, and Bird Management Plan are provided as part of the draft LMP and address these matters. Note that plant and animal pest control measures are outlined in the draft LMP, but a specific Plant and Animal Pest Control Programme will be developed as part of the final LMP which will incorporate effective contemporary pest control measures available at that time.
18	Condition 47: The consent condition require that there is no net loss of ‘significant’ wetland habitat (as per PO-RPS and 2GP), but the new NES indicates that loss of any natural wetland should be avoided. Is it appropriate to focus on mitigating effects on ‘significant’ wetland only? Or should ‘all natural inland wetlands’ be considered?	Condition 49 (previously numbered condition 47) has been amended to make it clear that the Vegetation Restoration Management Plan will ensure that there is 'no net loss' of natural inland wetland habitat to align with the NES Freshwater.
19	Condition 50: There is no discussion of potential effects on neighbouring covenants from the influx of pests. Please take this into consideration when preparing the management plan.	This point is noted. As outlined above plant and animal pest control measures are outlined in the draft LMP, and which takes into account effects on neighbouring areas. A specific Plant and Animal Pest Control Programme will be developed as part of the final LMP which will incorporate effective contemporary pest control measures available at that time.

20	Condition 51: Should this condition be expanded to include works within the designation area too?	These conditions (now condition 52 – 55) have been amended to refer to construction of the landfill as well. Also as outlined at section 8.10 of the updated AEE, measures will be later incorporated in the outline plan of works application to avoid, remedy, and mitigate the adverse effects of the landfill construction and operational activities within the existing designation on archaeological values, and in particular for sites 145/71 and 145/72.
21	Condition 60: Does there need to be a condition limiting the amount of green waste accepted and / or forbidding onsite composting to manage odour (as per pg. 110 of AEE)?	A new condition 28 has been added which states that no composting activity shall occur on site. As outlined in section 5.2 of the AEE, generally organic bulk waste will be diverted from the waste stream, however it is expected that some organic green waste will be intermingled with other waste and be deposited in the landfill. Given the intermingled nature of green waste with other waste, a condition limiting the amount of green waste accepted would not be practicable, particularly in terms of the ability to accurately monitor and report compliance with any permitted threshold established.

7 We look forward to the ongoing processing of this application.

Yours faithfully
Anderson Lloyd

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